UNION SQUARE
NEIGHBORHOOD PLAN

CITY OF SOMERVILLE, MASSACHUSETTS

Joseph A. Curtatone, Mayor

Dear Friends,

This is a special moment in the history of both Union Square and our city as a whole. Our residents, business owners, and community organizations have fought for decades to correct the failed policies of the highway era and knit the fabric of our city back together by integrating public transit back into our great walkable neighborhoods. The evidence is clear that our economy, our public health, and our social fabric are best served by a human-scaled, walkable, bikable city with transit access for all.

Through thoughtful, lively community discussion over multiple years, we also declared our community's value-driven vision for our future. As a community, we chose to demand that our growth provide momentum not only for our economy but for our goals to maintain and nurture diversity, social equity, sustainability, open space, affordability and other values. We then codified those goals with the adoption of our award-winning, community-driven SomerVision Comprehensive Plan in 2012—and then we got to work.

We forged those intentions into actual plans via the Somerville by Design community planning process. As a community, we gathered for countless meetings. You gave your best ideas, differing opinions, and sharpest criticisms. Our planners created draft after draft as they hammered out a plan that seeks to reflect our best collective vision. Now, finally, we are on the cusp of something extraordinary: realizing our shared goals via the Union Square neighborhood plan that we built together.

We built this plan on a good foundation. Union Square is already a beloved neighborhood. This plan seeks to both enhance and complement what we cherish in our square. It seeks to realize progress while preserving the unique character, independent businesses, diversity, and history that are the source of our Union Square pride. Above all, it seeks to ensure that Union Square remain a place for all and a source of opportunity for everyone.

When we began this process, the only guarantee we had was that its success would depend on the community taking ownership. It is the people who live and work in the community who provide valuable insight into the needs of any neighborhood, and we structured our public process to channel that expertise into actionable public policy. You rose to the occasion. On behalf of the City and those who will benefit from your efforts, I thank you.

But let me also remind you, a plan document is not the end of this process, so please stay engaged. Whether we act or not, change will come to Union Square. But I am confident that by working together, from a shared vision laid out in this plan, that we can manage that change and use it to achieve our collective goals.

Joseph A. Curtatone, Mayor

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Alex Bob, *SNI Program Coordinator*
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Rebecca Lyn Cooper
Gerard Amaral, *Alternate*

Dedication

This plan is dedicated to the loving memory of Ken Kelly, prolific Somerville restaurateur, business leader, and determined advocate for the revitalization of Union Square.

Ken Kelly (1972-2016)

Adoption

This plan was adopted on May 5, 2016 by the Somerville Planning Board as an amendment and implementation appendix to SomerVision, the comprehensive Master Plan of the City of Somerville, per Chapter 41, Section 81D of Massachusetts General Law.

Special Thanks

The City of Somerville would like to thank the many community members that attended our planning events and provided their valuable input in a collaborative process. This plan would not exist without them.

The City of Somerville would like to thank Union Square Station Associates (US2) for their financial support towards the creation of this plan.

The City of Somerville would like to thank Union Square Partners, LLC for the use of the former Union Square Post Office as the headquarters for the Somerville*by*Design neighborhood planning events.

List of Abbreviations

ADU	Affordable Dwelling Unit
AMI	Area Median Income
CAC	Citizen Advisory Committee
CPA	Community Preservation Act
CIP	Capital Improvement Plan
CTOD	Center for Transit-Oriented Development
DHCD	Massachusetts Department of Housing and Community Development
EJ	Environmental Justice
GLX	Green Line Extension
HPC	Historic Preservation Commission
HNA	Housing Needs Assessment
HUD	Department of Housing and Urban Development
ITE	Institute of Transportation Engineers
LHD	Local Historic District
MassDOT	Massachusetts Department of Transportation
MBTA	Massachusetts Bay Transportation Authority
OSPCD	Mayor's Office of Strategic Planning & Community Development
SAC	Somerville Arts Council
SRA	Somerville Redevelopment Authority
SCA	Subdivision Control Act
SZO	Somerville Zoning Ordinance
TOD	Transit-Oriented Development
TDM	Transportation Demand Management
US2	Union Square Station Associates
ZVA	Zimmerman Volk Associates

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A Vision for the Future
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WELCOME TO UNION SQUARE

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Executive Summary

Achieving SomerVision and Keeping Union Square's Soul

In 2009 there was a call to residents: Help create Somerville's long-range plan. The call did not go unanswered. Over four years, the hard work and dedication of a 60 person steering committee and hundreds of participants at public meetings led to SomerVision, the City's first comprehensive plan. This was the start. Stating our shared values and setting our long-term goals are vital steps towards informing how Somerville grows and develops over the next 20 years.

How each neighborhood uses the framework of SomerVision is embodied in each neighborhood plan. Gilman Square and the Lowell Station Area neighborhood plans were finished in 2014. In 2015, the residents of Union Square wanted the same process to inform their future. The resulting document is the Union Square Neighborhood Plan.

This is the first neighborhood plan in Somerville to put policy first and foremost, before physical development. Union Square residents care deeply about their community and want to make sure that over time, no matter what type of growth and change happens, that Union Square is a place for everyone. The Vision for the Future chapter details the programs and policies that will help the community reach their goals for economic development, equity, public realm, housing, development, and mobility.

This chapter seeks to address many community concerns that were raised in the visioning sessions and charrette. It combines scholarly research and best practices from across the country with the ideas and strategies that were vetted after being proposed during the community process. While it is not an all-encompassing list of solutions, it is a framework to meet our ambitious policy goals.

The physical development of the Union Square neighborhood plan includes streetscapes, public space, and new development. SomerVision calls for 85% of development in 'transform' areas, 30,000 jobs, 6,000 new housing units, and a 60/40% commercial/residential split of development. But, 60/40 of what? How does what's been built since 2012 change targets? The plan addressed these questions.

Due to the perseverance of residents, stakeholders, and city staff, this plan meets the goals of SomerVision. Commercial development will create 6 jobs to every one housing unit. There will be 12.5 new acres of open space developed plus shared streets. A Square built around increasing connectivity, managing automobile trips, and the Green Line Extension will ensure that 50% of new trips will be by walking, biking, or transit.

The design priority for the streets in the plan area are pedestrians first, then public transit and cyclists, followed by automobiles. The streetscapes eliminate the car-centric planning of the last century. Sidewalks will be wider, crossing will be safer, separated bikeways are part of the typology, and yes, cars will be allowed too. Interim improvements as well as the ideas in this neighborhood plan will reduce traffic in Union Square.

The neighborhood plan will double the amount of open space in the plan area by reclaiming wasted right-of-way, requiring 15% public space of private development, and identifying acres to be developed by the City. There will be more plazas, playgrounds, and community parks, some can have much-needed playing fields.

What will Union Square and Boynton Yards look like when they are developed? This plan illustrates one example, based off of the values discussed during the planning process. The plan has blocks subdivided, to create a more comfortable neighborhood scale. Buildings step back after five stories. The plan proposes guidelines and standards to develop to meet a human scale based on feedback and input from Union Square residents and stakeholders.

Lastly, implementation. This is the new beginning of the plan and will take 20-30 years. Just like the collaboration and dedication it took to get to a final plan, implementation will take collaboration, dedication, and endurance.

The Union Square Neighborhood Plan reflects the hard work, dedication, collaboration, and compromise of stakeholders working together. Thank you to everyone involved who pushed harder, brainstormed new ideas, spoke up, and showed up. This plan is for you.

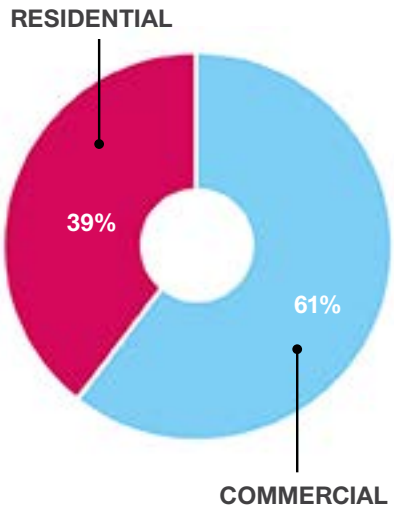
PLAN HIGHLIGHTS

DEVELOPMENT IN UNION SQUARE
3,738,915 sf

DEVELOPMENT IN BOYNTON YARDS
3,136,742 sf

TOTAL SQUARE FEET OF DEVELOPMENT
6,875,657 sf

NEW ACRES OF PUBLIC SPACE
12.32 + shared streets



TOTAL NEW COMMERCIAL DEVELOPMENT
4,220,620 sf

TOTAL NEW RETAIL DEVELOPMENT (MAXIMUM)
546,112 sf

TOTAL NEW ARTS & CREATIVE ECONOMY SPACE
90,455 sf

TOTAL NEW JOBS
15,465

TOTAL NEW HOUSING UNITS
2,349

TOTAL NEW AFFORDABLE HOUSING UNITS
470

NEW HOUSING IN UNION SQUARE
1,319

NEW HOUSING IN BOYNTON YARDS
1,030

The History of Union Square

Somerville's First Commercial Center

Union Square is Somerville's oldest commercial district and once served as the economic engine of the city.

Originally a small rest stop situated on marshland, it exploded with growth when the marsh was filled and quick routes to Boston became possible. In 1853, when firefighters erected a flagpole across the street from the engine house, the Square became known as "Liberty Pole Square," but the name was soon changed to "Union Square" when it became a recruiting center for Union soldiers during the Civil War. Prospect Hill was of strategic importance during the Civil War due to its height and visibility in Charlestown, Cambridge, and Somerville.

The first horse-drawn streetcar system in the Boston area was established in 1852 between Union and Harvard Square. The development of row houses and apartment hotels along the streetcar line made Union Square an attractive area for Boston commuters to live. In the early 1900's, electric streetcars made 88 stops a day in Union Square. They brought Somerville commuters to their jobs in Boston and Boston and Cambridge commuters to the burgeoning industries in Union Square which included grist mills, brick manufacturing, and ink, glass, and copper tubing factories.

The mid-20th century brought with it changes in transportation modes. In particular, the widespread use of the automobile gave consumers greater mobility. As was true for many historic commercial areas throughout the country, Union Square began to experience the negative effects of a new preference for living and shopping in the suburbs. At the same time, the Northeast began to lose ground as the country's manufacturing center.

To exacerbate matters in Union Square, the Commonwealth adopted a new transportation model, replacing streetcars with highways to serve communities north of the Charles River. Union Square was first by passed by McGrath Highway and subsequently Interstate 93. Although rail service does traverse Somerville (the Lowell and Fitchburg Commuter Rail Lines), it too was intended to serve suburbs beyond the city, as the routes were designed without stops in Somerville.

After the light rail system servicing Union Square was removed, the local economy collapsed. Union Square lost density and urban character as property owners with vacant commercial spaces removed the top stories of their buildings to lower their commercial property tax. When the Ford Motor Assembly Plant in Assembly Square closed in 1958, portions of its workforce turned to Union Square to open automotive niche businesses, including salvage and auto repair and resale.

Disconnected from Boston and Cambridge, Union Square could have been described as a cut-through for the remainder of the century. Boynton Yards was developed in the 1990's on reclaimed railroad right-of-way. At the same time, people started to seek out Union Square as an affordable place to live with accessibility to employment centers. Artists, young professionals, entrepreneurs, and families joined with longtime residents to create the great community and destination that is known today.

FACING PAGE: Four-story buildings wrap the intersection of Bow and Warren Streets c. 1907
ABOVE: Union Square train station c. 1908
BELOW: Boarding the trolley in Union Square. The building at the center of the photo still exists (current home of East Boston Savings Bank) but is two stories shorter. c. 1910

DEVELOPMENT TIMELINE

1625

1800

1850

NEIGHBORHOOD DEVELOPMENT

1630: Somerville settled as part of Charlestown, MA
1775: Prospect Hill Citadel built
1776: Grand Union Flag raised at Prospect Hill Citadel by George Washington's Continental Army

1842: Somerville Pop. 1,013
1840's: Prospect Hill developed as suburb
1800's: Duck Village developed as workers housing for employees of Middlesex Bleachery & American Tube Works

1865: Somerville Pop. 9,353
1890: Somerville Pop. 40,152
1880: Union Square develops into a hub for business
1885: 3-deckers and other workers' housing built
1898: Land acquired from Wyatt Brickyard set aside for Lincoln Park

TRANSPORTATION

1685: Rangeways are built every ¼ mile through farmland to provide north-south connections

1830: Somerville Ave. extended west to Porter Sq. & east to Bridge Street (Route 28)
1841: Fitchburg rail line constructed to Fresh Pond with a commuter stoop at Kent Street
1845: A horse railroad carries passengers to Harvard Square

1860's: Commuters access Boston & Cambridge by horse and streetcars. Professionals and tradesmen use their own transportation, stemming the construction of barns & carriage houses.

ASSETS

1685: Industry uses the Millers River to ship goods to Boston

1845: Mid-nite Convenient Store established by Vinal family
1804: Milk Row Cemetery established

1850's: Stone Building, Eberle Building, & part of Hill Building developed. Drouet, Bennett, & Richmond Block serve as local landmarks today
1876: Millers River filled

INDUSTRY

1637: Land between present-day Broadway & Somerville Avenue divided into 'rights of pasturage' for common use
1681: Land first granted to individuals
1700: Union Square area is clear cut, clay excavated for brick manufacturing

1800: Farming is major business for most residents
1820: Middlesex Bleachery and Dye Works established, Osgood Dane's, Allen Rope, & Wyatt Brickyard are major businesses

1851: American Tube Works established
1854: Union Glass Company established
1885: Wyatt Brickyard closes
1890: American Tube Works completely rebuilds and modernizes facilities through 1920

1900

1900: Infill housing continues. Single family houses subdivided during Depression. Practice continues through World War II to accommodate need for additional housing during time of austerity

1930: The private use of the automobile explodes

1920: The streetcar system starts to be dismantled and replaced with bus service

1928: Massachusetts Northern Artery built (McGrath Highway)

1903: The Prospect Hill Observatory & Park built

1903: Union Square Fire Station (92 Union Square) built

1908: The Star Theater, Strand, & Union Square Olympia Theater open

1917: Marshmallow Fluff Invented by Archibald Query

1930: Ames Safety Envelope Company established

1934: American Tube Works leaves Somerville following acquisition by Walter O'Hara

1937: Middlesex Bleachery closes

1935: United States Post Office build a Main Branch in Union Square

1950

1944: GI Bill offered incentives of home ownership, cars, & schooling spurring exodus to suburbs. Neighborhood character suffers.

1995: Rent control ends in Massachusetts

1990: State agrees to legally binding resolution to extend the Green Line to offset burdens of traffic & pollution associated with the Big Dig project.

1988: Former Somerville Police Headquarters (66-70 Union Square) repurposed into commercial building. Stone Place Park is funded as a condition of sale

1958: Niche automotive businesses are opened following the closure of the Ford Motor Assembly Plant in Assembly Square

2000

2003: Joseph Curtatone elected 35th Mayor of Somerville

2005: Union Square Main Streets organized

2010: Somerville Pop. 75,754

2012: Somerville named one of the Best Places to Live by Boston Magazine

2015: Federal Government commits $996 million to extend the Green Line from Lechmere Station.

2005: Union Square Farmers Market opens (Saturdays)

2010: Artisan's Asylum opens in former Ames Envelope complex.

2010: Ames Safety Envelope Company closes

2014: Ames "Business Park" becomes entrepreneurial epicenter of Somerville

2014: Millbrook Cold Storage, the last of the slaughterhouse industry closes, and is redeveloped into apartments

Union Square Today

"Out of the Shadow of Boston and Cambridge"

— New York Times, 2014

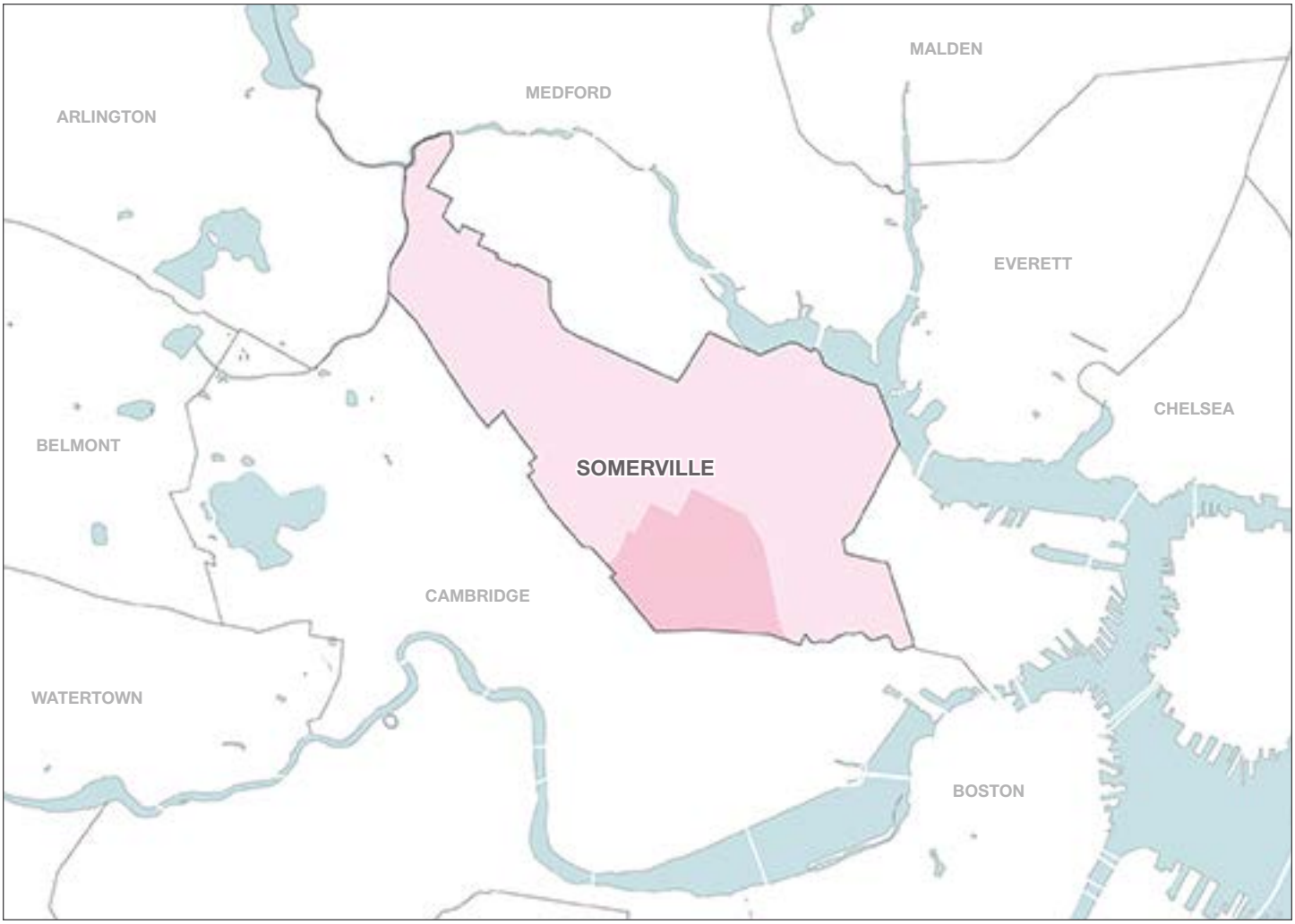
Union Square is approximately 2.5 miles northwest of downtown Boston. The neighborhood is located at the southern end of the City of Somerville, abutting the City of Cambridge to the south, Park, Laurel, and School Streets to the west, Highland Avenue to the north, and McGrath Highway to the east. The neighborhood plan incorporates smaller, sub-neighborhoods, including Duck Village and Boynton Yards. A portion of the Spring Hill neighborhood is also included in the plan area. The Prospect Hill Monument is the most recognizable landmark and is visible from points throughout metro Boston.

Historically, Union Square was a center of commerce, rail, manufacturing, and industry because of its proximity to downtown Boston. Due to cultural shifts and transit investment (and divestment) over the course of a century, Union Square has become a neighborhood-serving square that is burdened with a regional traffic problem. At the same time, other regional centers like Harvard Square and Longwood Medical area have grown and prospered even though they're farther from downtown Boston.

In this time of relative isolation, the Union Square neighborhood has emerged as one of the region's most interesting cultural destinations. Long-time residents welcomed students and young families, many of them commuting to Kendall Square and Boston. After a major renovation of the building, the Independent opened in 2001 by restaurateur Ken Kelly. The Fluff Festival launched in 2006 to celebrate Archibald Query's invention. The list can go on but the momentum and energy has been building in Union Square for over 15 years.

The Union Square planning area is ready to capitalize on its uniqueness and proximity to Boston, but this presents a planning challenge. There are many opportunities to

BELOW: Somerville in context with surrounding communities.

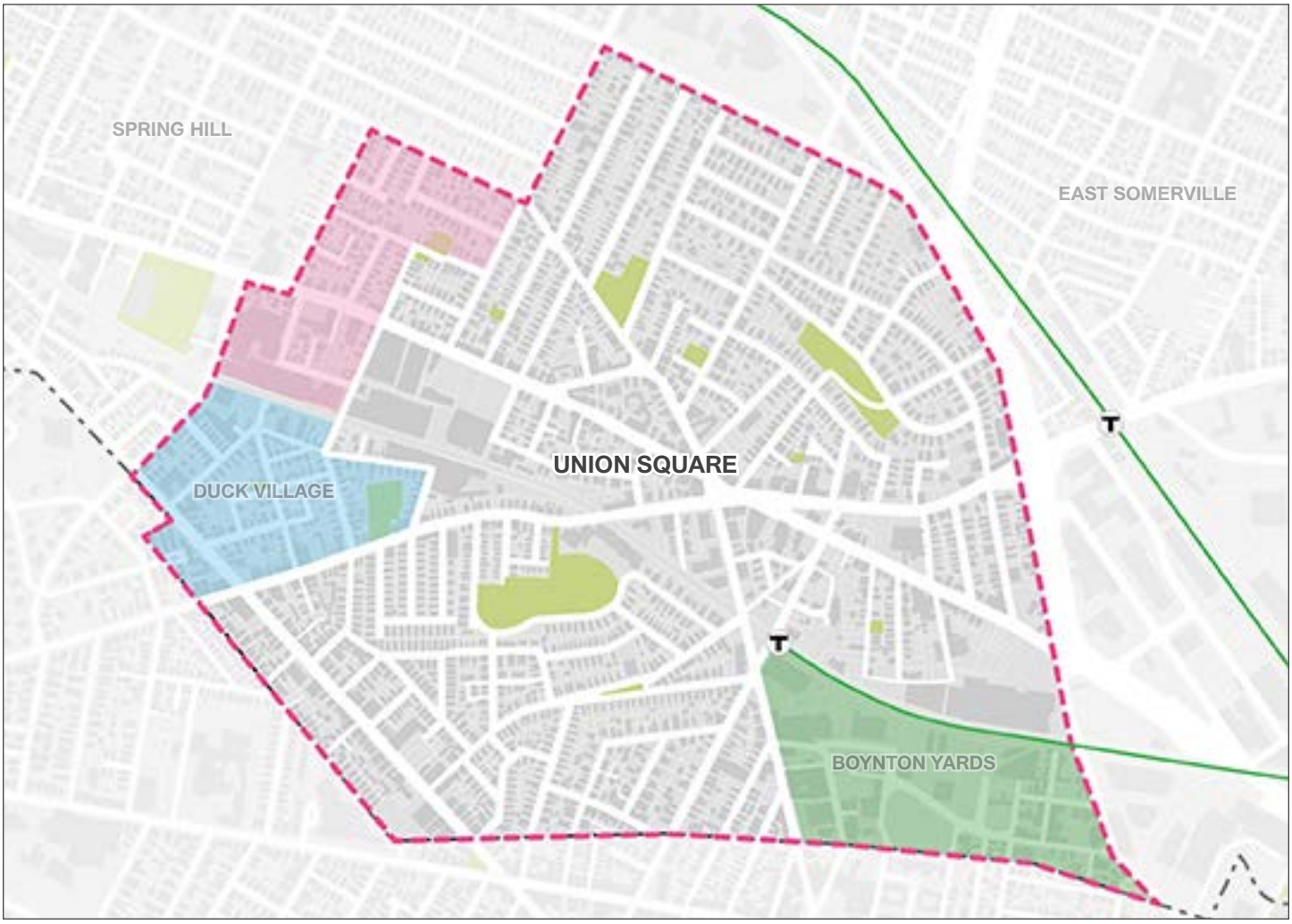


redevelop areas surrounding the new Green Line station and position Union Square as a destination for significant commercial development. But development must be done in a way that is reflective and supportive of the existing vibrant community.

SomerVision identified 42 acres of the Union Square and Boynton Yards neighborhoods as areas to transform. This gives unique opportunity for certain parts of the plan are to engage in large scale redevelopment that builds from the local and truly authentic character throughout the neighborhood. The city can create an employment center that takes advantage of the close proximity to downtown Boston, Harvard, and MIT, and in the process, bring strength to the existing mixed-use neighborhood.

The Green Line is imperative to this plan. Beyond the Green Line, other transit opportunities may further benefit the square. Inter-urban connections, such as installing passenger rail on the existing Grand Junction Line (or the "Yellow Line"), would provide additional benefits for Union Square by connecting the neighborhood directly to Kendall Square, MIT, Boston University, the Longwood Medical area, and the neighborhoods surrounding these institutions. Extending the Green Line from Union Square to Porter Square would further connect the MBTA train and commuter rail system and provide easier access to points in Cambridge and beyond.

BELOW: The Union Square plan area with sub-neighborhoods.



DEMOGRAPHICS & HOUSING

TOTAL POPULATION
13,685

NON-WHITE
3,489

UNDER 18
1,489

OVER 65
1,119

POPULATION DENSITY (PER ACRE)
31.8

TOTAL HOUSING UNITS
5,937

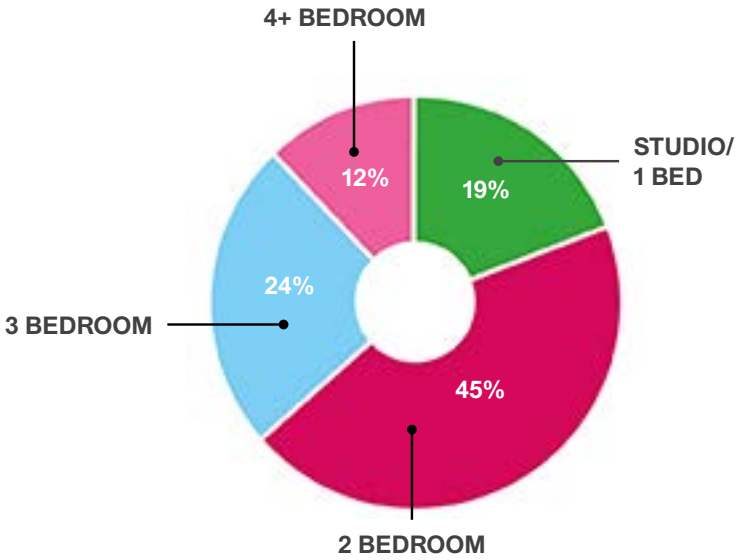
AFFORDABLE UNITS
473 (9.9%)

HOUSING DENSITY (PER ACRE)
13.8

RENTER HOUSEHOLDS
4,746 (80%)

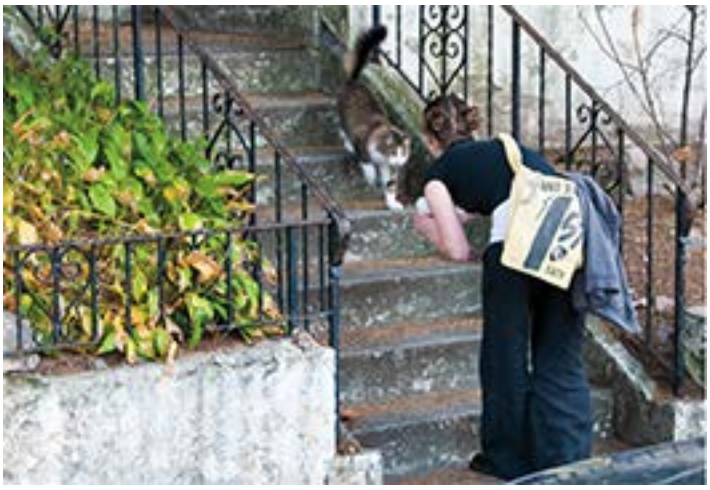
HOME OWNER HOUSEHOLDS
1,191 (20%)

SINGLE UNITS/CONDOS BY BEDROOM



FACING (L TO R): Union Square Farmer's Market, SAC presents Smell-O-VIsion (2007), Snowball Fight (2013), Rock & Roll Yard Sale, a girl petting a cat


Welcome To The
UNION
Square
Farmers
market
Every Saturday
9-1pm until Oct
29



LOCAL BUSINESS

PLAN AREA BUSINESSES (TOTAL)
191

CURRENT VACANCY RATE
3.7%

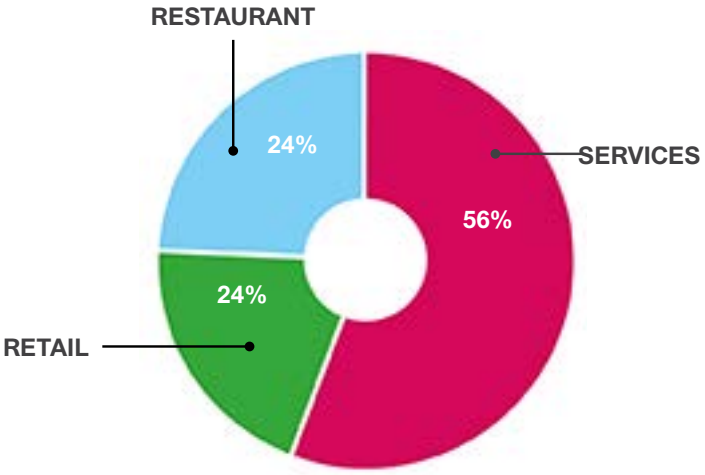
FOOD/BEVERAGE MARKETS
14 (7 International)

LIQUOR LICENSES (TOTAL)
17

NATIONAL FRANCHISES (TOTAL)
5

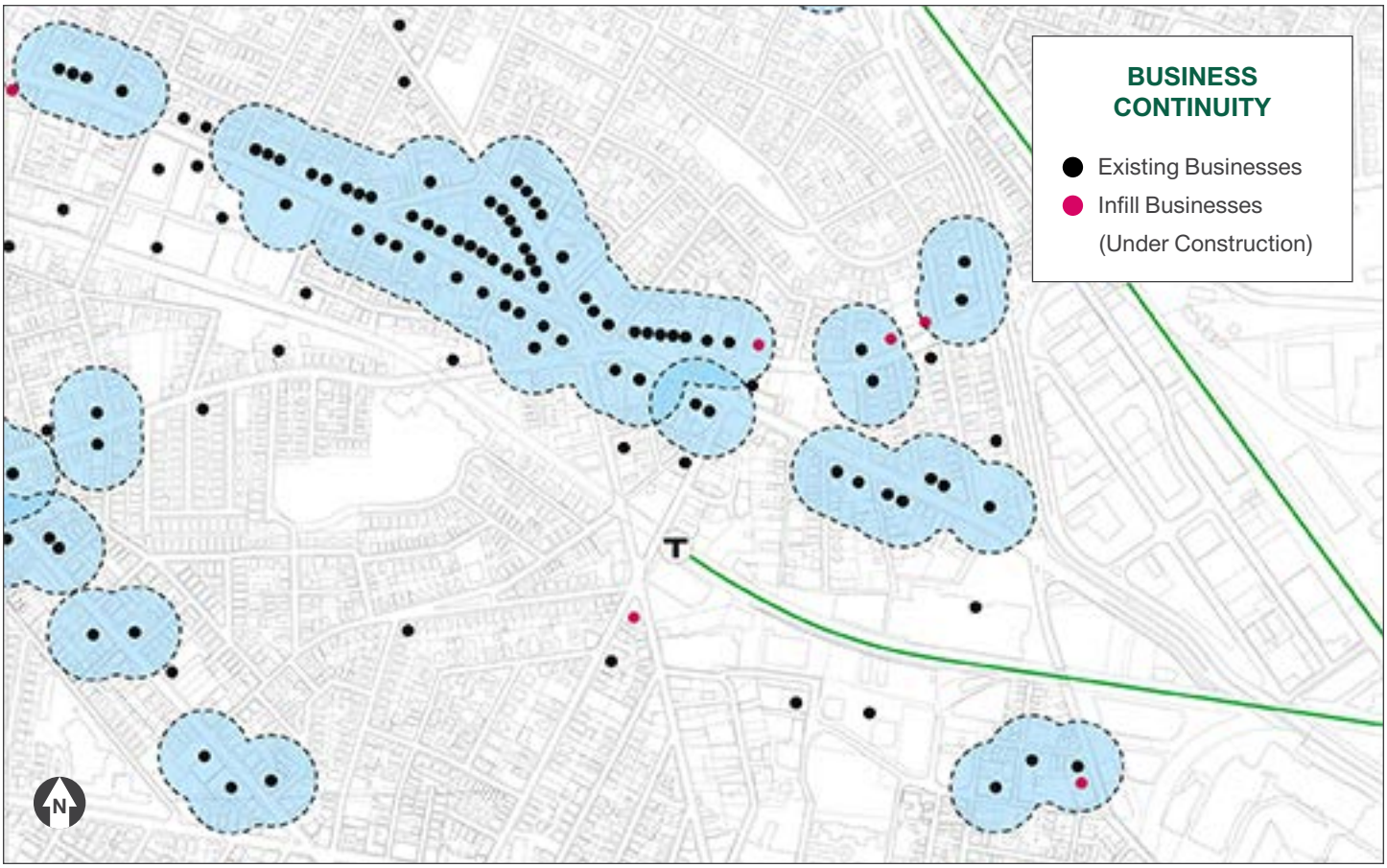
AVERAGE COMMERCIAL RENTS
$20-$40 (SF/Year)

BUSINESS TYPE



FACING (L TO R): Inside Artisan's Asylum, Ricky's Flower Market, Bloc 11 Cafe, Reliable Market storefront, Market Basket: the melting pot of Somerville

BELOW: Frequent storefronts create a strong business district with little 'missing teeth' in continuity




Flower Market


BLOC
11 CAFE
UNION SQUARE


RELIABLE MARKET
東洋食品
MEAT
FISH
PRODUCE
BEER & WINE
SOJU & SAKE


MARKET BASKET

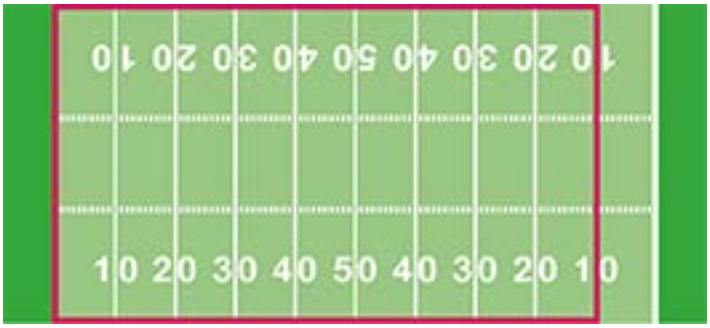
PUBLIC SPACE

FACING (L TO R): Union Square Farmers Market, Perry Park, Prospect Hill Monument/Landmark, Milk Row Cemetery, Walnut Street Park

.92

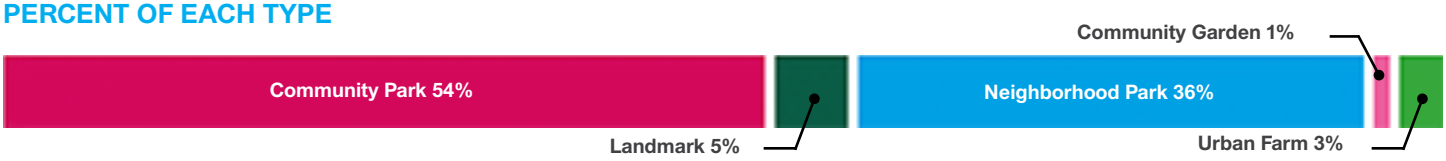
Acres/1,000 Residents

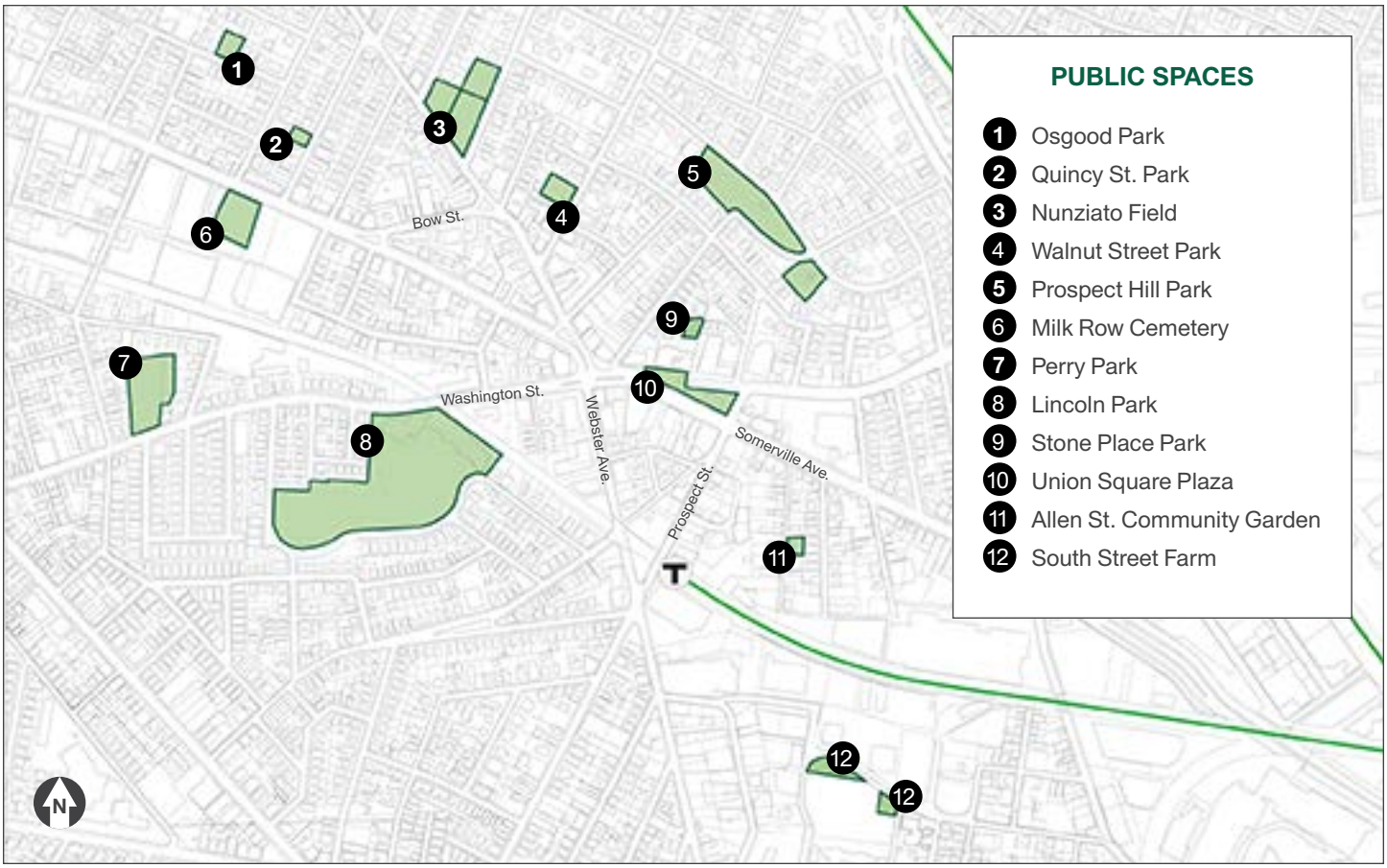
One (1) acre is about 9/10 of an American football field



NAME	ACRES	TYPE
Osgood Park	.4	Neighborhood Park
Quincy Street Park	.12	Neighborhood Park
Nunziato Field	1.48	Community Park
Walnut Street Park	.29	Neighborhood Park
Prospect Hill Park	2.3	Neighborhood Park
Milk Row Cemetery	.69	Landmark
Perry Park	1.27	Neighborhood Park
Lincoln Park	6.21	Community Park
Stone Place	.18	Neighborhood Park
Allen St. Comm. Garden	.12	Community Garden
South Street Farm	.39	Urban Farm
Total	**13.45**	

PERCENT OF EACH TYPE

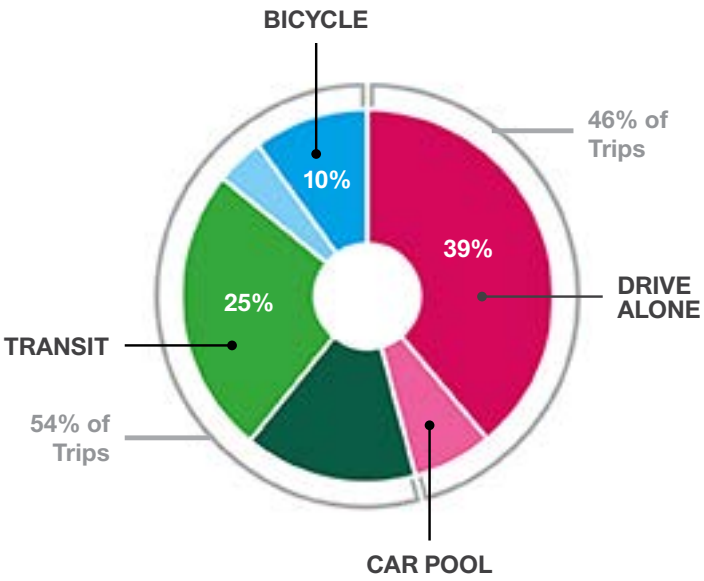




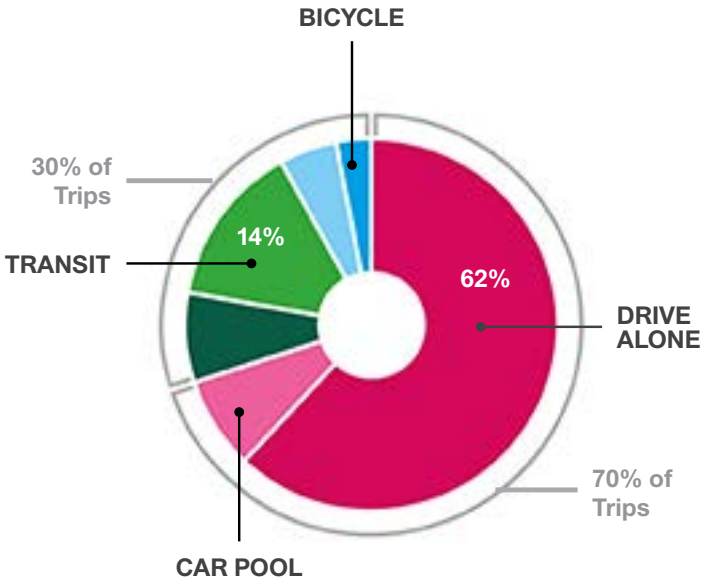
TRANSPORTATION

Mode of Travel to Work

LIVING IN UNION SQUARE



WORKING IN UNION SQUARE



ON STREET PARKING PERMITS

5,175

MASSACHUSETTS AUTO REGISTRATIONS

5,202

VEHICLES PER HOUSEHOLD

.88

ANNUAL VEHICLE MILES TRAVELLED

53.4 Million

ANNUAL FUEL USE

2.4 Million Gallons

FUEL COSTS

$4.9 Million

TRANSPORTATION COSTS*

$6,624 per year

TRANSPORTATION COSTS*

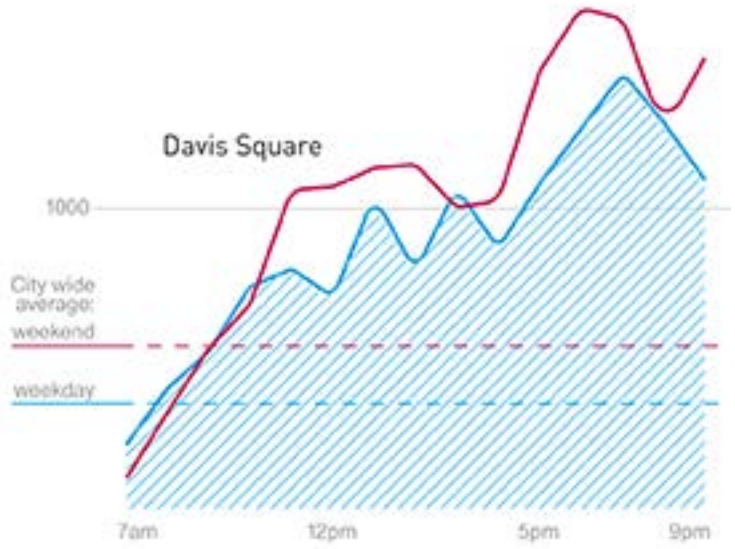
11% of household income

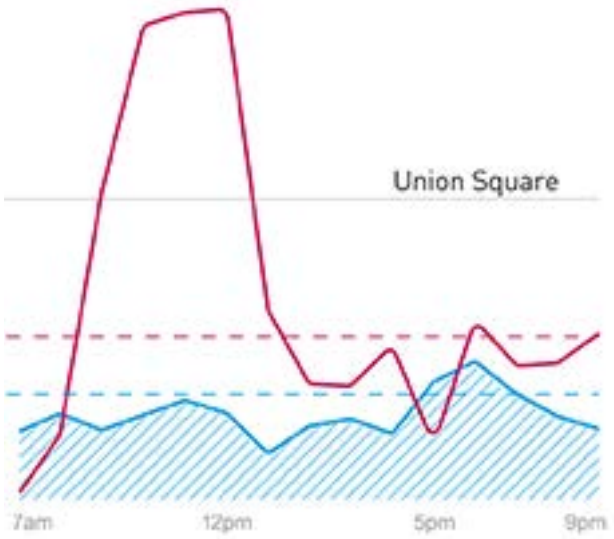
*Calulated with the US DOT HUD Transportation Cost Calculator with a median income of $61,000/year, 2.5 persons/household, 1.21 commuters, and 1 automobile.

PEDESTRIANS PER HOUR

Weekday
Weekend

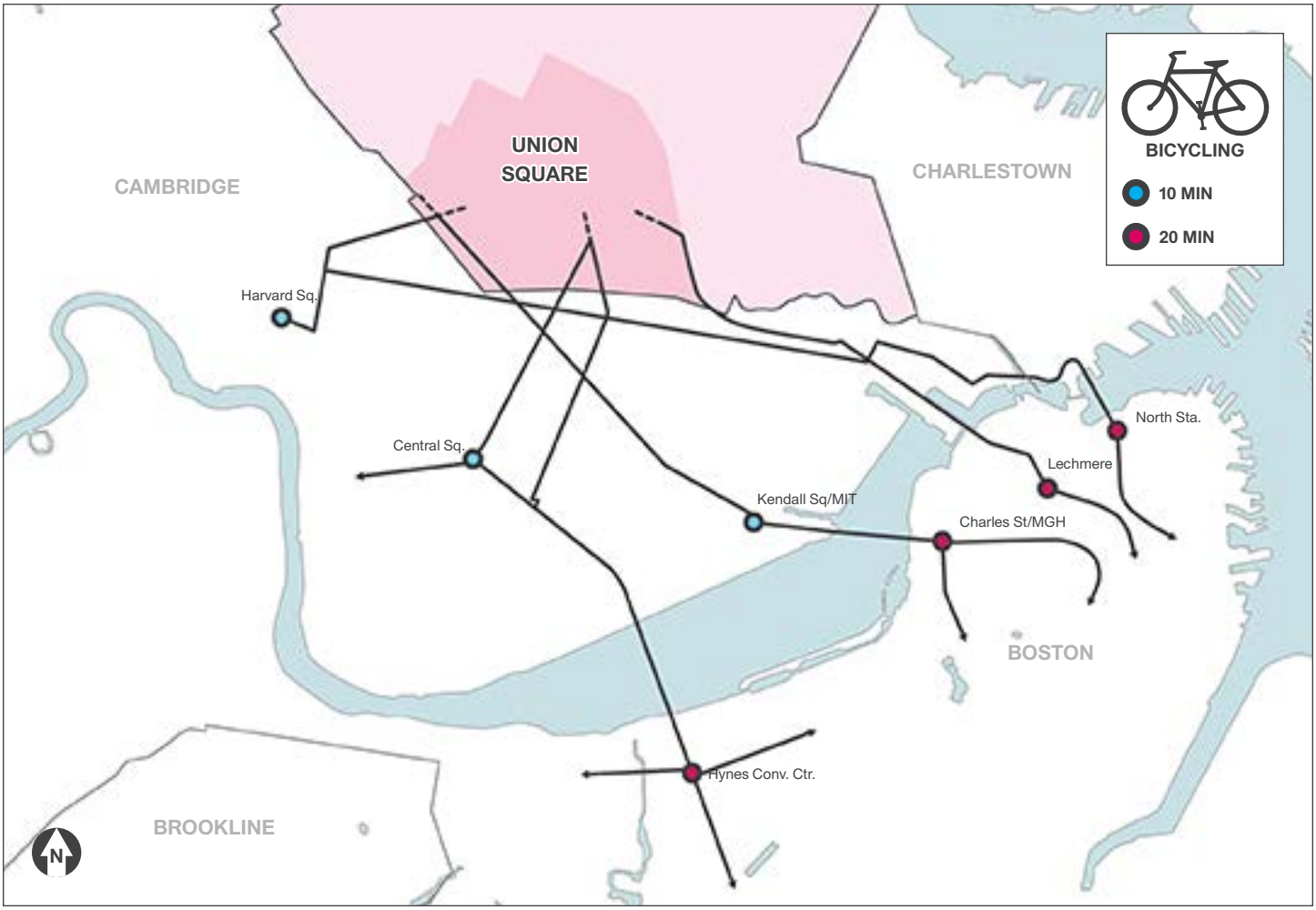
WALKABILITY

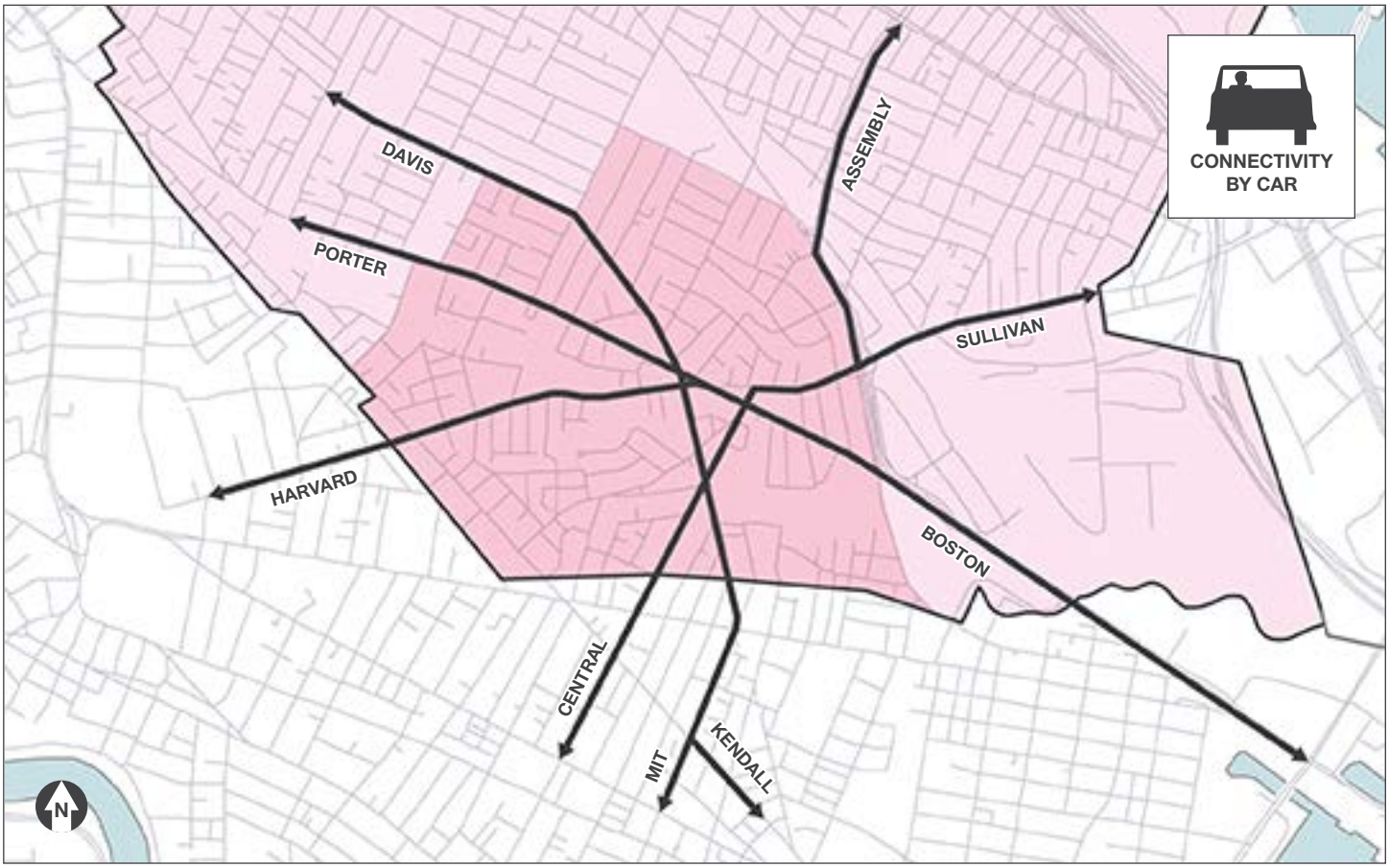




DAVIS SQUARE

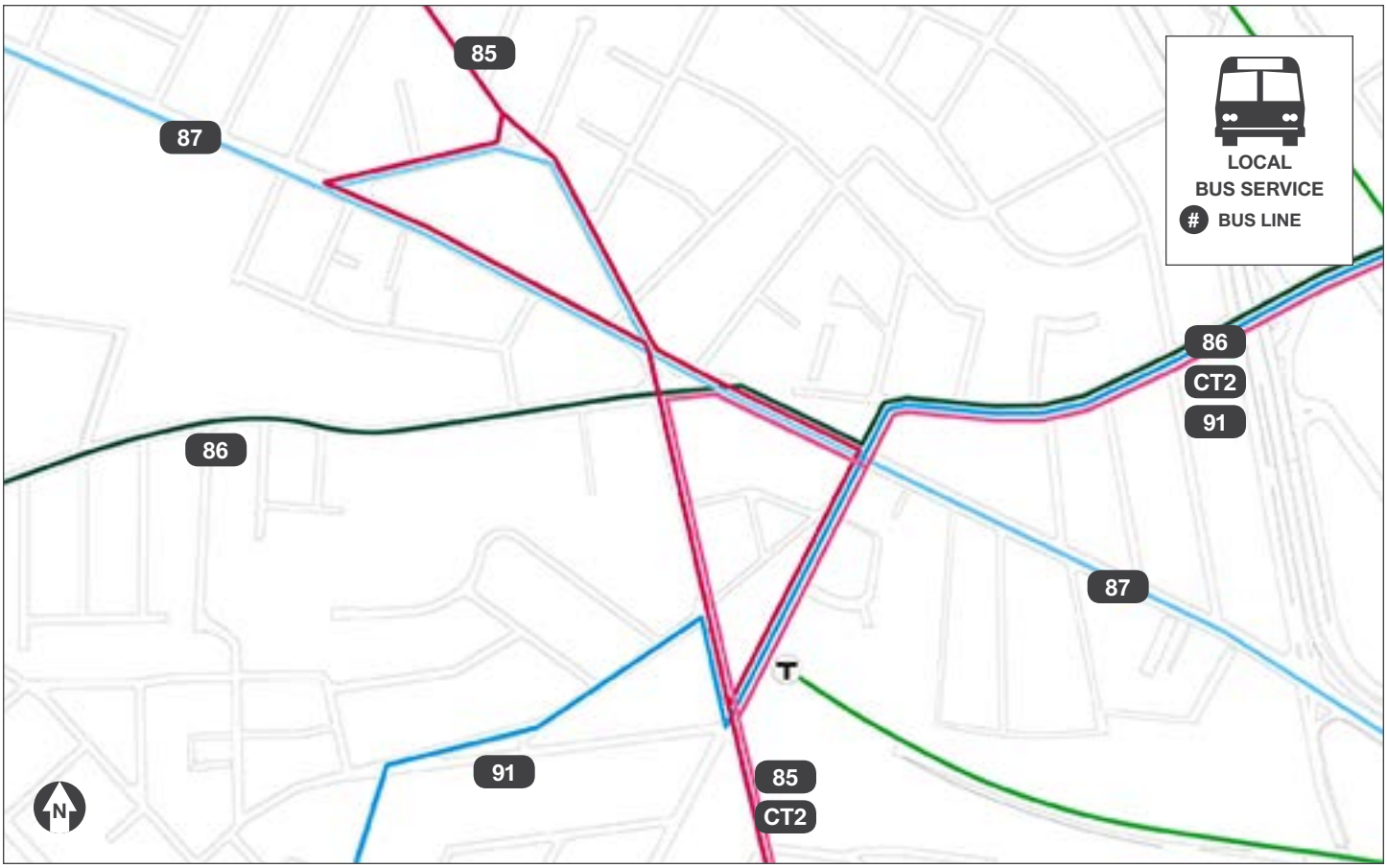
UNION SQUARE

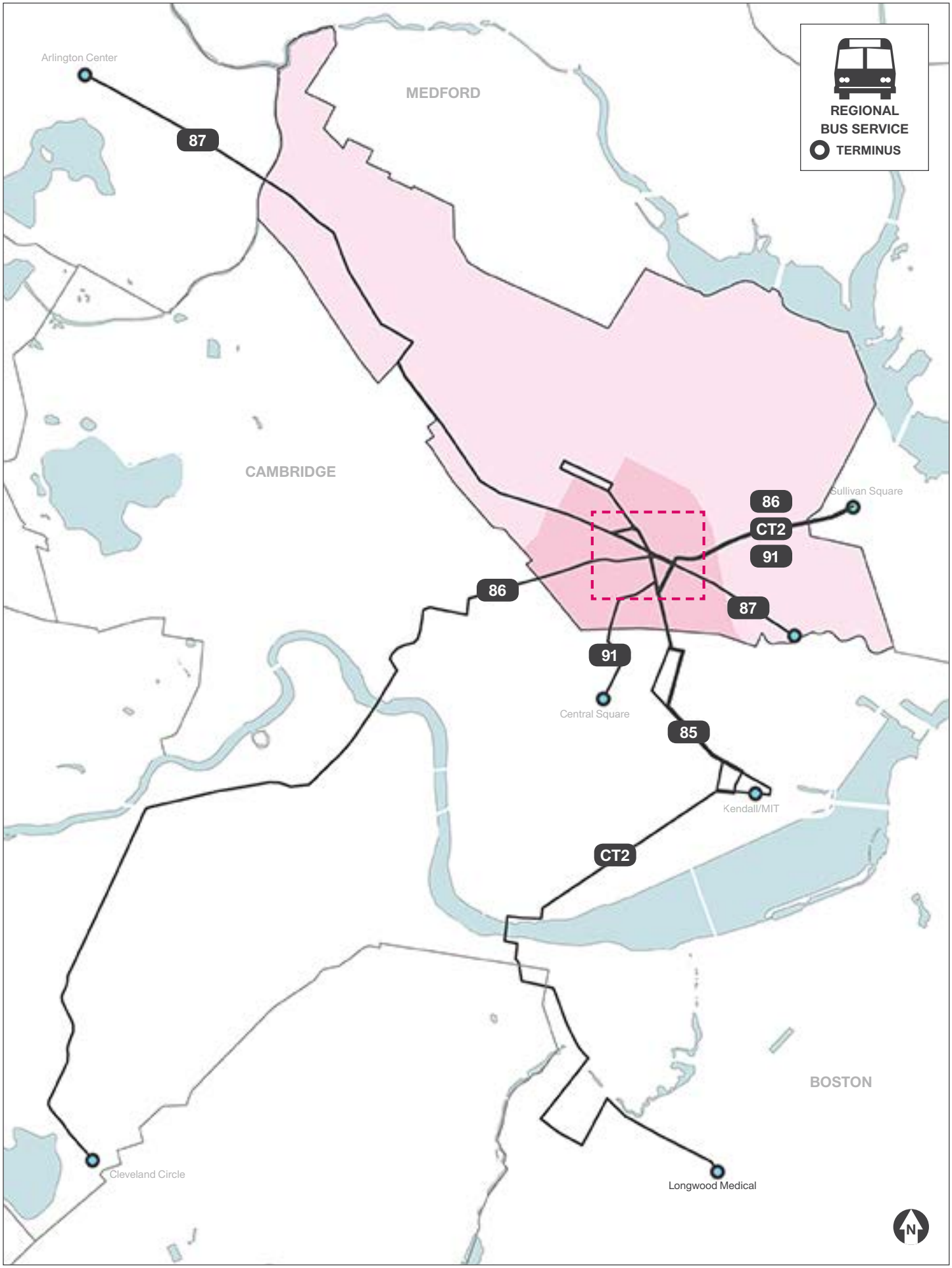




ABOVE: Major driving routes from Union Square.

BELOW: A close up of bike routes through the heart of Union Square.




REGIONAL
BUS SERVICE
TERMINUS
MEDFORD
CAMBRIDGE
BOSTON
Arlington Center
Sullivan Square
Central Square
Kendall/MIT
Cleveland Circle
Longwood Medical
87
86
CT2
91
85
N

Bringing the Green Line to Somerville

Shovel-Ready for the Return of Transit to Union Square

Just like the rest of Somerville, Union Square has a long and complicated relationship between transportation, economics, and quality of life. Going back to the mid-nineteenth century, both public and private investments in various forms of transportation gave families and businesses a reason to invest in Somerville. Thousands of homes were built, commercial and industrial activity flourished, and community pride blossomed. The city grew to serve a vital role in the regional economy as a gateway for immigrants, a hub of diverse employment opportunities, and a center of production for goods that were shipped throughout the Boston metro area and nationwide.

For years, Somerville residents and workers had transportation choices; the city was built of highly walkable neighborhoods that were serviced by efficient and economical public transportation. Commuter rail linked the population to nearby communities and shared streets integrated well with the various forms of private transportation that existed at the time. By 1940, Somerville's population had stabilized at roughly 100,000 residents, but behind the scenes, large-scale social and economic changes were occurring that would ultimately steer investment away from cities for multiple generations. Federal policy began to actively discourage investment in urban places, including the Federal Highway Aid Act (FHAA) and the Federal Housing Administration (FHA) mortgage program that discouraged urban home buying. Private investment followed government incentives, and families and businesses migrated to the suburbs.

In Somerville, the effects were dramatic. Streetcar lines that had crisscrossed the city since 1890 were systematically ripped out and one by one, and commuter rail service was discontinued at the City's eight railway stations. In 1950, McGrath Highway divided East Somerville and Brickbottom from Winter Hill and Union Square and plans for two highways, Interstate 93 and the proposed but later cancelled Interstate 695 (Inner Belt Expressway), were developed. Neighborhoods suddenly became isolated from the larger urban fabric and Somerville's culture of walking gave way to an emerging automobile culture.

However, a 1945 state-level commission on mass transit recommended that Green Line trolley service be extended along existing commuter rail right-of-way from Lechmere through Somerville all the way to Woburn. Core elements of this proposal were carried forward in subsequent studies

during the 1960's, '70's, and '80's. The concept was simple and consistent: public investment in rapid transit service would connect residents to jobs and services more efficiently than building new highways.

Ironically, it would take one of the largest highway projects in American history to make the Green Line Extension (GLX) project a reality. The "Big Dig" was conceptualized in the 1970's to improve traffic flow and unlock development opportunities in downtown Boston. Recognizing that the highway project would cause major air pollution impacts, and therefore environmental and health impacts, the Commonwealth committed to several mass transit investments. The legal commitment for the GLX is related to the environmental and health burdens that Interstate 93 (which carries a quarter-million cars on the average weekday) places on residents of Somerville, Medford, and Cambridge. The GLX was one commitment that residents of these communities would have more non-automobile transportation choices. However, the GLX was supposed to be completed by 2011, was pushed back to 2014, then to 2018, and now to an uncertain but forthcoming date.

In essence, the GLX is a matter of social, economic, and environmental justice. The Massachusetts Department of Transportation and the Massachusetts Bay Transit Authority have a commitment to "enhance transit services in order to improve mobility and regional access for residents in the communities of Cambridge, Somerville, and Medford. The project is required by the State Implementation Plan and fulfills a long-standing commitment of the Central Artery/Tunnel (Big Dig) project to increase public transit." In fact, the State has a commitment not only to increase public transit, but also to improve air quality by reducing automobile emissions. These reductions are required by the Massachusetts Air Pollution Control Regulations and are long overdue.

The stated goals of the GLX are to "improve corridor mobility, boost transit ridership, improve regional air quality, ensure equitable distribution of transit services, support smart growth and sustainable development." A key word is equitable; its inclusion is an acknowledgment of the burden placed on certain communities.

PROVIDING EQUITABLE SERVICE

Somerville is one of the most densely populated municipalities in the country with a majority, nearly 67%, of the City characterized as an environmental justice area. Environmental justice (EJ), a term defined by the Environmental Protection Agency, is the "fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." EJ areas are high minority, non-English speaking, and/or low-income populations. EJ policies require that transportation benefits and burdens be shared fairly, with special protection extended to neighborhoods like Union Square.

IMPROVING AIR QUALITY

The Green Line Extension is the "largest outstanding air quality related legal obligation required of the Commonwealth in conjunction with the Central Artery/ Tunnel project." The impacts on public health from the project are notable. According to the Environmental Protection Agency, the level of air pollution is high and cars and trucks are the main source of ozone precursor emissions. The Massachusetts Department of Public Health concludes, the rates of cancer, asthma, and obstructive pulmonary disease related deaths "exceed anticipated rates" in Somerville and the surrounding region. Alarmingly, "Somerville has the greatest excess lung cancer and heart attack deaths per square mile of of any Mass. municipality."

Furthermore, the community is wildly underserved by transit and plagued by traffic. The bus service has poor service times due to considerable traffic congestion. At present, 26% of households in the study area do not own a vehicle, making them transit dependent. While the MBTA commuter rail lines pass through the Green Line project corridor, all stops have been removed. Some of the top crash location sites are in the plan area and limited access disproportionately impacts the disabled population.

Travel constraints are not a mere inconvenience; they limit

access to employment. Where there is the need to make multiple transit connections during off-peak bus service hours, job options are constrained. At a community meeting during the planning process, a local resident shared that she turned down a job opportunity due to long commute times on public transportation to the Back Bay, an employment center that is only 3.5 miles away in Boston.

SMART GROWTH

Economic growth in Somerville hinges on the relationship between transit and development. The State previously recognized the opportunity to facilitate regional access to institutions and job growth centers and concluded that better transit means more jobs, stronger businesses. In addition, faster commutes. Somerville is determined, as stated in SomerVision, to end the disparity between available jobs and the workforce population. The city will add 30,000 jobs by 2030 and we've already seen success. Partners Healthcare will add over 4,500 jobs in Assembly Square, but it took the construction of the Orange Line train station to make it a reality. The GLX is essential to further job growth in Union Square, including the over 15,000 new employment opportunities from new development called for by this plan. The expansion of the Green Line will bring businesses to the city, bringing tax dollars that will improve public services and providing job opportunities for residents.

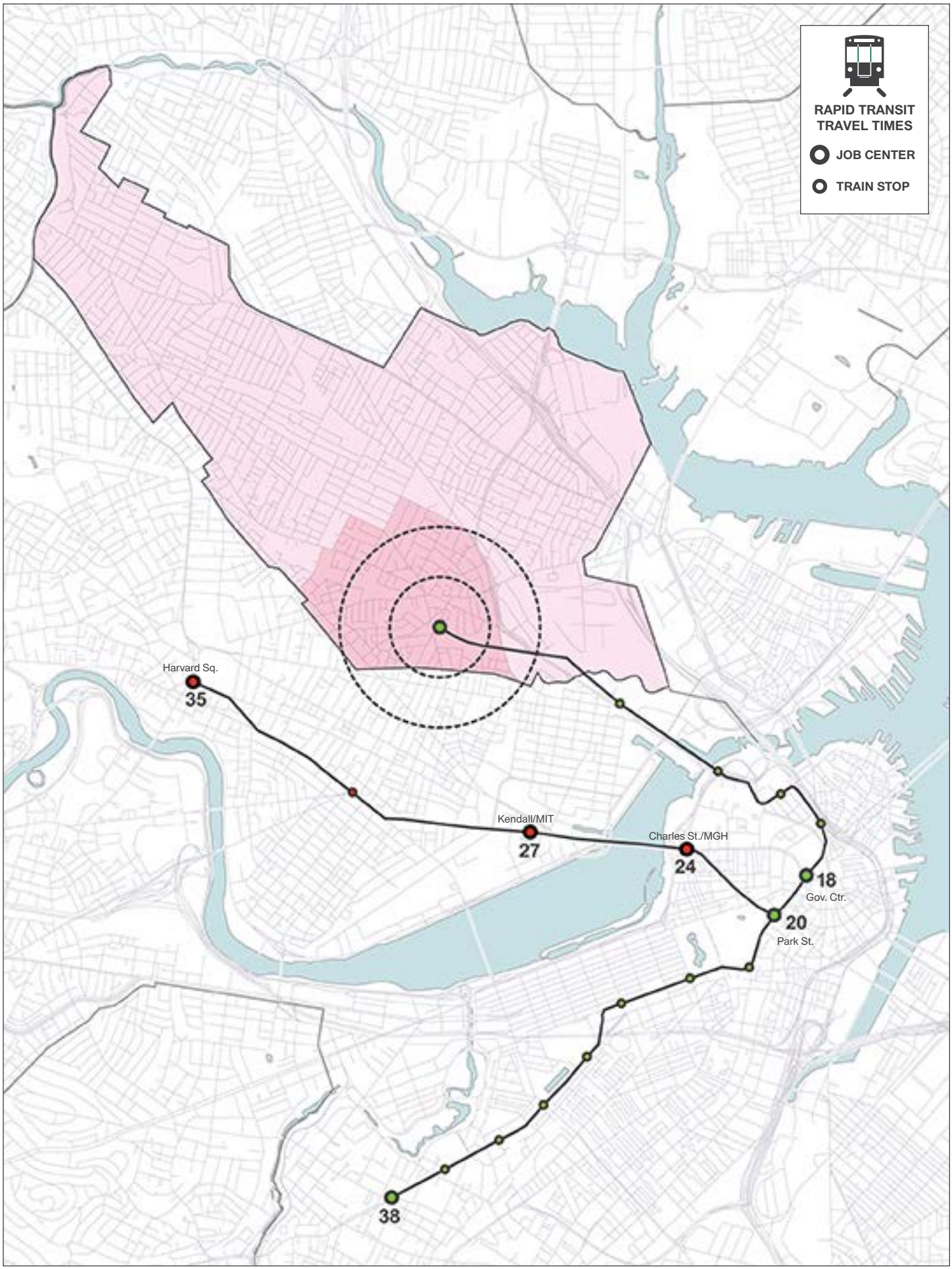
SUSTAINABLE DEVELOPMENT

The Green Line Extension will also encourage redevelopment of industrial areas and development of infill parcels into a mix of commercial and residential uses. This will increase property tax revenues in Somerville and reduce our fiscal dependence on state aid and residential taxes and fees. For the state, income and sales tax will be generated. Union Square is ready for investment spurred by the Green Line Extension and this plan illustrates the potential for almost seven million square feet of development.

Most importantly, the GLX will reduce daily vehicles miles traveled by 25,728, which will improve air quality and reduce impacts on public health. Travel times are projected to improve by 13-17 minutes from Lechmere to Union Square, dramatically changing the conditions for commuters, on the roadways, and for the bus system. Employment opportunities will broaden and new job centers will open in Somerville. If not employed locally, our residents will have the ability to say yes to an employment offer in the Back Bay thanks to the new one-seat ride on the Green Line.

The arrival of the GLX will catalyze a significant shift in how people move through Union Square, Somerville, and the region. This shift in mobility will usher in a cleaner, safer, and more prosperous area. Somerville residents are determined to see this through and see the major infrastructure investment as an opportunity to steer change in a way that will have the greatest positive impact on the people of Somerville, Medford, and Cambridge.

FACING: Anticipated travel times from Union Square Green Line Extension station.
BELOW: A crowd gathers at the Armory to review the progress on the value engineering exercise to get the Green Line Extension back on track


RAPID TRANSIT TRAVEL TIMES
JOB CENTER
TRAIN STOP
Harvard Sq.
35
Kendall/MIT
27
Charles St./MGH
24
18
Gov. Ctr.
20
Park St.
38


UNION
SQUARE
HINGTON ST
KINGMAN RD
WEBSTER AVE
EVER
OMMUTER

COMMUNITY DRIVEN PLANNING

TABLE OF CONTENTS

The Future Starts with SomerVision

Moving from City-Wide to Neighborhood Planning

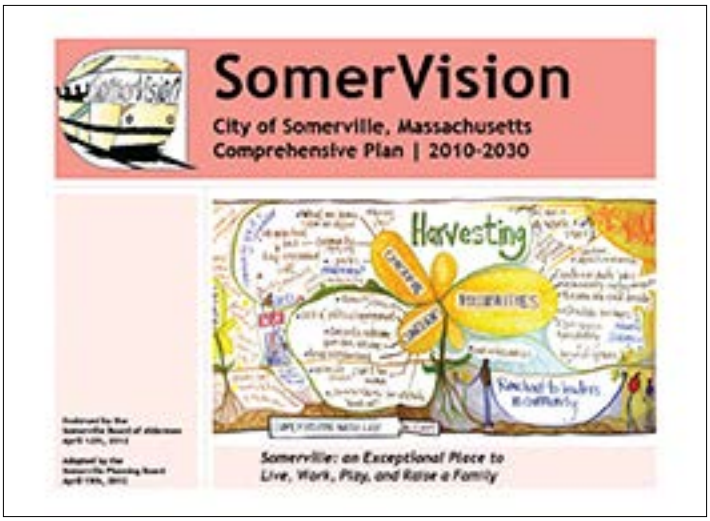
Planning for communities is like retirement planning for individuals: if you don't set goals for where you want to be, it is almost certain you won't reach your goal for the future. Like individual families, communities have unique characteristics and individual needs. In both cases, desired outcomes should be identified after careful thought is given to a range of options so that a coordinated series of actions can be carried out to achieve the determined goals.

SOMERVISION

In 2012, the City of Somerville adopted its first city-wide comprehensive master plan. Entitled SomerVision, this plan was developed to build consensus around strategies to preserve Somerville's identity as an accessible, mixed-income, multi-cultural city; while at the same time outlining an actionable policy agenda to invite and leverage public and private investment in transit-oriented development. The Mayor's Office of Strategic Planning & Community Development coordinated the four-year project with a 60-member Steering Committee comprised of residents, business owners, nonprofit agencies, and elected officials. The City generated trust and buy-in among residents and community partners through development of the plan.

SomerVision is based on our shared values as a community and establishes our commitment to:

- Celebrate the ***diversity*** of our people, cultures, housing, and economy.
- Foster the character of residents, neighborhoods, hills, and squares, and the strength of our ***community*** spirit as expressed in our history, our cultural and social life, and our deep sense of civic pride.
- Invest in the growth of a resilient ***economy*** that is centered around transit, generates a wide variety of job opportunities, creates an active daytime population, supports independent local businesses, and secures fiscal self-sufficiency.
- Promote a dynamic urban streetscape that embraces public transportation, reduces dependence on the automobile, and that is ***accessible***, inviting, and safe for all pedestrians, bicyclists, and transit users.
- Build a ***sustainable*** future through strong environmental leadership, balanced transportation modes, engaging recreational and community spaces, exceptional schools and educational opportunities, improved community health, varied and affordable housing options, and effective stewardship of our natural resources.
- Commit to ***innovation*** and affirm our responsibility to current and future generations in all of endeavors: business, technology, education, arts, and government.



Somerville's comprehensive plan creates clear expectations regarding neighborhood character and neighborhood change through The SomerVision Map (shown at right), which establishes a plan for growth in certain areas of the city and conservation of existing neighborhoods in others. The map illustrates a shared understanding that the City and its partners in the public, private, and nonprofit sectors will work to "conserve Somerville's great residential neighborhoods, enhance our funky squares and commercial corridors, and transform opportunity areas on the eastern and southern edges of Somerville."

The SomerVision Map is closely tied to the SomerVision Numbers, a series of aspirational targets for job creation, housing development, and open space improvement. The SomerVision Steering Committee advocated to include these aspirational yet achievable performance measures so that progress can be tracked over time.

The SomerVision Numbers

- 30,000 New Jobs
- 125 Acres of New Public Space
- 6,000 New Dwelling units
- 1,200 New Affordable Units
- 50% Trips by Non-Automobile

SomerVision sets out a course of action that will help make Somerville an even more exceptional place to live, work, play, and raise a family and provides us all with a guide for future growth and development in the City. To implement SomerVision, we must do further planning that translates city-wide goals, policies, and objectives down to every neighborhood, main street, and station area across the city.

NEIGHBORHOOD PLANNING

SomerVision calls for design-based area plans for each neighborhood, station area, main street and special district across the city. These plans focus at a level of detail that is not possible in a city-wide plan. They also help inform the city-wide zoning overhaul.

Somerville's neighborhood planning efforts are unique in the way they engage the community. They are built upon a collaborative process in which community participants, city staff, and consultants work together to identify and prioritize policies and development strategies. In the past, planning has too often relied on a model of "decide, announce, and defend," where consultants decide about the future of a community, present it in a meeting to the public and seek to defend their position. The Somerville by Design process flips traditional planning on its head, with a focus on "outreach, dialogue, decide, and implement." The process involves interactive meetings and quick feedback loops; ideas and plans are constantly refined to reflect community input.

To date the Mayor's Office of Strategic Planning and Community Development has published plans for the Lowell Street Station Area and Gilman Square, both along the future Green Line Extension corridor. The Inner Belt and Brickbottom plan is in the draft stages. Planning efforts for Winter Hill, East Somerville, and Davis Square remain in progress.

What is a Neighborhood Plan?

SomerVision's Ground Game

The idea to carry out planning at a smaller scale than an entire city or town began in the late 1900's. This type of focused planning is typically done at the neighborhood level, regardless of its many names - local area planning, specific planning, etc. Although neighborhood boundaries can be hard to define, they are well-recognized features of most communities and understood as subareas of a town or city with physical or social characteristics that distinguish one from another.

A neighborhood plan document is the product of the neighborhood planning process. In Somerville, neighborhood plans are adopted by the Planning Board as an amendment and implementation appendix to the SomerVision Comprehensive Plan of the City of Somerville per Chapter 41, Section 81D of Massachusetts General Law. Adoption as part of the Comprehensive Plan means that the vision, goals, and objectives of a neighborhood plan are part of official City policy. Although neighborhood plans are not enforceable like a zoning ordinance, they provide guidance for decision makers and elected officials concerning policy and program proposals that impact the neighborhood.

Coming together as a community to think through challenges and solutions is just as important as publishing a document to record those efforts. The act of neighborhood planning allows members of the community to be proactive, contributing players in shaping the forces of change, instead of merely reacting to change. A plan that expresses a common vision for the future and lays out clear objectives will allow community members and decision-makers to provide a timely and well-supported response to proposed projects or programs.

The real value of neighborhood planning lies in establishing relationships, learning about your neighborhood, and understanding local government. Although a planning document is important, the new relationships established during the process, knowledge gained, and activism instigated by the project are pivotal to ensuring that the plan is implemented. An active group of stakeholders can transfer the knowledge gained from the planning process as members of the community come and go over time. This helps advance the goals of the plan. For this reason, neighborhood plans must also change and evolve, while providing strategic programs of action and support to neighborhood residents, property owners, and their supporters.

THE ROLE OF A NEIGHBORHOOD PLAN

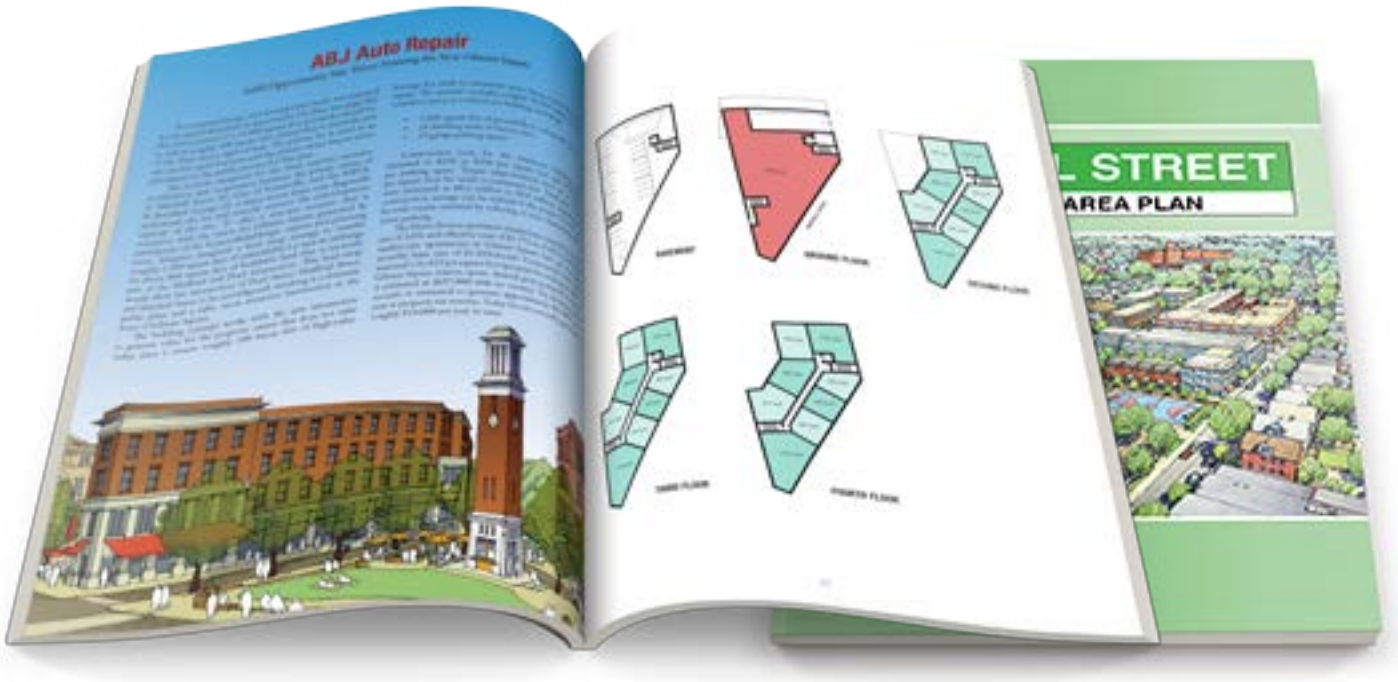
Broadly, a neighborhood plan takes consideration of the long-term future of a neighborhood to identify challenges and opportunities, establish goals and objectives, and put in place a clear path for implementation. Neighborhood plans are an important implementation tool. They rely on public engagement and extensive participation by residents, businesses, and other stakeholders to help translate the city-wide goals of SomerVision to the neighborhood level. To successfully seize new opportunities and address future challenges, the grass-roots energy and shared wisdom of the community members is necessary to successfully achieve the goals and values of SomerVision.

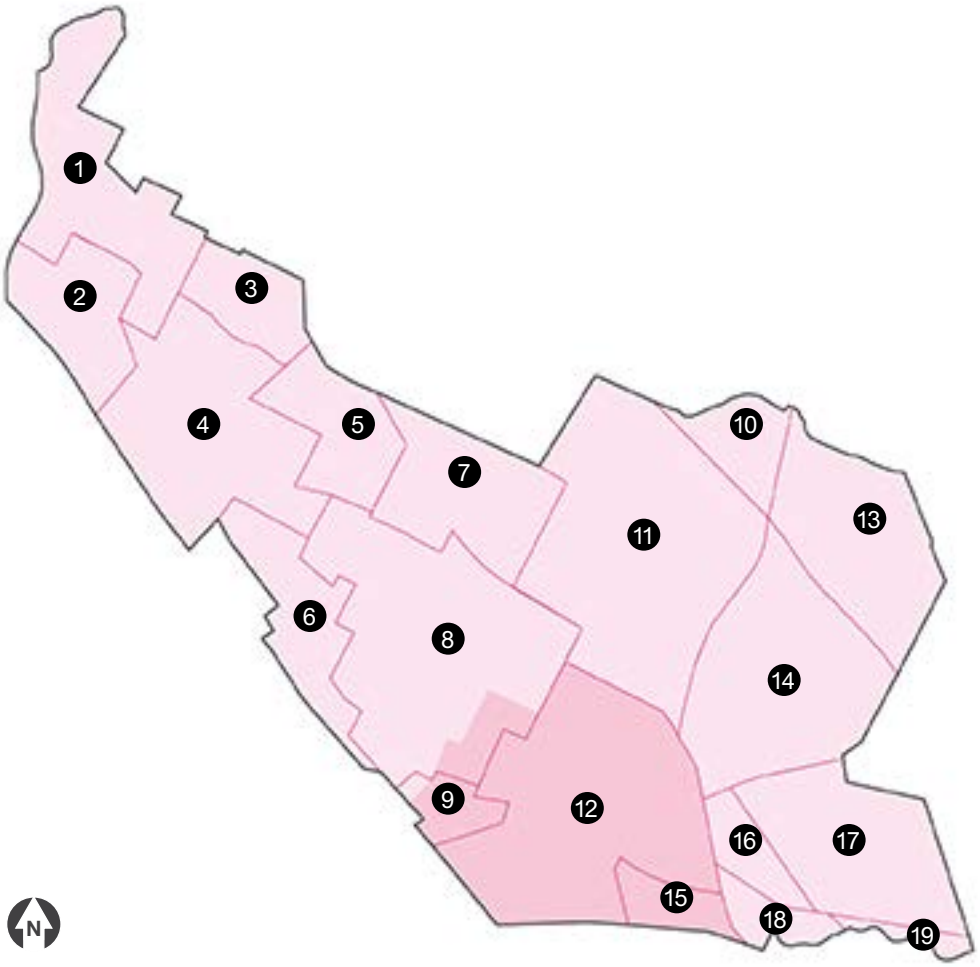
Somerville's neighborhood plans are action-oriented and values-based, with a time frame of anywhere from 10 to 30 years. Their primary purpose is to balance city-wide planning objectives with a community driven process that identifies neighborhood priorities and issues and reconciles differences between the two — where they exist. Neighborhood plans can also educate and inform the public, incorporate values into the decision-making process, improve the quality of decision making, effectively allocate government resources, and strengthen the community's social capital and ability to face challenges together.

DEFINING OUR NEIGHBORHOODS

Neighborhood boundaries are notoriously hard to define. In fact, no one ever seems to agree on where they should be. Historically, most of Somerville's neighborhoods formed as areas of housing associated with a node of commercial activity typically referred to as a 'Square'. Some neighborhoods owe their identity to a close relationship with the hilly topography, while others have an independence brought about by hard boundaries created when state highways were built through the eastern side of Somerville. Whatever the boundaries may be, the best way to identify the neighborhoods of Somerville is to ask community members.

In 2015, the website Bostonography.com helped everyday people map the neighborhoods of Boston, Cambridge, and Somerville online by letting them draw their own boundaries and name each neighborhood themselves. The results of this 'crowdsourced' mapping effort were then aggregated to identify the many neighborhoods that community members recognize today. Using these publicly generated neighborhoods, planners from the Mayor's Office of Strategic Planning and Community Development adjusted the boundaries to closely match census block groups used by the United States Census Bureau. The result is a close representation of the neighborhoods already recognized by the residents that can also be used to inform neighborhood planning efforts carried out across the city.





SOMERVILLE'S NEIGHBORHOODS

1. Hillside
2. Teele Square
3. Tufts
4. Davis Square
5. Powderhouse
6. Porter Square
7. Magoun Square
8. Spring Hill
9. Duck Village
10. Ten Hills
11. Winter Hill
12. Union Square
13. Assembly Square
14. East Somerville
15. Boynton Yards
16. Brickbottom
17. Inner Belt
18. Grand Junction
19. North Point

Leading Up to Today

Laying the Groundwork for Development

Established in the 1960's, the state's urban renewal law was adopted to develop areas that needed extra assistance to address substandard conditions. While early plans under the state law were often used to demolish and clear large blighted areas, more recent applications of the law have been focused on targeted development of particularly challenging or blighted lots.

The first Urban Renewal Plan for Union Square was published in 1974. Implementation of the plan established the current street network, created the parking lot and Union Square Plaza, and relocated the police headquarters and fire station into a former MBTA bus barn. The Urban Renewal Plan was designed to reverse neighborhood decline in the square through a public and private investment program.

In the early 1980's the city approved an urban renewal plan for Boynton Yards. The principal accomplishments were the demolition of run-down buildings, remediation of industrial wastes, construction of "light industry" buildings, and construction of South Street to support truck traffic. Both plans reflected their time; Somerville was trying to compete with suburban communities.

Since 2000, Union Square has been an area of immense study with over 20 studies conducted. These studies include SomerVision and a major rezoning that created the Commercial Corridor and Transit Oriented Districts. Some aspects of these efforts are being implemented. From a 2005 study, Prospect Street and Webster Avenue will be changed to two-way traffic in the summer of 2016. OSPCD is applying for funding to tackle the infrastructure problems identified in a 2014 plan. Some new mixed-use buildings have been permitted and are in construction in the Commercial Corridor Districts.

Despite efforts, areas in Union Square have not redeveloped. Even the 2009 zoning did not incentivize scrap metal yards, industrial uses, and automotive service garages to redevelop to better match the walkable neighborhood around it. Development in areas like this often only change when land is assembled to allow for new streets, alleys, and blocks that often cross existing property lines.

THE UNION SQUARE REVITALIZATION PLAN

In 2012, the Somerville Redevelopment Authority (SRA), Somerville Board of Aldermen, and the Massachusetts Department of Housing and Community Development approved a Revitalization Plan for Union Square. This plan provided the City with the tools needed to coordinate redevelopment of parcels within walking distance to the future Union Square Station of the MBTA's Green Line in a manner that fully captures the value that new transit service can bring to the neighborhood. It also permitted the City and MBTA to create an agreement where the City secured the land for the station, while also ensuring that the station would open surrounded by transit oriented development instead of a scrap metal yard.

The Union Square Revitalization Plan identifies seven development parcels (the "D Parcels") and initiated a process to select a development partner (a "Master Developer") that could guide redevelopment of those parcels. A Master Developer is a private real estate entity with the experience and capability to engage in public-private partnerships, work with existing property owners to build feasible infill projects, finance and develop their own anchor projects, and recruit commercial tenants through targeted marketing.

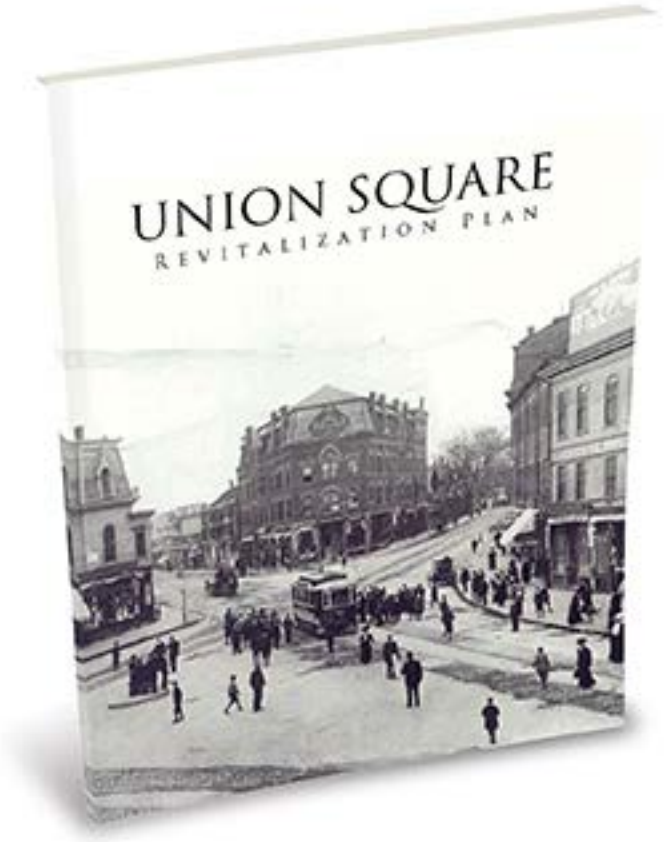
Union Square Station Associates (US2) was selected as the Master Developer. Following their selection, US2 immediately partnered with the City to meet the community's desire to create this Neighborhood Plan to guide redevelopment in Union Square. Following formal adoption of the Neighborhood Plan, US2 will begin the coordinated redevelopment of the D Parcels consistent with the community's vision for the neighborhood.

What is a Redevelopment Authority?

The Somerville Redevelopment Authority (SRA) is an independent authority created under Massachusetts General Law (MGL c121B). Their powers and duties include urban renewal activities in accordance with an approved urban renewal plan. An urban renewal plan allows the SRA to acquire properties by purchase or eminent domain for the purposes of the plan, and to seek a master developer to implement the goals of the plan. All actions of the SRA are subject to review and approval by the Massachusetts Department of Housing and Community Development (DHCD). Members of the SRA are appointed by the Mayor and confirmed by the Board of Aldermen.

What is the CAC?

The Civic Advisory Committee was first assembled to assist the SRA in selection of a Master Developer. Members include residents, business owners, and local advocate. After the Master Developer selection, the CAC transitioned to a sounding board for Planning Staff and US2 while providing feedback and input.



SELECTING A MASTER DEVELOPER

Selection of a Master Developer began in January 2013 through the issuance of a Request for Qualification. There were nine responses to the RFQ. With help from the CAC, the SRA shortened the list to four teams. In the summer/fall of 2014, City staff, CAC members, SRA members, and Aldermen toured featured projects of the remaining four development teams. In June of 2014, after an extensive public outreach and interview process, the Somerville Redevelopment Authority (SRA) selected Union Square Station Associates (US2) as the designated Master Developer for the seven D Parcels identified in the 2012 Union Square Revitalization Plan.

BELOW: The D Parcels named in the 2012 Union Square Revitalization Plan

Union Square Station Associates (US2) is honored to have been selected the master development partner for the revitalization of Union Square. We want to thank the City of Somerville and the entire community for the robust process that led to the development of this plan and vision for the future of the neighborhood.

US2 is a development team built specifically for Union Square's redevelopment. The team consists of local and national best-in-class architects, urban designers, transit experts, creative thinkers, economic development professionals, engineers and more. We are in the business of creating and preserving great places. Our motto is 'people, then place, then buildings' because that's the US2 way.

US2 was formed by two Chicago-based real estate developers, Jim Loewenberg and Richard Stein who are real estate industry visionaries, Urban Land Institute lifetime achievement award winners, and friends and colleagues for over 40 years. They have collectively planned, financed and implemented over 100 real estate projects, including over seven million square feet of commercial buildings.

We see ourselves as not just developers, but as strategic partners, community-builders and place-makers. In this role, we engage community members, understand their needs and goals, and collaborate to identify solutions. Working in partnership we will transform Union Square into an employment center, build new homes for a wide range of residents, add green and public open space to enhance neighborhood livability – all while building upon Union Square's unique character.

Our public-private redevelopment projects have consistently delivered on the goals of their stakeholders. These include the Glenview Naval Air Station redevelopment, a $1 billion Base Realignment and Closure (BRAC) project which created almost 6,000 jobs; University Village at University of Illinois Chicago which transformed the edge of a campus and created 196 affordable homes; and the Lakeshore East Redevelopment, which transformed a vacated rail yard into a dynamic urban neighborhood and created 6 new acres of public open space.

Places remembered best, are not defined by buildings, like Union Square they are defined by the people who call them home. It's the firefighter who coaches Little League; the entrepreneur whose idea expands the local economy; and the former sous chef who starts a new restaurant that add to the soul of a neighborhood. These are the people to whom US2 is committed.

In parallel with the planning process that created this plan, US2 has already been implementing an economic development strategy to make Union Square the employment center that SomerVision imagines, where people from all walks of life can live, work, play and raise a family. We are working to strengthen Union Square's business district and empower local businesses and emerging entrepreneurs to take advantage of opportunities for growth.

We look forward to collaborating with you to implement this plan. By bringing this plan to life, we can deliver on the goals of SomerVision and create a revitalized Union Square that we can all be proud of.

Sincerely,

Greg Karczewski
President, US2

ABOVE: US2 team members gather for a team event at Aeronaut Brewing Company on Tyler Street.

BELOW: The ribbon cutting at Workbar in Union Square. It's both a coworking location and home to the US2 offices.

Translating SomerVision to Union Square

Union Square and Boynton Yard's Contribution to City-Wide Goals

SomerVision provides us with a policy framework that captures our thinking about diversity, community, economy, accessibility, sustainability, and innovation to guide future decisions made in neighborhood planning and capital projects. During the development of SomerVision, a series of public workshops helped the community articulate its shared values (see page 34). All of these values are important, but three are of particular value in planning the future of Union Square and Boynton Yards.

The first is to foster the unique character of the neighborhood to ensure that Union Square continues to be itself as changes occur over time. This begins with placing a high value on the people, history, culture, and way of life. The second is to invest in and grow a resilient and diverse economy that leverages all the benefits that new access to transit will provide. To achieve fiscal self-sufficiency Somerville needs to attract and retain businesses that can start here, grow here, and stay here while also investing in the talents, skills, and education of residents to increase access to employment opportunities. Third, is to fully embrace public transportation so that the redesign of the public realm is safe and inviting for all means of travel while at the same time improving environmental quality and economic stability by reducing dependance on automobiles.

To achieve all of these aspirations, SomerVision calls for design-based neighborhood plans to guide future development in a way that improves our quality of life. Special priority is given to neighborhoods with existing or future transit because they serve as important economic engines for the city, focal points of community identity, and areas that must adapt and change over time.

PLANNING FOR TRANSIT-ORIENTED DEVELOPMENT

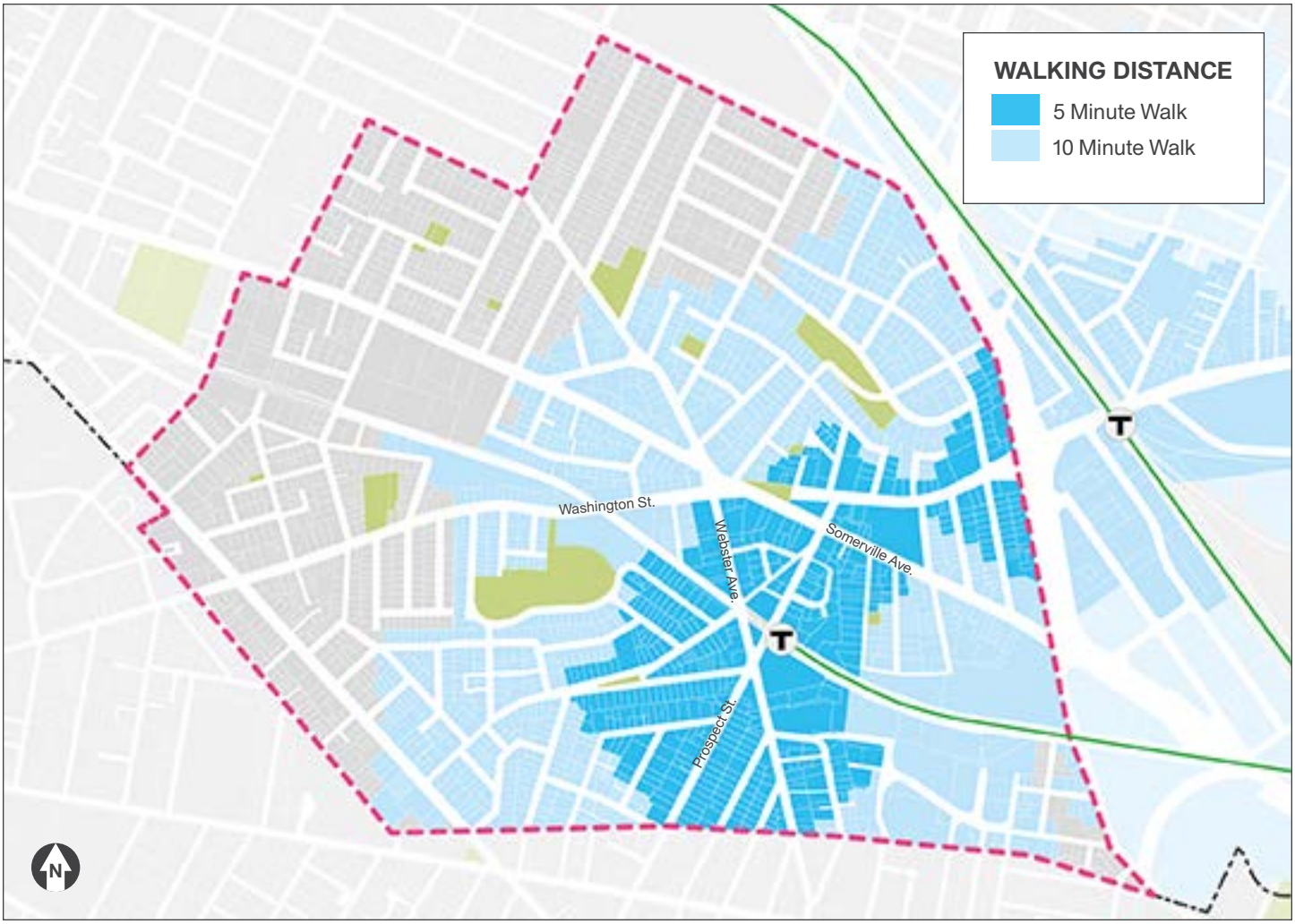
The daily commute is a fact of life for the majority of Somerville residents. The city's vibrant squares capture most trips necessary to meet daily and weekly needs, but with only 20,000 jobs and 45,000 workers, most people travel outside of Somerville to go to work and many of those people drive. For some, this work trip is short and the 'down time' can even be rewarding, but for others the commute is long and causes financial, emotional, and physical stress. Private automobile ownership provides freedom and flexibility, but also includes significant societal costs in terms of environmental impact, infrastructure costs, accidents and injuries, and the financial burden brought on by parking, gasoline, and annual maintenance.

A number of SomerVision's top-level goals focus directly on transit-oriented development (TOD). This term refers to new development that uses specific planning and design techniques to support investments made in public transportation infrastructure and produce neighborhoods that are compact, mixed-use, highly walkable, and equitable for people of all ages and incomes. Although every neighborhood should have these traits, TOD planning leverages public transit as an asset for community development.

Public transit and transit-oriented development will play a defining role in achieving many of SomerVision's goals. It reduces congestion by giving some people an alternative to driving. It reduces the emission of pollutants and greenhouse gases that would have otherwise been generated by transit riders if they had driven cars instead. It decreases the amount of money that riders must spend on gasoline and other costs of operating private vehicles, and may even allow them to reduce the number of vehicles they need to own. It frees up time by allowing riders to work, read, sleep, or otherwise relax on a train or bus instead of having to pay attention to the road. It gives employers located near transit hubs greater access to a more dispersed workforce. In general, it creates efficiencies and reduces the per-capita impact of the transportation system by allowing multiple travelers to share the ride.

Public transit and transit-oriented development will play a defining role in achieving many of SomerVision's goals

Extension of the Green Line to Union Square will facilitate beneficial transit-oriented development in two different, but related, ways. First, new transit service will provide existing residents with a more direct link into the regional public transportation system with less transfers while increasing access to thousands of employment opportunities and reducing costs associated with traveling to work. Secondly, Somerville is well-recognized as the densest municipality in New England, and Union Square's share of that population — along with its vibrant local culture, close proximity to universities, and a number of ideal and available development sites — positions the neighborhood to attract employers looking to tap into the talent pool of existing residents.



DEFINING WALKING DISTANCE

In neighborhoods with a well-designed and walkable street network, the proximity of origins and destinations to a transit station has a direct association with transit ridership. Studies from around the country routinely find that the closer housing and jobs are to transit, the higher probability residents and employees will use the service. People are generally willing to walk further to higher capacity, more frequent service and will typically walk further to rail than they will to the bus.

As a 'rule of thumb,' researchers study walking distances to transit in intervals such as one-half mile, one-quarter mile, or one-eighth mile. In a 2013 study of 1,450 transit stations across the United States, researchers found that ¼ mile is the distance people are willing to walk when traveling to or from work and ½ mile is the distance people are willing to walk when traveling to or from home. In fact, transit use drops significantly for households located beyond a half mile from the nearest transit stop. Climate and topography are typically thought to influence walking in general, but multiple studies have found that local topography has little to no effect on walking to transit. Only the chance of rain influences the choice to walk or not to public transportation.

The Last Quarter Mile

The use of public transportation when commuting to work is critically dependent on a riders' ability to reach their final destination once they arrive and find themselves on foot. Locating destinations close to transit is even more essential than locating points of origin near transit. Although it is well established that households located within walking distance to a transit station are five to six times more likely to commute by transit than those living elsewhere, studies have shown commuters are willing to walk further distances to their homes than they are to their place of employment. This is why locating commercial uses within a quarter mile of a transit station is so important - so that commuters can easily walk that last short distance on foot. Trips to work represent a large share of the total travel during the Monday-Friday work week, and the decision employees make about how to commute to work will have a significant impact on the livability and sustainability of Union Square. Locating jobs close to transit will encourage employees to leave their cars at home, reducing traffic and improving air quality where the new jobs are created.

DECREASING HOW MUCH WE DRIVE

Living or working within a close walking distance to transit has been found to corollate with substantially higher rates of transit use. However, it is necessary to promote the physical conditions and supporting policies that will to discourage residents and employees from driving. Increased development intensity in close proximity to transit stations can unlock immense benefits (see page 42). However, when development is simply transit adjacent, with significant parking, or built without supporting policies that induce transit-oriented behavior, it can also invite automobile traffic and congestion. This will undo all of the benefit transit can provide – especially at the local level.

In 2006, a study by Dr. Robert Cervero of UC Berkeley found that office workers are most likely to use transit if frequent feeder bus or shuttle service is available at one or both ends of the trip, if employers help cover the cost of taking transit, and if parking supply at the workplace is restricted. Providing all three of these requires coordination between off-street parking requirements in zoning, workplace transportation demand management programs, and complimentary private shuttle services.

More recently, two studies out of New York City and northern New Jersey, some of the most transit-oriented urban areas in the United States, uncovered a stunning relationship between automobile ownership and use and the availability of off-street parking. In a 2012 study of neighborhoods in the Bronx, Queens, and Brooklyn boroughs of New York City, Dr. Rachel Weinberger, a Principal & Director of Research and Policy at Nelson\Nygaard Consulting Associates, found a clear relationship between the availability of parking at home and higher rates of driving to jobs in the core of Manhattan, even when both the home and workplace were well served by transit. When off-street parking is relatively scarce, competition for on-street parking increases the frustration of finding a parking spot and the effort needed to walk from the parking spot to home or other destinations. When a guaranteed, off-street parking space is available, the ownership and use of an automobile becomes a much more attractive option - regardless of the availability of transit, highway access, or demographics. Therefore, providing more parking induces more driving trips and more local congestion.

In a 2013 study of households living within two miles of New Jersey transit stations, Dr. Daniel Chatman of UC Berkeley confirmed the results from New York in another location when he found that availability of off-street parking was actually the single most important variable in determining automobile ownership and commuting to work, regardless of accessibility to a rail transit station. When looking only at households within walking distance to a transit station, households with both low on- and off-street parking commute by automobile 60% less than households with easy access to parking. These results confirm other studies that warn minimum parking requirements likely induce driving by oversupplying parking at home. Chatman suggests allowing developers to provide less off-street parking, while also pricing, managing, and permitting on-street parking in order to mitigate spillover effects.

DIFFERENT STATIONS, DIFFERENT FUNCTIONS

The Center for Transit-Oriented Development (CTOD), a non-profit funded by the U.S. Government to promote best practices in transit-oriented development, identifies at least seven types of transit-oriented station areas. These TOD place types were created to help simplify the complex decisions that surround planning for TOD projects and station areas at different scales and in different places. The system provides a common language to compare station areas and helps governments establish development targets to ensure that investments made in transit are as efficient as possible by focusing growth around transit nodes.

Not all TOD is necessarily equal. Some transit station areas may be well suited to a particular type of development but not as well suited to others. For instance, some station areas

might lend themselves to hosting large concentrations of employment; others may be more appropriate for primarily a mix of high-density housing and retail; still others may sit at strategic locations on the highway network and thus be well-positioned to intercept car commuters by functioning as park-&-ride stations. Because of this, promoting TOD is not necessarily a one-size fits-all approach; the unique characteristics of each individual station area inform decisions about the type of appropriate development.

Within the scope of COTD's station area types, the Union Square plan area today can be classified as what CTOD calls a local *Transit Town Center*. This station area type functions as a local serving center of economic and community activity. Like other locally serving centers, Union Square's existing transit service is primarily made up of bus lines that feed riders into the regional rail system at Sullivan Station, Lechmere Station, and Kendall Square or, to a lesser degree, high-frequency regional bus and limited stop bus rapid transit (BRT) that cross through Brookline and Boston on their way to Dudley and Ruggles Stations. Also like other local centers, Union Square has an existing mix of both multi-unit and single-unit housing, as well as retail, smaller to medium-scale employment, and civic uses.

With the arrival of the Green Line and both public and private investments in redevelopment, the eastern portions of Union Square and Boynton Yards could evolve into an *Urban Center* focused primarily on employment. CTOD defines Urban Centers as a station area with a dense mix of employment, residential, retail, and entertainment uses and destinations that attract residents from surrounding neighborhoods. Once Union Square station is built and light rail service begins, Union Square and Boynton Yards will include a full suite of transit options, like other Urban Centers around the country, and be positioned to attract employers seeking to benefit from locating their business within this type of station area.

PLANNING AN URBAN EMPLOYMENT CENTER

Union Square and Boynton Yards have an opportunity to develop into a employment-focused urban center with a mix of diverse and high-quality jobs. Union Square and Boynton Yards, along with Assembly Square, are well positioned to serve as the primary economic engines of Somerville. Together, they can help provide the commercial tax base that will reduce Somerville's dependence on state aid and residential taxes and fees.

Somerville's financial self-determination is perhaps the most difficult of the SomerVision goals to nail down as a quantitative goal because property valuations are dynamic - changing every year. However, we are already beginning to see the benefits that new businesses can bring to rebalancing the City's finances. Commercial development at Assembly Row has already started to reduce residential tax increases, although commercial development across the city os not yet creating tax decreases (see *Reducing the Residential Tax Burden* on page 46).

Commercial development at Assembly Row has already started to reduce residential tax increases.

CTOD recommends using the following development criteria when planning for an employment-focused urban center station area. Following these guidelines will help to ensure that Union Square and Boynton Yards evolve according to expectations.

Urban Employment Center Station Area	
Total Square Footage	7 to 10 million sf
Station Area Total Employment	15,000 to 30,000
Station Area Total Housing	5,000 to 10,000
Use Mix Ratio (Com/Res)	60%/40%
Commercial Floor Area Ratio (min)	2.0
Jobs to Housing Ratio (min)	6 to 1
Residential Density (max)	50 DU/Ac

- **Total Square Footage** is a range of built square footage that helps to determine the ultimate scale and intensity of development in the station area.
- **Station Area Total Employment** is a range of employment that identifies an appropriately scaled concentration of jobs in the station area and can inform the balance between various uses of floor space.
- **Station Area Total Housing** is a range of dwelling units that identifies the appropriate amount of housing in the station area and can inform the mix and variety of housing types permitted for new development.
- **Use Mix Ratio** identifies an appropriate proportion of commercial and residential floor space in the station area and can inform various policy tools to achieve the desired mix.
- **Commercial Floor Area Ratio** identifies a baseline amount of commercial floor space is produced for office, lab, retail, hotel and creative enterprises to make an urban employment center possible. However, not every site in the urban center will be appropriate for commercial buildings.

- **Jobs to Housing Ratio** maintains a proper balance between new workers and employment opportunities in the station area by requiring a minimum amount of commercial space for each residential unit built.
- **Station Area Density** identifies an upper limit of housing units desirable for the entire station area. Although too much new residential development can result in an urban center without a strong concentration of commercial floor space, individual sites should respond to local market conditions when determining the use and appropriate density.

DETERMINING A BUILD OUT

SomerVision includes a set of aspirational targets for job creation, housing development, and open space improvement, along with guidance on how people should travel and where development should occur within the city (see pag 34). The target for 30,000 new jobs is intended to create a closer balance between the number of jobs within the city and the size of Somerville's workforce. When SomerVision was first written, it was estimated that the city had 20,000 jobs and 45,000 workers. Thirty thousand new jobs would bring the total employment opportunities within the city to 50,000, which is close to a one-to-one relationship once the additional workers that the 6,000 new housing units SomerVison calls for would bring are accounted for. These numbers represent a 5 to 1 ratio of jobs to housing.

In 2009, prior to SomerVision, much of Union Square and Boynton Yards was rezoned in an effort to encourage redevelopment. This new zoning introduced a number of higher density districts for properties located within close distance to the future Union Square station of the Green Line. In 2015, the Mayor's Office of Strategic Planning and Community Development (OSPCD) hired RCLCO, a national real estate advisory firm, to help identify properties that met specific economic criteria that makes them probable for development or redevelopment. Using lots identified by RCLCO for the Union Square plan area, current zoning would permit development of an estimated 7 million square feet and up to 3,600 dwelling units in Union Square and Boynton Yards. If those dwelling units are converted to floor space and subtracted from the potential build out, this new development could result in about 11,350 new jobs. These numbers represent only a 3 to 1 ratio of jobs to housing. Although adopted in 2012, SomerVision is a twenty-year plan for the years 2010-2030. In just the first five years of SomerVision's time frame, as much as 33% of some of the development targets have already been achieved. By the end of 2016, the City expects 5,000 jobs with the opening of Partners HealthCare in Assembly Square and the expansion of Greentown Labs in the Ames business complex. Almost 900 new dwelling units and over 150 affordable units have been built. Over double that number are in the development pipeline as permitted for construction. Additionally, about

Current zoning would permit development of an estimated 7 million square feet and up to 3,600 dwelling units in Union Square and Boynton Yards

Reducing the Residential Tax Burden

Property taxes are determined by two factors. The first is the assessed value of the property itself. The second is the City's required property tax levy. Somerville's tax levy reflects the City's financial obligations set in the yearly budget.

Somerville has adopted a Property Tax Classification system, a choice each municipality in the Commonwealth may make, which permits a municipality to set one tax rate for residential property and another for commercial (including office, retail, industrial, and hotel). Doing so enables the city to earn a greater percentage of our tax liability from the commercial sector. That is, the greater our commercial value and therefore, our commercial tax contribution, the less residential tax will be required.

To demonstrate this, consider the 2016 breakdown: commercial taxpayers will pay 25.8% of the total property tax levy and residential taxpayers will pay 74.18%. Clearly, there is opportunity to raise the proportion of the total levy that the commercial sector bears.

Somerville is committed to limiting the growth of residential property taxes; valuable development can invite new business to our city and help alleviate the residential tax burden. The new development in Assembly Square, for instance, has already helped lower the tax increase on the average two-family home. Without it, the increase for the average two-family home would have been $317 but, as a result of the new commercial development, it is less than half that amount at $150.

12.8 acres of new public space has been created through the enlargement of existing and creation of new spaces like Chuckie Harris Park, Symphony Park, and the extension of the Community Path to Lowell Street, with an additional 19.5 acres in the pipeline. These achievements produce a new set of targets adjusted from the original SomerVision numbers.

SomerVision Targets Still Needed

- 25,000 New Jobs
- 93 Acres of New Public Space
- 4,000 New Dwelling Units
- 900 New Affordable Units
- 50% Trips by Non-Automobile

The first takeaway from these new numbers is that after 5 years of development a 6 to 1 ratio is needed to balance the number of jobs in the city with the size of Somerville's workforce. If the build out possible under existing zoning (7 million square feet of development) is adjusted to produce a 6 to 1 ratio of jobs to housing, the results is 15,350 jobs (about 4.5 million square feet of commercial) and 2,500 new housing units. This would accomplish 42% of SomerVision's housing goal and 52% of its employment goal. Additionally, this scale of commercial development could produce over four times the benefit that commercial space built so far in Assembly Square has had on the tax base, further improving the fiscal health of the city.

With only about four square miles of land area in the city, achieving SomerVision's goal for new public space is much more challenging than for development targets that can go vertical (jobs and housing). SomerVision estimated that 365 acres of land existed in the Transformational Areas shown on the SomerVision Map and that Union Square and Boynton Yards represented 16.4% of that area. Since SomerVision was adopted, the City has conducted more accurate measurements of these areas. As it turns out, 365 acres was an overestimate. However, the City decided to aggressively pursue SomerVision's goal for 125 acres of new public space by striving to provide 16.4% of the remaining space needed in Union Square plan area. This results in a goal of 15.25 acres of new public space for redevelopment in Union Sqaure.

Each redevelopment site in the Union Square plan area is an opportunity to build new public space. With a 15% usable open space requirement, the D Parcels would contribute about two acres of new public space as they redevelop over time. However, not every D Parcel will produce a properly sized public space. Although small spaces can still go a long

Public Space Contributions by Transformational Area

ASSEMBLY SQUARE
10-12 Acres

BOYNTON YARDS
2-3 Acres

INNER BELT
10-12 Acres

GRAND JUNCTION
2-3 Acres

MILK SQUARE*
2-3 Acres

BRICKBOTTOM
2-3 Acres

* This is the area near the existing intersection of McGrath Highway and Somerville Avenue

way, they are more successful when designed and built by the City. Additionally, larger public spaces provide better quality and meet community needs better than a dozen spaces that are each too small accommodate various needs. Redevelopment on the sites like the D Parcels will need the ability to aggregate their requirements together as necessary to built quality space.

Applying a similar zoning requirement to transformational areas would account for an additional 3.0 acres in Boynton Yards and 2.7 acres in 'Milk Square' (a placeholder name for the land area around the intersection of Somerville Avenue and McGrath Highway). This results in 7.7 acres of new public space in total from private redevelopment, leaving the City to find 7.55 acres through other means. As this example shows, achieving SomerVision's goal for 125 new acres of new public space will not be achieved through zoning requirements alone and will require an innovative approach to meet expectations.

With this challenge in hand, various opportunities were found by using existing, and typically overlooked, resources. Multiple new plazas could be created from reclaimed spaces created from redesigned intersections. Union Square Plaza and Concord Square can be expanded by repurposing underutilized space currently dedicated to automobiles. At least one site was found that the City can directly purchase for a larger park. Additionally, it was discovered that a new length of the Somerville Community Path along the Fitchburg rail line was possible if coordinated with redevelopment in Boynton Yards. In total, these public spaces could provide an additional 4.64 acres of open space, leaving us about three acres shy of our goal. Finding these last three acres will require us to remain vigilant as new and previously unrealized opportunities to create new public space arise in the Union Square plan area as it redevelops.

Based on all of the criteria provided by the Center for Transit-Oriented Development and an understanding of how Union Square can contribute to achieving SomerVison's goals, Chapters 4 and 5 provide a detailed vision for development and redevelopment in the plan area. That development is summarized below:

TOTAL BUILD OUT ESTIMATE

Square Footage	6,876,000
Office Space	3,592,000
Retail Space	546,000
Potential Jobs	15,465
Dwelling Units (max)	2,350
Use Mix Ratio (Com/Res)	61%/39%
Jobs to Housing Ratio	6.58 to 1
Public Space (acres)	12.34

BELOW: Neighborhood development assumptions used to inform the square footage estimated in this Neighborhood Plan.

How We Estimated Development

Throughout this plan there are numerous three-dimensional models and watercolor illustrations showing aerial or ground level perspectives to help readers envision what new development might look like. Behind the scenes, all of the modeling that helps produce this imagery is based on the same set of numbers that helps us plan the distribution and use of floor space.

To estimate employment density and commercial space development targets, different numbers are used for office, lab, and retail space. The introduction of open-plan office layouts has caused the amount of space needed for each office worker to decrease significantly. The new Partners HeathCare building in Assembly Square will be at 160 sf per person. The Mayor's Office of Strategic Planning and Community Development (OSPCD) chose to use 200 sf per office employee. If employers use office space more efficiently than anticipated, all the better. The U.S. Department of Health and Human Services uses 200 to 460 sf per person for planning government laboratories. OSPCD chose 440 sf to account for the additional machinery typically found in the biomedical labs common to the Boston region. Lastly, the City's economic development consultant (RCLCO) advised using an average of 500 sf per employee for retail and restaurant uses for planning purposes.

Estimating residential development density can be more complicated than commercial. Large, multi-unit buildings typically have a variety of unit sizes and bedroom counts and every site is different. OSPCD made the policy decision to plan for residential development based on a 900 sf, two-bedroom unit. This type of unit can accommodate a variety of households, including families. To estimate site density or generate build out targets, this number is adjusted to 1,125 to account for hallways, lobbies, and other common spaces in residential buildings.

COMPARABLE EMPLOYMENT CENTERS

ROSSLYN STATION AREA, ARLINGTON, VA

Commercial	**9,007,500 sq ft**
Housing	**8,000 Units**
Civic Space	**16%**
Commercial/Residential Split	**50/50**

The Rosslyn Coordinated Redevelopment District is a 65-acre area closest to the metro station with high intensity development with a mix of uses. The area is within the Rosslyn Metro Station Area of 300 acres. Rosslyn is still in the midst of transitioning for an auto-oriented to pedestrian-oriented place. Rosslyn has been taking advantage of the proximity and access to Washington D.C. provided by the Aqueduct Bridge for over half a century.

KENDALL SQUARE, CAMBRIDGE, MA

Commercial	**2,642,000 sq ft**
Housing	**1,400 Units**
Civic Space	**11%**
Commercial/Residential Split	**63/37**

The Cambridge Research Park and One Broadway sub-district of Kendall Square has been in development for more than 20 years but there is still more to offer. Housing, ground floor retail, and the open space connection to the Broad Canal are all very important and successful additions to Kendall Square. A realistic development plan for the only vacant site, previously envisioned as the Constellation Performing Arts Center, is needed.

NAVY YARD, WASHINGTON, D.C.

Commercial	**2,200,000 sq ft**
Housing	**2,800 Units**
Civic Space	**14%**
Commercial/Residential Split	**41/59**

The Yards is a vibrant, distinct, and sustainable riverfront neighborhood developed through a public-private partnership. The neighborhood is a live/work/shop community that has embraced historic resources by adaptively reusing six structures. It sits less than one mile to the US Capitol and has given back access to the waterfront with a new public park.

PEARL DISTRICT, PORTLAND, OR

Commercial	**450,000 sq ft**
Housing	**1,700 Units**
Civic Space	**17%**
Commercial/Residential Split	**19/81**

In a short period of time, the Pearl District has gone from a railyard and industrial district to a vibrant mixed-use residential neighborhood. The majority of first-generation residents were young professionals and retirees. An increasing number of residents are starting families which is transitioning the Pearl into a new phase of development. There is an increased demand for public amenities, services, more diverse housing, and a range of retail services.

Engaging the Community

Somerville*by*Design kicks off in Union Square

The typical system of municipal planning has sidelined the public for generations, forcing what should be a dialogue about the future into an unproductive, top-down monologue. Critics of the status quo describe it as the "Decide-Announce-Defend" model. Somerville*by*Design is different: it directly involves residents in urban design and economic development decisions facing their neighborhood - early on and in a meaningful way. Our model can be described as "Outreach-Dialogue-Decide-Implement." This new method for urban planning acknowledges that the best results can be generated when informed residents collaborate with public officials to establish a vision for the future. Somerville*by*Design helps participants create this vision from the ground up using a series of transparent and collaborative steps.

For the last 20 years, the City of Somerville has led economic development, transportation, and development planning efforts in the Union Square area to varying degrees of success. In 2014, the Somerville Redevelopment Authority used the provisions of the Union Square Revitalization Plan to acquire all of Parcel D2, allowing for the construction of the Green Line station along with new transit-oriented development. The City relocated the existing businesses and residents and cleared the land which was a catalyst for discussion around the future of Union Square since this was the first visual manifestation of change.

The Lowell Street and Gilman Square Station Area Plans were completed that fall, using the Somerville by Design planning model. Union Square residents, business owners, and stakeholders embraced the opportunity to craft a neighborhood plan, seeing it as a necessary tool to identify both opportunities and concerns. In December of 2014, the Union Square Neighborhood planning process began.

CROWDSOURCING

The planning process started with over 150 Union Square residents attending the kickoff. The event was intended to help promote and get people excited about the public process and enlist the community in marketing the project. One of the City's largest public meetings ever, it focused on identifying the various stakeholders in the neighborhood and

how to ensure widespread engagement. Not that it was ever doubted, but the identity of Union Square as a community of diverse, independent, and original people were in attendance and ready for what happens next.

VISIONING MEETINGS

The City held two visioning meetings in January 2015. More than 60 community stakeholders gathered at the old post office on January 7th to share their vision for Union Square's future; an additional 80 community stakeholders braved the cold and the beginning of record snow to join us on January 31st, even taking a walking tour of the neighborhood. City staff and consultants, with the help of engagement specialists from the City's "SomerViva" program, ran the entire January 31st vision meeting in five languages simultaneously: English, Spanish, Portuguese, Nepali, and Haitian Creole.

During these meetings, the vision of Union Square started to develop. The close proximity to Boston and Kendall Square has always been an advantage but better connectivity, in all modes, was important. Opportunity, whether with commercial development that provides jobs or through new housing options, for all residents should not be sacrificed for market driven solutions.

As a result of a map-markup exercise, Bow Street was first labeled as a pedestrian only or slow zone; a pedestrian bridge connecting Union Square to Boynton Yards was drawn; and the transformer opposite the site of the new T Station was marked, 'please cover me up.' During a photo-preference survey, each table was provided with a stack of images showing various street scenes and urban environments. Participants were asked to comment on what they liked and didn't like about the images, and whether each scene was compatible with their idea of a future Union Square. Participants expressed an interest in more traditional materials and window patterns, great public spaces, and human-scaled design, preferences that informed the illustrations in this plan.

DESIGN CHARRETTE

A design charrette is a way to get the community involved in developing plans; traditionally, planners take information and feedback from public meetings but draw behind closed doors. The charrette allows the consultant team and the community to interact throughout the drawing process. Hundreds of residents and business owners from Union Square filtered through the 3-day charrette that took place in March. While the design team was drawing, community members, city staff, consultants, and numerous stakeholder groups - including, entrepreneurs and artists, property owners, and small business owners - met to discuss their visions and concerns to inform policy development. Topics of the session included: job creation, change management and gentrification, public space, arts and culture, housing diversity and affordability, community benefits, and transportation.

At this time, the mantra of "Development without Displacement" became commonplace. Development has many positive impacts but development that pushes out low-income residents and closes cherished businesses was something that wouldn't be tolerated in Union Square. Members of Union United, a coalition of stakeholders working to ensure that the Union Square redevelopment process results in tangible benefits – not displacement – for the Union Square community, were heard. A community benefits process that could address displacement was missing from the neighborhood planning process.

The pin-up was still the culmination of the 3-day event. A discussion on the work-in-progress provided the design team with critical feedback that has helped to shape the conversation and the outcomes of the plan. When the community saw a physical design for Union Square, a new vision of sustainability surfaced. The community values design that enriches the well-being of the environment and a healthy life for residents and visitors.

PLAN OPEN HOUSES

In May and June, the public attended the Plan Open House to see drawings in progress and provide feedback for Boynton Yards, neighborhood-wide public space enhancements, preview fiscal impacts, and development objectives for the seven D Parcels. It was also announced that the Economic Development division of OSPCD would begin a community process for public benefits. This was the last event at the post office but not before one last spectacle. Capitalizing on the spring weather (which was earned by that point!), the May open house included an event in the post office parking lot, with food trucks, bike maintenance, and live music.

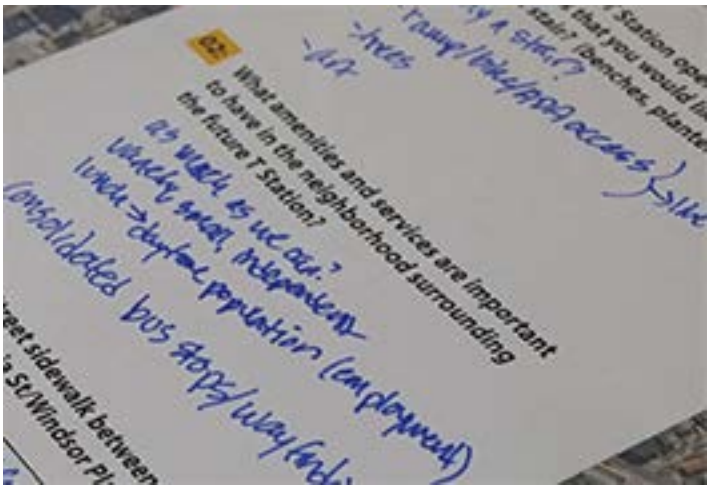
PLAN DRAFT

Beginning in October 2015, the draft neighborhood plan was available to review with 60 days allocated for public feedback. There were many positive responses about elements of the plan but some improvements were needed. Most notably was the split of commercial and residential development and a call for more open space, particularly in Boynton Yards. A response to feedback was presented to the public in February 2016 and again at a Drop-In Hours event in March 2016 and the changes are reflected in this plan.

FINAL REALLY MEANS A NEW BEGINNING

The Union Square Neighborhood Plan is the culmination of the hard work and teamwork of residents, stakeholders, business owners, city staff, and the consultant team. It's a documentation of community compromise. Residents were introduced to viewpoints of one another and city staff attempted to address both the communities concerns and vision. There are countless ways to implement this plan but, in Somerville, every final neighborhood plan is a new beginning. We implement, review, and adjust where needed.


Can make this taller


What amenities and services are important to have in the neighborhood surrounding the future T Station?

FACING (L to R): A breakout session during the charrette. Post-It Feedback left on design objectives during the open houses. A tour of Union Square. Feedback left during the visioning sessions. A group exercise during the multi-lingual visioning session.

ABOVE: George Proakis, Director of Planning, presents during the kickoff meeting.
LEFT: A resident plays the community benefits game. Tokens represented dollars and players had to choose their top priorities.
BELOW: Questions were taped up and clustered to be answered after open house presentations.

Public Benefits

Added Opportunity from Development

Development brings opportunity and vibrancy to an area by realizing commercial, residential, and civic goals through improvements to transit, infrastructure, and the public realm. Benefits are the rewards the community will receive, in addition to traditional economic development benefits, to support a socially just and sustainable community. In other words, development generates value to help address our community needs. Grounded in the notions of inclusiveness and accountability (values that are at the heart of Somerville and made explicit in SomerVision), benefits can manifest in numerous forms.

New development can intensify demands on housing, affordable business space, workforce development, additional open spaces, community facilities and services, street network, transit, etc. An inclusive public benefits package will address these public needs and demands by granting incentives or bonuses to developers in exchange for certain community benefits or amenities. In order to create a predictable system of benefits for development in Union Square and across Somerville, it is important for the community to prioritize and measure their needs and opportunities and create a streamlined process for private and public development.

No matter the community, a public process is needed prior to a benefits package or agreement. A comprehensive inventory of needs is the first step followed by a prioritization of those needs and how they can be addressed by a public benefit. The next step is a strategy plan to finance, develop, and implement the community benefits. These steps allow the City to negotiate a benefits package/agreement that meets the community informed strategy plan.

After agreement, different public benefits depend on different sources of revenue and different processes for implementation. The level of specificity of public benefit may vary: some can be detailed and ready for quick implementation; others may require subsequent design and operational specifications; and some may require additional environmental review to implement. Public Benefits as a component of the Neighborhood Plan process is a "package" of long-term community needs, not just perks that development fees can pay for.

BELOW: Mayor Curtatone speaks to the Strategy Leaders at their first meeting.

There is also a long history of both institutional and commercial development providing benefits in the form of services to the communities in which they're located. For instance, municipalities negotiate benefits with institutions like community rooms and/or medical services because they take advantage of local services. Commercial developers may make contractual agreements, from preferential hiring to infrastructure improvements. The City currently has two programs, through zoning, that can be considered benefits of development - linkage fees for commercial development and inclusionary housing. Policy recommendations of the Neighborhood Plan can also be addressed or implemented through these agreements.

Usually a place management organization administers benefits. Place Management is described "as a coordinated, area-based, multi-stakeholder approach to improve locations, harnessing the skills, experiences and resources of those in the private, public and voluntary sectors." The underlying objective is to improve or strengthen the effectiveness of a location for the benefit of its users, whether they are residents, shoppers, tourists, investors, property developers or business owners. Place management organizations can take a number of forms, including Task Forces, Community Benefit Districts, Business Improvement Districts, and Community Quarterbacks to name a few.

To help facilitate the process of determining and coming to consensus on prioritizing the components of any benefits agreement in Union Square, the City partnered with LOCUS, a national leader in steering market-driven trends toward a more economically, socially, and environmentally sustainable future. LOCUS brings hands-on experience and expertise on how America can create more jobs, increase property values, and provide sustainable economic growth. A group of "Strategy Leaders" – Union Square residents, leaders in community organizations, and local business owners – selected to represent their distinct constituencies, have identified issues to prioritize.

Potential Public Benefits

- Specific housing type desires: housing for families, seniors, artists, etc.
- Programs for supporting small businesses
- Programs to subsidize affordable business space
- Job training
- Commitments for strong employee benefits (living wages and family leave)
- Purpose-built affordable housing
- Establishment of a community land trust or other unique ownership system
- Maintaining housing service agencies in Union Square
- Small business technical assistance/needs-based assessments
- Mitigation for small business displacement costs during construction
- Community workforce/project labor agreements
- Maintenance of parks by developer or others
- Community desire for specific civic uses including library, etc.
- Subsidies for business seeking sites on 'side streets, alleys and secondary corridors'
- Flood control and climate mitigation strategies
- Energy efficiency and green infrastructure
- Smart city information infrastructure
- Further analysis of social and/or environmental impacts
- Small business displacement mitigation


No Hitting, Kickin

A VISION FOR THE FUTURE

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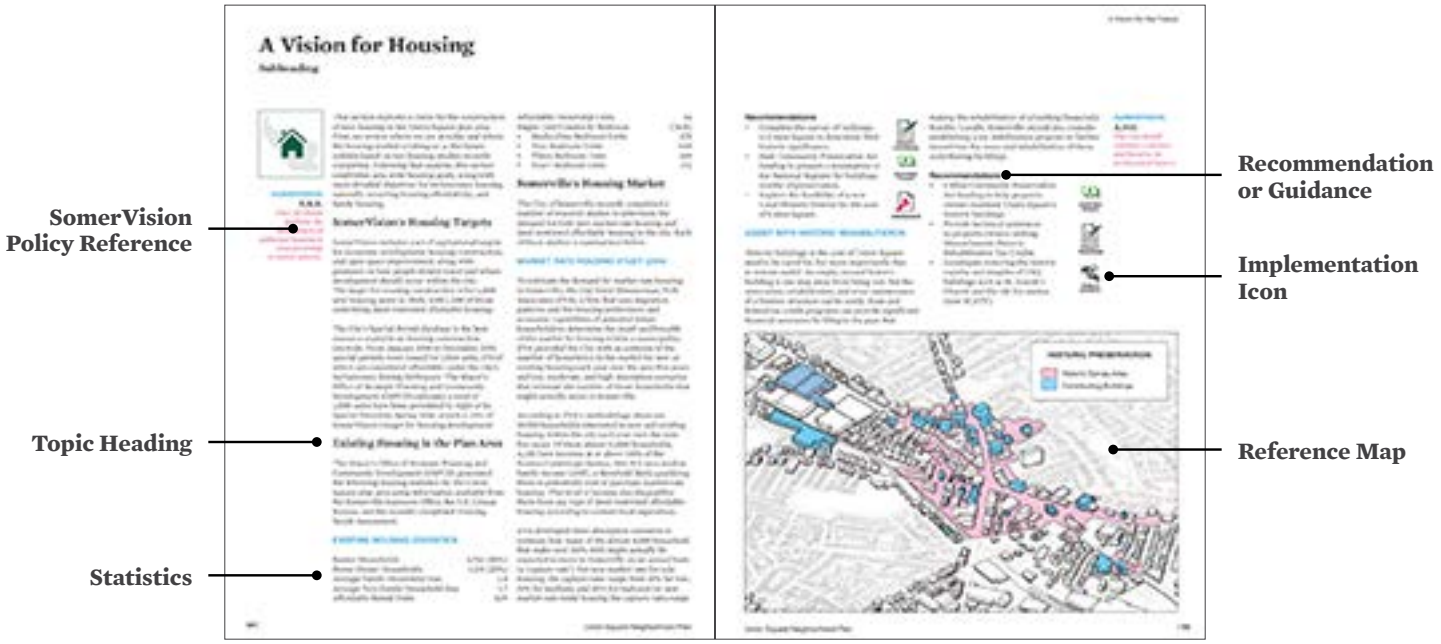
What you're about to read...

A Guide to this Section



Neighborhood plans translate the goals, policies, and actions of SomerVision to the neighborhood level. Just like in the pages of SomerVision, each neighborhood plan includes recommended policies, programs, and courses of action. Every neighborhood contributes in different ways toward achieving the objectives of SomerVision because each of Somerville's many neighborhoods is unique. Once adopted as an amendment and implementation appendix to SomerVision by the Somerville Planning Board, neighborhood plans become official City policy and provide guidance for decision makers and elected officials concerning challenges and opportunities facing the neighborhood.

Chapters 3-5 of this plan will answer many of the questions about what, where, how, and why concerning both physical design and community development efforts in the Union Square plan area. Chapter 3: A Vision for the Future investigates six major topics that reflect the primary concerns of community members: economic development, equity, public realm improvement, housing policy, the character and quality of development, and mobility. Each section includes background information and research about each topic and sets out recommendations for policies, programs, physical improvements, and other actions to achieve objectives that were created through close collaboration between community members, city staff, and urban planning and design consultants. For each recommendation there is an icon (detail at right) that identifies how it could be implemented. Many of the recommendations are closely tied to physical redevelopment that is explored in detail in Chapter 4: Development in Union Square and Chapter 5: Development in Boynton Yards. At the end of this plan, in Chapter 7, is an anticipated development timeline and an implementation table that identifies the responsible parties, possible funding source, a timeline for implementation, necessary resources, potential barriers, communication strategies, and milestones for each item.

As an aspirational document that provides guidance for future decision making, this neighborhood plan is no substitute for further community dialogue. This chapter includes many policies and development goals that require time and effort to implement, items that have citywide implications, and capital improvement projects that will require proper surveying and engineering design that could not be accomplished by this plan. This demands further work for implementation.

IMPLEMENTATION ICONS

EXISTING FUNDS

This icon identifies recommendations that could be implemented through new expenditures in the City's annual budget or other funding sources such as the Community Preservation Fund.

TAX FUNDED

This icon identifies recommendations that could be implemented because of new tax revenues or through tax financing tools such as District Improvement Financing (DIF).

PUBLIC BENEFIT

This icon identifies recommendations that could be implemented through and funded by a developer as an item in a public benefits agreement.

DEVELOPER AGREEMENT

This icon identifies recommendations that would be implemented as a condition on the sale of land currently owned by the City of Somerville to a private developer or other entity.

LOCAL ORDINANCE

This icon identifies recommendations that would be implemented through a new law in the City of Somerville's Municipal Code or Zoning Ordinance.

DESIGN GUIDELINES

This icon identifies recommendations that would be implemented through a guideline that is referenced by a review board during the permitting process for new development.

FUTURE POLICY, PROGRAM, OR PLAN

This icon identifies recommendations that would be implemented through a new or existing city policy or program managed by a city department or partner non-profit agency.

CAPITAL PROJECTS

This icon identifies recommendations that would be implemented as a capitol improvement project for infrastructure, municipal buildings, or public spaces typically funded through municipal bonds.

A Vision for Economic Development

Cultivating a Resilient Local Economy in Union Square

SOMERVISION

A.V.C.
Infill development should contribute to the fiscal health of the city.

B.I.A.
The City should utilize land use planning and zoning to increase the commercial tax base.

This section explores a vision for economic development in the Union Square plan area. First, we review SomerVision's economic development objectives and targets for new job growth. Next we review the local economy of Union Square and discuss regional trends in the office and laboratory markets. Following that analysis, this section establishes area-wide targets for new commercial floor space and employment, along with more detailed objectives for establishing a new urban employment center, supporting the arts & creative economy, and further cultivating local food production and ethnic grocers.

SomerVision's Economic Targets

SomerVision includes a set of aspirational targets for economic development, housing construction, and open space improvement, along with guidance on how people should travel and where development should occur within the city. The primary economic development target is to create 30,000 new jobs to establish a close balance between the number of jobs within the city and the size of Somerville's workforce.

When SomerVision was first written, it was estimated that the city had 20,000 jobs and 45,000 workers. Thirty thousand new jobs would bring the total employment opportunities within the city to 50,000, which is close to a one-to-one relationship once the additional workers that the 6,000 new housing units SomerVison calls for are accounted for. By the end of 2016, the end of the first five years of SomerVision's time frame, the City expects 5,000 jobs to have been created with the opening of Partners HealthCare in Assembly Square and the expansion of Greentown Labs in the Ames business complex, which is almost 17% of SomerVision's target for job growth.

A Look at the Economy

Over the past decade, Somerville has increasingly played an important role in the economic strength of greater Boston. Union Square and other Somerville neighborhoods provide a dense and diverse housing stock and robust population density that appreciates Somerville's walkable streets, easy access to daily needs, and convenient location near three of the nation's leading institutions of higher learning: Harvard, Tufts, and MIT. The city has a well-educated workforce and the unemployment rate within Somerville falls well below regional and national levels.

In the past few years, incubator spaces for small businesses engaged in the creative economy have opened, including Greentown Labs, the Design Annex, Fringe Union, Form Labs, and the nearby Artisan's Asylum. The new Brooklyn Boulders rock climbing and fitness facility near Union Square has quickly become a gathering space for Somerville's creative community through art, culture, music and entrepreneurship.

A lively local art, food, and nightlife cluster exists in Union Square, which is actively nurtured by the organizations such as the Somerville Arts Council and Union Square Main Streets. The busy Union Square restaurant scene ranges from critically acclaimed fine dining at the likes of Journeyman, Casa B, and Bronwyn, which was named a Best New Restaurant of 2013 by Esquire magazine, to fun, urban oases such as Bloc 11 Café, well-loved restaurant pubs such as The Independent, and popular ethnic eateries like Machu Picchu, Ebi Sushi, Cantina Mexicana, Sweet Ginger Thai, The Neighborhood Restaurant and Bakery and more.

On weekends, Union Square is a crowded and active spot, with special events and civic gatherings. During the warm weather months, the Union Square Farmers Market brings people to Union Square by offering fresh, locally grown produce and locally produced products. Union Square is frequently the site of quirky events and arts happenings unique to Somerville. For example, more than 11,000 people flocked to the 8th Annual "What the Fluff Festival: A Tribute to Union Square Invention" in September 2014, roughly 8,000 attend the annual SomerStreets Halloween and Oktoberfest street festival, and many additional annual and one-time events year round such as the Rock n' Roll Yard Sale, the Annual Beard Festival, the Mini Maker's Faire, the Ignite food festival, and the Circus Sock Hop draw visitors from across the region.

THE REGIONAL OFFICE & LAB MARKET

Professional services and investment management

firm Jones Lang LaSalle provides an excellent description of greater Boston's office and lab market:

> Greater Boston is home to many elite academic and research institutions, as well as world-class medical facilities. This includes the top three NIH-funded hospitals in the United States. The region also boasts 250,000 students across 52 higher education institutions, such as internationally renowned Harvard and MIT. Boston's economy is fueled by a large concentration of health care professionals, including over 30,000 scientists and other workers employed directly in biotech.
>
> Over the last decade, the life sciences industry has added over 22,000 jobs, putting Boston at the top of tech and science capabilities. As a result of the region's focus on direct access to top talent, the cluster boasts an active investor community. This makes Boston a highly attractive destination to entrepreneurs. Accordingly, Boston ranks #1 in patent ownership per capita, #2 in venture capital funding and #2 in number of IPOs.
>
> Home to many of the global leaders in tech and life sciences, the Kendall Square neighborhood in East Cambridge has been touted by some as "the most innovative square mile on the planet". As the epicenter of the life sciences industry in the United States, the Cambridge market continues to become increasingly competitive, proving to be one of the most resilient markets in the country.

According to the commercial real estate services firm Cushman & Wakefield, 25% of all tenant demand in 2015 stemmed from technology companies and start-ups. Financial services firms represented 30% of the overall demand for office space while legal and professional service firms accounted for 13% and 4%, respectively.

KENDALL SQUARE IS FILLING UP

Cushman & Wakefield, in their Office SnapShot Q3 2015 for the Cambridge Office & Lab market, anticipated leasing activity to migrate away from Cambridge's core in 2016 due to historically low vacancy rates. They also reported that only one block of space over 50,000 square feet was available in all of Cambridge making larger tenants consider options elsewhere due to lack of speculative building.

In their Office Snapshot Q4 2015 for Greater Boston, Cushman & Wakefield reported further tightening of the Cambridge market with lab and office vacancies dropping to 1.8% and 5.1%, respectively. With available space in Cambridge almost nonexistent, they reaffirmed 2016 as the year they expect tenants to explore other nearby options in the inner suburbs like Somerville.

In their 2015 Mid-Year Tenant Report for office space, the international real estate advisory firm CRESA reported that smaller (less than 50,000 sf) tenants were continuing to migrate out of Cambridge to other sub-markets due to increasing rents and competition for space from larger firms. As a result of the all-time low inventory, space scheduled to come back to the market in the next 12-24 months is frequently already spoken for due to the strong organic growth of existing firms and migration of notable, out-of-market tenants. Furthermore, the competition for space is forcing office users to consider non-conventional options to address their needs. In August 2015, IBM subleased 160,000 SF from ARIAD at Alexandria Center in Kendall Square and assumed all of the additional costs associated with retrofitting a lab-designed building into office space.

The same challenges facing office uses are now also playing out in the market for lab space. According Jones Lang LaSalle's Life Sciences Outlook (2015), there are 19 life science firms looking for 1.34 million square feet in the East Cambridge market. This includes several major tenants who are actively looking to increase their existing footprint. In its 2015 Mid-Year Tenant Report for lab space, CRESA discussed how Biomed Realty Trust, one of the largest life science landlords in Greater Boston, decided to release Vertex Pharmaceuticals in Kendall Square from multiple lease obligations with several years remaining because the demand for lab space in East Cambridge far outweighed availability.

Due to such low availability in the lab market,

SOMERVISION

B.II.A
The City should promote job creation, with a goal of reaching a one-to-one ratio between jobs and resident workforce in Somerville within the next 20 years.

SOMERVISION

B.II.B
The City should promote growth in strategically-targeted economic sectors.

Cushman & Wakefield has encountered numerous tenants expressing significant interest in space before it is even publicly marketed. They go so far as to claim the "time is right for speculative construction" and highlight that less than a mile away from Kendall Square, in North Point, DivcoWest plans to break ground on an 180,000 sf building in 2016 - having not yet determined if the property will be office or lab. Affirming the situation, CRESA reports that between the growth of existing tenants and the continued influx of firms looking to establish a presence in the neighborhood, space that becomes available is typically committed before any marketing efforts are even necessary. Although efforts to build new space in Kendall Square continues, robust leasing activity is resulting in very little availability and both lab and office tenants, whether they are large or small, just starting-up or well established, are looking for space.

Setting New Economic Targets

Chapter 2: Community Driven Planning establishes a goal for almost 4.25 million square feet of new commercial space within the Union Square plan area. This new development could result in almost 7,900 new jobs in Union Square and almost 7,575 jobs in Boynton Yards. This job growth represents 51% of SomerVision's goal for 30,000 new jobs and 62% of the remaining need after accounting for new job growth in the city between 2010 and 2016. More importantly, commercial development will help improve the fiscal health of the city and reduce Somerville's dependence on state aid and residential taxes and fees.

ECONOMIC DEVELOPMENT SUMMARY

Total Commercial Floor Space	**4,220,620**
• Union Square	2,242,688
• Boynton Yards	1,977,932
Total Employment	**15,465**
• Union Square	7,892
• Boynton Yards	7,574

A New Urban Employment Center

Redevelopment efforts in Union Square and Boynton Yards are focused on positioning the area as an attractive alternative to traditional employment centers like Kendall Square or the Financial District and emerging locations like the Seaport, Alewife, North Point, and Watertown. Chapter 2: Community Driven Planning sets out the plan's objective to transform the eastern side of Union Square and Boynton Yards into an Urban Employment Center station area with an interconnected relationship to the new Union Square Station of the Green Line.

In recent history, commercial office development has been slow to occur in Somerville due in large part to competition from superior locations (e.g. Kendall Square, Boston CBD, etc.); lack of an environment attractive to office tenants; poor transit connectivity; and sub-standard infrastructure. All of that is now changing.

In its immediate future, Union Square and Boynton Yards have the opportunity to attract commercial office tenants, provide new jobs, and help expand the City's tax base as availability tightens in existing job centers, causing demand to continue to increase. Union Square's new transit station will add important connectivity to the regional transit system and revitalization efforts in the neighborhood will include critical upgrades to aging infrastructure. The post-industrial areas of the city, such as Boynton Yards, are exceptional sites for creating the urban block structure needed to build office buildings. New streetscape, retail amenities, open space and housing options will all contribute to the amenity-rich environment that is driving commercial leasing decisions today.

DEVELOP AN INNOVATION ECOSYSTEM

The term "innovation district" has almost become cliché in Greater Boston. However, Union Square is uniquely positioned both geographically and historically to evolve into this type of local economy. The Brookings Institute describes Kendall Square as the Anchor+ model of an innovation district, where large scale mixed-use development is centered around major anchor institutions and a rich base of related firms,

entrepreneurs, and spin-off companies.

Anchor institutions typically come from the education or healthcare fields (often called Eds & Meds), but can also be non-profit cultural institutions, locally-focused philanthropies, libraries, or even large for-profit corporations. These organization tend not to move locations and reinvest their economic, human, and intellectual resources to intentionally improving the communities where they are located. Large companies, universities, and other anchor institutions help spread the fixed costs of research and development and help support a fledgling innovation economy.

An innovation ecosystem is created when a synergistic relationship develops between people, firms, and places that facilitate idea generation and accelerate commercialization with a focus on basic science, applied research, and business expansion. Providing a physical environment where this can take place requires a continuum of spaces for companies at different stages of their development. In Kendall Square, business incubator spaces like Lab Central and Mass Innovation labs compliment anchor BioMed and technology firms by providing small and flexible space solutions with nimble lease terms to start-ups and entrepreneurs.

Union Square already has like-minded providers such as Greentown Labs, Artisans Asylum, Workbar and Fringe Union where hundreds of people are already clustering together to form a community of innovation. The obvious need is for new office space at a variety of sizes and an anchor institution interested in connecting with the existing start-ups, business incubators, and entrepreneurs to add fuel to Somerville's own innovation ecosystem where ideas and knowledge can be transferred more quickly and seamlessly between institutions, firms, and workers.

Recommendations

- Actively work to attract office and lab tenants from the life sciences, biotech, financial services, and technology fields to Union Square and Boynton Yards.

- Increase the supply of commercial office and lab space in the Union Square plan area.

- Actively pursue and incentivize at least one anchor institution to locate in the Union Square plan area.

- Support the development of place based infrastructure needed by high tech companies (energy, utilities, broadband, transportation, etc.)

- Facilitate the creation of non-traditional commercial spaces that are desirable to a variety of firms in different stages of their development.

PRACTICE 'ECONOMIC GARDENING'

Having at least one major employer in Union Square is important for establishing a daytime population of workers sooner rather than later, but a local economy supported primarily by one large employer is susceptible to the financial realities of corporate decision making that is often out-of-town or even out-of-state. The best way to avoid an economic dependence on decision makers located outside the community is to diversify local employment options - but how?

MIT economist David Burch has proposed a theory that Stage 2 businesses, those with between 10 and 100 employees and an annual revenue of at least $1 million, create the most favorable climate for job creation. In other words, they create jobs at a higher rate than other sized firms specifically because they are growing businesses. Stage 2 companies only make up about 10% of the businesses in the United States, but they create over 35% of new jobs. Although attracting a big employer with a large number of jobs to Union Square would be beneficial to Somerville in general, the best way to grow the local economy and create new office and research & development job opportunities for residents may be by focusing resources toward the growth and development of these types of businesses.

Locally, promising Stage 2 companies are already being spun out of incubators and co-working

SOMERVISION

A.III.A
The City should establish policies, regulations and fees for small neighborhood businesses that are fair, clear, and designed to encourage entrepreneurship.

SOMERVISION

B.III.D
The City should support the development and retention of incubator, entry level and mid-level business space.

spaces like Greentown Labs and TechHub. These fledgling firms typically start off as individuals or small teams working from hot-desks and other shared workplace facilities, but they create a product or provide a service that finds a niche in the marketplace and they soon need physical space to support their own growth and development into the types of firms that create new jobs. Moreover, in many cases, these emerging Stage 2 companies are already here in Somerville. They just need space the grow.

Littleton, CO was the first U.S. city to embrace this theory, now called 'Economic Gardening', in hopes that these mid-sized companies would grow the middle class workforce. The idea worked. By providing a central resource for business intelligence tools and data that individual companies either aren't aware of or cannot afford, Economic Gardening helps organizations make informed business decisions; identify market trends, competitors, and untapped resources; and develop targeted marketing plans, optimize search engine results, and create social media marketing to drive growth.

After 25 years of this targeted assistance, Littleton has tripled local employment and increased tax revenue by 350%, all through the development of Stage 2 businesses. Large employers can help set the stage for a economy by attracting attention, but a truly robust local economy is one that finds itself independent from the needs of a single employer by investing in a diverse mix of locally cultivated firms in different stages of their development.

Recommendations

- Expand business development and technical assistance resources toward attracting and supporting Stage 2 businesses.

POLICY/ PROGRAM

SUPPORT COLLABORATIVE WORKPLACES

Arts centers, business incubators and accelerators, culinary incubators, design and fabrication centers, and fabrication laboratories are all

Why are Stage 2 Business Important?

When it comes to business development, there's a big difference between small-business entrepreneurs and growth-oriented entrepreneurs. Some small business owners are simply self-employed because they like being their own boss. Creating jobs isn't necessarily a priority for them. There are also small businesses that may provide jobs for a neighborhood, but limitations in their type of business or scope of their market restricts their growth. In contrast, growth entrepreneurs are significant job creators because of their appetite — and aptitude — for expansion and connection to national or global markets that brings outside dollars into the local economy.

Stage 2 businesses have between 10 to 100 employees and annual revenue ranging between $1-50 million. These businesses play an important role in economic prosperity that distinguishes them from small businesses and larger corporations and happen to be powerhouses when it comes to job creation and revenue growth. Across the U.S., Stage 2 businesses only make up 10-13% of establishments, but they account for 35% of the job growth. Furthermore, the jobs they tend to create expand the middle class workforce.

Cities typically provide funding and resources for small businesses and startups, but second-stage entrepreneurs have different needs that makes supporting them different than working with small businesses. The second stage is a critical time for growth entrepreneurs because they face an entirely new set of challenges. For example, second-stagers wrestle with refining core strategy, adapting to industry changes, expanding their markets, building a management team and embracing new leadership roles.

examples of dynamic works paces that already serve as a critical piece of Union Square's existing local economy. Facilities like Artisan's Asylum, Greentown Labs, Fringe Union, as well as the Workbar location recently opened by US2, all provide affordable space to entrepreneurs and knowledge-based start-ups in an environment that encourages collaboration between individuals and firms and the natural cross-pollination of ideas, which is critical to building a local economy.

In the business of hosting entrepreneurial individuals and start-ups, these types of spaces serve as a low-cost entry point into the market for office or manufacturing space and help get new business off the ground by providing shared access to co-working features such as for-rent 'hot-desks,' dedicated workstations, conference rooms, meeting rooms, event space, resource libraries and even expensive tools and machinery or cooking facilities.

Recommendations

- Establish an Arts & Creative Enterprise use category in the Somerville Zoning Ordinance that permits these new types of workplaces by-right in the Union Square plan area.

- Establish an Office use category in the Somerville Zoning Ordinance that permits co-working uses in addition to office, research & development, laboratory by right in the Union Square plan area.

The Arts & Creative Economy

Creative enterprises and individuals from the creative workforce are a defining characteristic of the local economy, culture, and image of Union Square. However, the arts and creative economy is reliant on inexpensive space to think, create, publish, rehearse, perform, sell, and teach. Policies should be established to both preserve existing buildings with the characteristics creative industries need to function and create new floor space that remains accessible and affordable to artists and other creative individuals.

SPACE = WORK

The Office of Strategic Planning and Community Development has embraced a Space=Work concept to inform policy decisions surrounding the Arts and Creative Economy in Somerville. This idea was first put forward by a portion of Somerville's artist community based on the premise that without space for creative enterprises and members of the creative workforce to do their work, the sustained and noticeable presence of artists and creative individuals in the community is most likely to disappear.

Union Square's arts and creative economy is a diverse collection of sole-proprietors, small firms, and larger corporations integrated throughout the neighborhood. By 2011, Somerville Open Studios became the largest one-weekend open studios in the entire country with over 390 participants - many of those being in Union Square. Within the former Ames Safety Envelope Company's campus of buildings is what many believe to be the entrepreneurial epicenter of Somerville. Companies like Greentown Labs, Artisans Asylum, Brooklyn Boulders, and Aeronaut Brewing along with hundreds of individuals and small start-ups have clustered together to form a community of innovation. However, if spaces like the Ames complex had not been available, Somerville's arts community would be hard pressed to survive on only home based studios and workshops scattered throughout the residential areas of the city.

As Union Square and Boynton Yards evolve into an urban employment center, many of the existing buildings that creative enterprises call home today will feel market pressures to redevelop to meet the demand for housing or even office space. Limiting the uses allowed in buildings with the physical characteristics that allow the creative economy to thrive is the best way to preserve these spaces. Additionally, new development should support an expanded presence of the arts and creative economy by including space for these uses in new construction.

Recommendations

- Establish a "Fabrication District" in the Somerville Zoning Ordinance to protect buildings well suited for Arts & Creative Enterprise uses.

SOMERVISION

C.I.A
The City should foster a creative economy.

C.I.B
The City and its community arts partners should sustain and expand Somerville's prominence in the arts.

C.II.A
The City should use zoning and public policy to foster space for a creative economy, promote live/work spaces, and retain affordable artist work spaces.

SOMERVISION

C.III.A
The City and its community arts partners should strengthen existing arts, performance and cultural institutions.

- Permit uses from the Arts & Creative Economy uses by-right within the Union Square plan area.

- Require 5% of commercial floor space to be set aside in new development for Arts & Creative Enterprise uses.

- Consider allowing required floor space for Arts & Creative Economy Uses to be consolidated and relocated from individual 'sending sites' to one or more 'receiving sites'.

Local Food & Ethnic Grocers

Behind the scenes, Union Square is home to a local food economy that has quietly grown over the years. Multiple international food and beverage markets, an artisanal (and fair trade) chocolate manufacturer, three local breweries, and an urban farm all call the Union Square plan area their home. During the course of the Union Square neighborhood planning process, community members expressed a strong desire to make food an even greater part of the local economy.

EMBRACE URBAN AGRICULTURE

By investing in urban farming and value-added food production, the produce, products, and ingredients needed by other contributors to the local economy can be provided by the local economy itself. Community gardens and farms in Union Square only serve a small segment of the population. To embrace a wider range of urban agriculture practices, the many different types of gardening and farming, from window boxes to rooftop farms and beyond, can be integrated into the very fabric of the city.

Food is already such an essential part of the existing character of Union Square. By encouraging a wider variety of growing options, as well as improvements for the existing community of gardeners and farmers, Union Square can truly embrace agriculture as a part of everyday life.

Recommendations

- Relocate and expand the South Street Urban Farm within Boynton Yards during redevelopment.

SUPPORT THE INTERNATIONAL MARKETS

Union Square has a eclectic collection of small, international food and beverage markets. This unique characteristic of Union Square is celebrated through Nibble, the Somerville Arts Council's initiative celebrating food, culture and diversity through market tours, cooking classes, occasional pop-up restaurants, the Nibble book, and a blog. Nibble promotes and supports food-related businesses and culinary entrepreneurs, especially from immigrant communities, and aims to spur cultural economic development and preserve the international flavor of Union Square because food tells endless stories about cultural identity and conveys a rich sense of place to people of different ethnicities and across different socioeconomic groups. The diversity in these markets reflects the diversity of the ownership and patronage which is a direct reflection of the population that lives and works in Union Square.

Recommendations

- Continue to support the Somerville Arts Council's effort to highlight the markets of Union Square as a valuable resource to the community.

- Consider creating a new property tax exemption for non-formula grocery stores & fresh food markets.

- Target resources from the Storefront Improvement Program to enhance the curb appeal of Union Square's international markets.

DEVELOP A NEIGHBORHOOD 'FOOD WEB'

Frequently, economic policy discussions tend to assume that food still comes from farms and that food and agriculture are essentially one and the same. Reality has changed. Today, the food economy is better understood as an output of the manufacturing and services sectors. Decades of the industrialization and globalization of food

and agriculture over has dramatically lengthened supply chains, the physical distance from farm to plate has increased, and as the consumption of processed, package, and prepared foods has become the norm. Recently, the public has become increasing interested in understanding the food economy and how planning and policy can support the production of healthy foods in a manner that supports the local economy as part of broader sustainability and public health goals.

To shift urban markets away from conventional industrial agriculture and distribution practices, a whole new web of food production, business development, distribution networks, and personal relationships must form to build a local food economy that can compete in the market. An important piece of this new web is the facilitating the conversion of raw food into value added products, such as cheeses, cured meats, pickled vegetables, hard ciders, and all other manner of desirable and exciting foods.

If Union Square is going to become a leader in urban agriculture and local food production, the City must play an active role by providing land and buildings for this purpose. The city can also help directly facilitate larger-scale farming by seeking funding for critical and expensive infrastructure, such as water hook-ups, centralized distribution centers, and other basic infrastructure that is incredibly costly to urban farmers.

Recommendations

- Explore the creation of a physical space for market stalls and shared kitchens or kitchen incubators.

- Identify opportunities (both land and buildings) in the Union Square plan area suitable for new Community Gardens and Urban Farms.

- Host a design competition with local artist/designers to develop flexible and movable planting beds.

- Provide grant funding to help establish new start-up urban farms.

- Develop a program to match growers to restaurants and value-added food producers.

- Educate residents on ways to find other gardening opportunities like My City Gardens and YardShare.

- Develop a management program for the City's community gardens and consider membership sun setting provisions for unused community garden plots.

- Consider creating a new property tax exemption for urban farms to help offset costs and reward putting underutilized land to productive use.

- Continue to support the Somerville Farm to School program.

SOMERVISION

C.VII.B.
The City should continue to increase opportunities for urban agriculture.

A Vision for Equity

Managing a Changing Neighborhood

This section explores a vision for equitable change in the Union Square plan area. First, we review SomerVision's objectives related to equitable development. Following that, this section establishes recommendations for mitigating direct displacement, helping the Union Square community build understanding between both existing and newly arriving residents, businesses, and employees, providing temporary support to existing businesses and households facing a changing neighborhoods, increasing the economic mobility of residents, and supporting small businesses.

SomerVision and Equity

SomerVision features a word cloud made from the text of all of the goals, policies, and actions written by community members. The word with the greatest emphasis in that cloud is diversity. A number of SomerVision's top level goals are directly intended to maintain diversity and ensure Somerville remains a great place to live, work, play, and raise a family for everyone.

These goals include protecting and promoting a diverse, interesting mix of small-scale businesses; supporting a business-friendly environment where businesses that start here, can also grow here and stay here; investing in the talents, skills, and education of people to provide opportunities to residents of all social and economic levels; strengthening education programs and university and professional partnerships within Somerville schools; and expanding a balanced mix of rental and home-ownership units for households of all sizes and types from diverse social and economic groups. Although there may not be a SomerVision number to measure things against, these qualitative goals help provide the direction we need to make sure that the changes occurring in Union Square happen in the most equitable way possible.

Change Management

Union Square is, at its core, home to a diverse mix of people and businesses. Managing change so that a neighborhood improves into a better version of itself is entirely possible. Successful change management is difficult, but a commitment to public engagement with strong leadership and coordination from local government puts any neighborhood in a position to direct change in a positive way.

Residents and business owners in changing neighborhoods naturally fear the potential for the displacement and cultural overhaul that change can bring. Typically referred to as gentrification, this kind of change is often thought of as an inevitable force that displaces people and dilutes the culture of a neighborhood. However, there is nothing inevitable about gentrification. Change is inevitable; gentrification is not.

Changing neighborhoods are presented with an opportunity, not to promote or prevent change, but to shape change to meet the goals of the community. Ignore the economic forces of change and they will dictate the future for you. Attempt to stop those same forces and you can create even larger problems. Neighborhoods change. They must change just to stay the same. Union Square is no different. Change brings with it all the diversity and uniqueness that makes neighborhoods great, but a neighborhood that changes entirely will cease to be itself.

Build Knowledge & Social Capital

Gentrification can mean many things to many people. But to properly address gentrification so that it is reshaped into a force for positive change, it must first be understood. What level of gentrification warrants government intervention? What form of gentrification is happening to the neighborhood? What tools are available or appropriate to combat gentrification?

UNDERSTAND CHANGE AS A FIRST STEP

These types of questions can only be answered if City Staff is paying close attention to change. Properly managing change requires constant analysis, interventions informed by feedback, and careful tracking of outcomes. Tactics to ensure that at-risk residents benefit from change must be properly framed and implemented and as local conditions evolve, the appropriateness of different tactics must be understood and applied at different times.

Recommendations

- Dedicate staff resources to analyzing and managing equitable change.

POLICY/ PROGRAM

ENGAGE IN NEIGHBORHOOD INTEGRATION

When change is only driven by outside forces, neighborhoods are altered to resemble the desires of that outside force. If, instead, existing residents and businesses are involved in the process, neighborhoods can use change to create healthier versions of themselves.

The most successful change management programs from other cities all promote dialogue between new arrivals and long time residents. Newcomers to Union Square are attracted by its diversity and culture that long-time residents and businesses worked so hard to shape. However, forgetting to nurture that local culture by taking it for granted, even if unintentionally, can cause it to slowly slip away over time. A member of Somerville's artists community probably put it best by saying "One reason people come to Union Square is because they love the arts community we have here. But if they want to make sure artists stay a part of the neighborhood, they have to buy art."

One way to ensure the involvement of existing residents and businesses is to establish a representative group of community members to address these issues from the community's perspective. Such an organization would maintain a direct line of communication with local government, implement relationship building programs and activities between 'long-timers' and 'newcomers', convene a regular gathering (annual or biannual) to evaluate progress and recommend 'course corrections', and report on interactions within the community.

Recommendations

- Establish a community relations committee of neighborhood residents and business owners from Union Square to function as a welcoming 'front porch' to new residents and businesses.

POLICY/ PROGRAM

STRENGTHEN THE SOCIAL CAPITAL OF EXISTING LOCAL INSTITUTIONS

Neighborhood schools, places of worship, non-profit organizations, block groups, and similar organizations typically cut across differences and open their doors to everyone equally. When a neighborhood experiences change, the existing social structure can feel threatened by outside or incoming pressures. However, government and philanthropic support for the institutions that form the social infrastructure of a neighborhood can help these institutions adapt and grow, reorient their missions, and increase capacity within the community. Assisting social institutions with an open-door policy is an equitable way to allocate government assistance within a community.

Recommendations

- Provide professional and technical assistance to neighborhood institutions.

POLICY/ PROGRAM

Mitigating Direct Displacement

During the Union Square neighborhood planning process, a broad-based coalition of community members focused their interest on achieving development without displacement. To achieve this, Union Square can and should become a national leader in redirecting the negative impacts associated with gentrification into positive change for the neighborhood. With unprecedented growth of both residential and commercial prices affecting both housing costs and commercial rents, the City must deploy programs to support the residents, businesses, and organizations who already call Union Square home and have worked hard to make the neighborhood the great place that it is already.

The Union Square Revitalization Plan stipulates that "assistance and benefits be provided to residents and businesses who are displaced as a result of a real estate acquisition by a public entity, or a private entity using public funds, regardless of whether the real property was acquired by eminent domain or negotiated sale." This assistance was provided to property owners and businesses when the Somerville Redevelopment

SOMERVISION

C.II.B.
The City should assist with improving the coordination between cultural institutions.

SOMERVISION

E.I.B.
The City should promote policies that protect tenant and landlord rights and clarify landlord and tenant responsibilities.

Authority acquired the properties that make up the D2 Parcel (see page 182). Given the number of businesses that face displacement due to redevelopment, relocation to a first floor space on a site developed earlier should be extended to any retail sales, restaurant, or community services establishment currently on any of the D Parcels, regardless of whether or not public funds are used to acquire the property. In exchange for this prioritized relocation, these businesses should be required to provide living wages, and if possible benefits to their employees.

Many of the policies and programs recommended to stop, slow, or mitigate residential displacement can be found in A Vision for Housing (see page 90). One that deserves mentioning here is the potential need for an anti-displacement program for renter households with children. This City has made it a priority to maintain Somerville as a great place to raise a family, but family-oriented households can have less disposable income available to adjust to changing housing costs in a neighborhood experiencing gentrification.

Recommendations

- Provide relocation assistance for existing businesses on the D Parcels.


DEVELOPER AGREEMENT

- Consider an anti-displacement program for qualifying renter households with children.


POLICY/ PROGRAM

Stabilize the Market

The stress and anxiety over changing conditions felt by many residents and business owners in changing neighborhoods results from concern that the existing social structure and culture is threatened. The potential displacement of well-known faces and closure of neighborhood hangouts can galvanize residents to resist changes that could also improve conditions for the community. They key is to be empathetic to the fact that new development will not impact everyone equally. Local government can and should help to stabilize changing neighborhoods through programs specifically designed to support low-income, cost burdened households and small local businesses remain in the neighborhood.

SUPPORT THE AUTONOMY OF EXISTING RESIDENTS AND BUSINESSES

Many existing households and businesses, particularly renters, have limited resources to maintain a choice in remaining part of the neighborhood when gentrification occurs. The forced exit of large numbers of community members from a neighborhood is harmful both to those who leave and to those who remain. Integration programs between newcomers and long-timers are meaningless unless existing residents and businesses have options that provide them a choice in staying or leaving, rather than being involuntarily displaced. Other municipalities have already tested a wide range of tools to help to reestablish choice for existing households and business that can be implemented for Union Square.

Recommendations

- Consider providing rent stabilization vouchers for qualifying households.


NEW TAX REVENUE

- Continue the Closing Cost/Down Payment Assistance Program for qualifying households.


POLICY/ PROGRAM

- Consider providing a property tax 'Circuit Breaker' or freezing property tax assessments for cost burdened households.


NEW TAX REVENUE

- Require a tenant right of first refusal to purchase homes or buildings prior to a sale to a third party.


ORDINANCE

- Establish a first-right purchase assistance program that provides financial support to tenants exercising their first refusal rights.


POLICY/ PROGRAM

- Continue to fund small business assistance programs.


EXISTING FUNDS

- Consider requiring minimum notification periods for the commercial lease termination of a small businesses.


ORDINANCE

- Consider implementing a commercial lease renewal arbitration & mediation process for small businesses.

ORDINANCE

Increase Economic Mobility

Today, the vast majority of Somerville residents have to leave the city to find work. Traveling far distances to get to employment brings with it many societal, economic, and personal impacts including lost time with families, taxes on personal well-being, and limited ability to participate in the local community.

Redevelopment in Union Square and Boynton Yards will fundamentally help to raise real incomes and reduce costs of living by creating a fully transit-oriented, mixed-use Urban Employment Center (see page 45). This will increase employment opportunities for residents by simultaneously putting jobs in close proximity to dwellings and leveraging various transportation modes to increase resident's access to employment options outside the neighborhood.

On average, people who live in a 'transit-oriented development' have more than $10,000 in extra disposable income compared to the average American. This is a direct result of having job opportunities closer to home, reduced auto-dependency, and oftentimes allowing people to forgo owning a car. Very few neighborhoods have a true one-to-one relationship between workers and jobs, but each job provided locally can have a positive impact on local household incomes while also providing cost savings by reducing travel times to work.

Another way to increase the economic mobility of residents is to help people increase their earnings or make their money stretch further. Household earning capacity and building assets are critical strategies to address a mismatch between wages and housing affordability. One of the primary problems residents of changing neighborhoods face is that they are often disconnected from financial capital and lack the resources to travel for work. This separation makes it even more challenging to start a business, find upwardly mobile employment opportunities, and to improve overall financial stability. To overcome these income hurdles, the City can provide the support necessary to bridge the attainment gap and help people raise real incomes and reduce the local cost of living.

HELPING TO RAISE REAL INCOMES

Redevelopment in Union Square and Boynton Yards promises to create thousands of new jobs. However, creating higher-wage jobs does not itself ensure current residents will be employed in the new office, lab, and retail establishments that open or in the construction jobs needed to build the new development. Redevelopment in Union Square should be seen as an investment in the human capital of Somerville — an opportunity to train and employ many Somerville residents who need well paying jobs in order to continue to afford to live in the neighborhood. A strong commitment to job training and placement for existing residents who need well paying jobs in order to continue to afford to live in the neighborhood should go hand in hand with redevelopment.

Workforce training programs can take on a number of forms and be funded from a number of sources. In April 2015, the Somerville Board of Aldermen voted to approve a home rule petition to the Legislature that seeks to establish a Somerville Job Creation and Retention Trust and to assess a jobs linkage fee on large commercial real estate projects in order to provide financial resources for job training programs. The City can utilize existing partnerships with local colleges and universities, professional relationships with area businesses, and expand vocational training at the Somerville High School to ensure both high school students and adults have access to programs that help them build the skills that employers are looking for. Additionally, creation of a non-profit Workforce Education Center partially funded by new development has been discussed as a potential public benefit in Union Square.

Recommendations

- Continue to advocate for the Job Creation and Retention Trust home rule petition with the State Legislature.

POLICY/ PROGRAM

SOMERVISION

B.IV.A.
The City should pursue the creation of a network of workforce development programs that train residents for jobs today and in the future.

SOMERVISION

C.IV.A.
Somerville's public schools should aim to achieve success for all Somerville students, paying particular attention to those who are economically disadvantaged.

C.IV.B.
The City, the Somerville Public Schools, and their community educational partners should encourage innovative programs, mentoring, and scholarships to promote success for diverse populations.

- Partner with local colleges and universities to increase enrollment by Somerville residents.

- Establish adult apprenticeship programs with businesses and institutions in the Union Square plan area.

- Help establish work study, internship, and apprenticeship programs for Somerville High School students with businesses in the Union Square plan area.

- Establish a Non-Profit Workforce Education Center in the Union Square plan area that also links residents to potential job opportunities.

- Require businesses to check in with the Workforce Education Center for qualified candidates for open positions prior to being publicly advertised.

Supporting Small Businesses

Small, locally owned businesses are a large part of Union Square's unique identity. They provide a range of essential goods and services, are responsive to the needs of neighborhood residents, and provide jobs that are a gateway to middle-class incomes, especially for immigrants and ethnic households. These storefront retailers, service providers, and food purveyors all rely on street-level pedestrian activity for their success.

When one of our unique storefront businesses closes, we all lose. Small, locally owned businesses hire locally, contract services locally, and purchase supplies locally to a greater degree than franchises and chain stores. For every dollar spent at a independent business, up to 75% is recirculated locally – making that dollar worth over $2.60 to the local economy. In contrast, for every dollar spent at a franchise or chain, anywhere from 55% to 85% travels out of the local economy to somewhere else.

LEVEL THE PLAYING FIELD

Helping small businesses stay in Union Square requires concrete information about what their current needs are for any kind of support policies or programs to be successful. A small business needs assessment survey can help inform the type of technical assistance provided by the City and ensure the efficient use of limited resources in a manner that assists in small business retention.

One reason independent businesses thrive is partially because the neighborhood has remained under the radar of regional market pressures. For years, affordable commercial rents have combined with access to a high number of customers to create an attractive location that fosters the growth of small business. However, corporate franchises and national chains have economies of scale that provides advantages in advertising and paying the rent. Rents are on the rise and existing space is limited.

Increasing the amount and number of spaces available for small businesses increases competition between building owners and makes leases more reasonable for all tenants, while also providing space for businesses to move in and out of as needs (and prices) change. Not all of these spaces need be in prime locations or perfectly sized. Locally owned shops that cater to neighborhood needs can be tucked away off main street, on seconds floors, or along secondary streets and remain successful because they develop close relationships to their customers.

In neighborhoods experiencing new growth and development, property owners are sometimes encouraged to keep retail spaces vacant while they wait for the perfect tenant. At the same time, multiple small businesses can be searching for smaller spaces to no avail. If the City were to adopt a Vacant Property Registration Ordinance efforts to match tenants to available space by the City's Economic Development Division could be enhanced and the community could be reassured that ground floor space will remain available to the full breadth of the market.

Recommendations

- Conduct a Small Business Needs Assessment survey to identify priority needs for small business technical assistance services. POLICY/ PROGRAM
- Increase the supply of retail space, including 'off main street' and seconds floor spaces, in the Union Square plan area. DEVELOPER AGREEMENT
- Consider adopting a Vacant Property Registration Ordinance in the City's Municipal Code of Ordinances. ORDINANCE
- Limit the storefront width of first floor uses over 10,000 square feet in floor area in the Somerville Zoning Ordinance so that they are lined by other active establishments. ORDINANCE
- Consider requiring a Special Permit for formula businesses in Union Square in the Somerville Zoning Ordinance. ORDINANCE

LOWER THE BARRIERS TO ENTRY

Small businesses takes on many forms. Some of Somerville's most prominent artists started working out of their garages. Many of our breweries began as home-brew hobbyists in their kitchens. Unique products made by Somerville's entrepreneurs can be found at the Union Square Farmers Market, the Davis Flea and small curio shops in various neighborhoods. But bringing products and services to market can be an uphill battle that could be made easier.

Street vendors, food trucks, and kiosks in public spaces all provided a low-cost entry point for the development of local businesses. Vendors climb the ladder to rent a shop front, renters can eventually become owners, and store owners can expand to launch successful franchises. This type of grass-roots businesses development, if allowed and supported, can create additional jobs and adds vibrancy and diversity to the neighborhood.

Recommendations

- Establish business licensing programs for street vendors, food trucks, and micro-retailers in the Union Square plan area. POLICY/ PROGRAM
- Continue to support the ongoing work of Union Square Main Streets and Somerville Local First. POLICY/ PROGRAM

SOMERVISION

B.III.B.
The City should continue efforts around permit streamlining to facilitate the process of opening a business in Somerville, while ensuring a transparent public review process.

A Vision for the Public Realm

Public Space & Public Life Improvements

This section explores a vision for enhancing the public realm (e.g. streets and public spaces) in the Union Square plan area. First, we review SomerVision's various objectives for the public realm and existing conditions in the Union Square plan area. We review a new planning methodology to categorize public spaces by their type and cover the different methods available to produce new public spaces of the type and design that will meet community needs. Finally, this section includes recommendations for improving the pedestrian realm so that it is accessible and welcoming environment that enriches our well being.

SomerVision and the Public Realm

SomerVision includes a set of aspirational targets for economic development, housing construction, and open space improvements, along with guidance on how people should travel and where development should occur within the city. The target for open space is to establish 125 acres of new public spaces.

Since 2010, the beginning of SomerVision's time frame, about 12.8 acres of new public space has been created through the enlargement of existing and creation of new spaces like Chuckie Harris Park, Symphony Park, and the extension of the Community Path to Lowell Street, with an additional 19.5 acres in the pipeline. This leaves about 93 acres of new public space still to be accounted for from the original target in SomerVision. However, with only about four square miles of land area in the city, achieving SomerVision's goal for new public space is much more challenging than for development targets that can go vertical (jobs and housing).

SomerVision estimated that 365 acres of land existed in the Transformational Areas shown on the SomerVision Map and that Union Square and Boynton Yards represented 16.4% of that area. Since SomerVision was adopted, the City has conducted more accurate measurements of these areas. As it turns out, 365 acres was an overestimate. However, the City decided to

aggressively pursue SomerVision's goal for 125 acres of new public space by striving to provide 16.4% of the remaining space needed in Union Square plan area. This results in a goal of 15.25 acres of new public space for redevelopment in Union Sqaure.

Existing Public Spaces

Today, residents of Union Square and Boynton Yards have access to about 13.45 acres of public space, which is about .92 acres per 1,000 residents. In comparison, city-wide there are about 154.87 acres of civic space, which is 1.96 acres per 1,000 residents. However, even within the Union Square plan area there are discrepancies in how many acres of public space are accessible to different residents. People living near Lincoln Park, Union Square's largest public space, have easy access to over five acres, while homes just five minutes away in Duck Village have access to only the 1.3 acres Perry Park has to offer. But, are they really worse off?

This highlights the challenge in measuring the value of our public space as simply an ideal ratio of acreage to people. Just because acreage exists doesn't mean its well designed or well suited to the needs of nearby residents. When looking for new ways to understand the quality, rather than just the quantity of public space we need to consider factors such as the diversity of space types within a neighborhood and the walking distance necessary to visit them. Although their size is important, understanding the qualitative characteristics that play a more important and strategic role in our interdependent relationship with public spaces is necessary to do proper planning for the future of the public realm.

Life is difficult to predict. It is a phenomenon continually changing. Nonetheless there are methods to study how life unfolds in city spaces. Similar to meteorology, planning for people doesn't mean that we can forecast completely how people will use a particular space. By collecting data about the interaction of life and space in cities the same way we might collect data about traffic we can develop a greater understanding of public life and how it might be expected to unfold within similar conditions.

Jane Jacobs wrote in the preface of her seminal book *The Death and Life of Great American Cities* "...please look closely at real cities. While you are looking, you might as well also listen, linger and think about what you see." Studying public life is an exercise in simple observation, but tools for looking at people had to be borrowed from sociologists because people's use of cities had been overlooked by urban planning for decades. Luckily, walking around a city with open eyes and minds is simple and cheap while also providing interesting insight about the interaction between public life and public spaces. You just have to get out and walk.

Somerville residents love small, intimate green spaces, being active, and seeing other people

In May of 2015, Gehl Studio, the U.S. office of Gehl Architects of Copenhagen, Denmark was hired by the City of Somerville to conduct the city's first Public Space, Public Life Survey. Their first exercise was to ask Somerville residents about their favorite places in the city. Over 41% of the respondents (the largest single group) were from Union Square. By asking people to share what they love and what leads them to have a great experience in a place, design principles and guidelines could be established to inform new development.

In general, Somerville residents love small, intimate green spaces, being active, and seeing other people. When asked to describe their most favored spaces and the features that make them want to spend time in a place, more than 10% of respondents identified qualities such as other people, nature and greenery, food, peace and quiet, recreation, kid friendliness, beauty/design, and arts and culture. When asked to identify actual favorite spaces, Prospect Hill Park ranked 3rd in the entire city, the main plaza in Union Square 5th, and even the courtyard at Bloc 11 came in 7th. With the help of over 50 volunteers, Gehl Studio observed public life as in unfolded over the

FACING RIGHT: Six civic space types most likely for new development in the Union Square plan area

course of both the weekday and weekend in Somerville. Pedestrian and cyclist counts were collected at 23 locations throughout the City and staying activities (i.e. standing and sitting) were documented in nine public spaces.

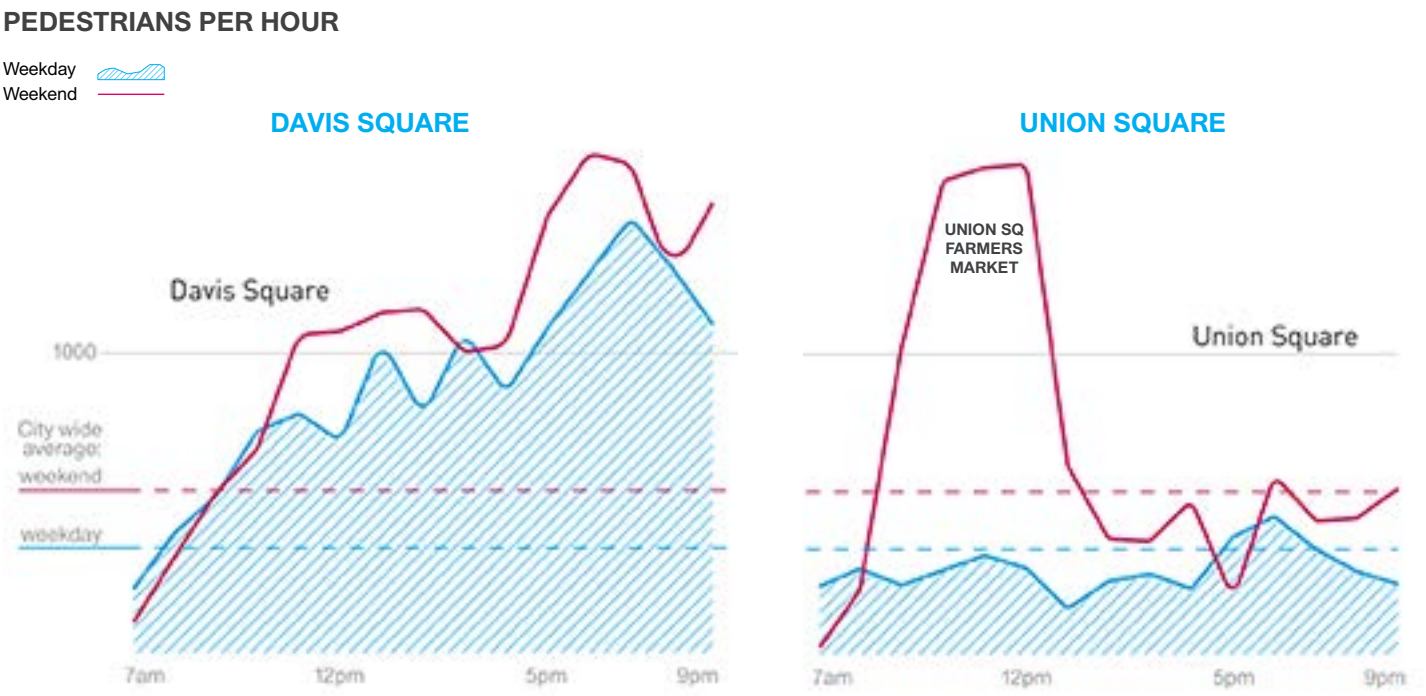
Ask any resident about Union Square and they will tell you its one of the liveliest places, but pedestrian volumes tell a different story. During the weekday, Union Square's pedestrian volume is lower than Somerville city wide average, except during evening commute times. On the weekends, many people are attracted to the core for events like the Farmer's Market, but the square loses this energy when events end. A strong daytime population of employees will go a long way to changing this.

A different story is revealed when comparing how the plazas in Davis Square and Union Square are used. Both plazas have about the same average number of people throughout the day, but during the farmers market Union's plaza becomes the most heavily used public space in the city. Even after the market is closed, activity on the plaza might calm down - but it remains at levels similar to those seen in Davis. These findings help us understand that the public life of Union Square is heavily focused on the main plaza and the businesses that front onto it. When compared to other active places, street life is lower than would be expected for a place most recognize as a walkers paradise.

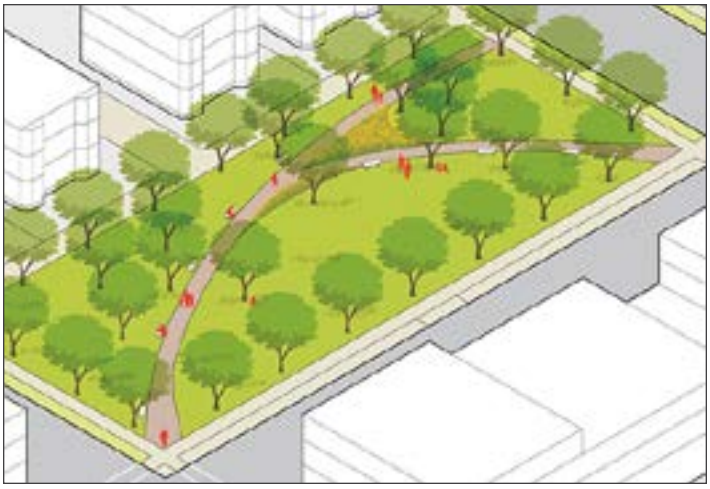
Understanding Civic Space Types

The Mayor's Office of Strategic Planning & Community Development has recently developed a new system for planning and regulating the creation of public spaces within the city. To create this new system, planners identified the characteristics that make spaces different from one another and then built a typological menu of spaces that meet different community needs. Additionally, the term 'civic space' was chosen to name the system because it identifies the important role that public spaces play in community building.

The identification of different 'civic space types' is based on three categories of spaces. First, three types of spaces were identified based on their scale and the anticipated area they draw their users from: regional park, community park, and neighborhood park. These spaces facilitate any wide variety of activities and each can be thought of as a 'mixed-use' open space that meets the needs of a variety of people. Next, a series of

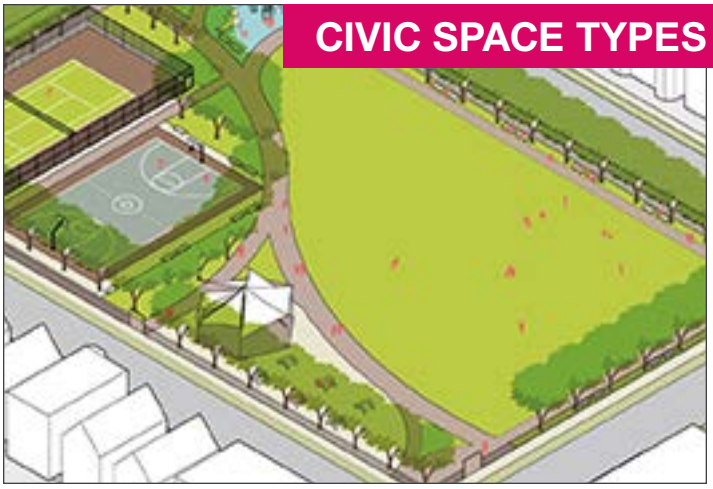


CIVIC SPACE TYPES



GREEN

- Passive recreation
- 70% landscape; primarily green space with lawns, planting beds, walking paths, & trees



NEIGHBORHOOD PARK

- Active and passive recreation
- 50% landscape; features and facilities support the immediate neighborhood

PLAZA

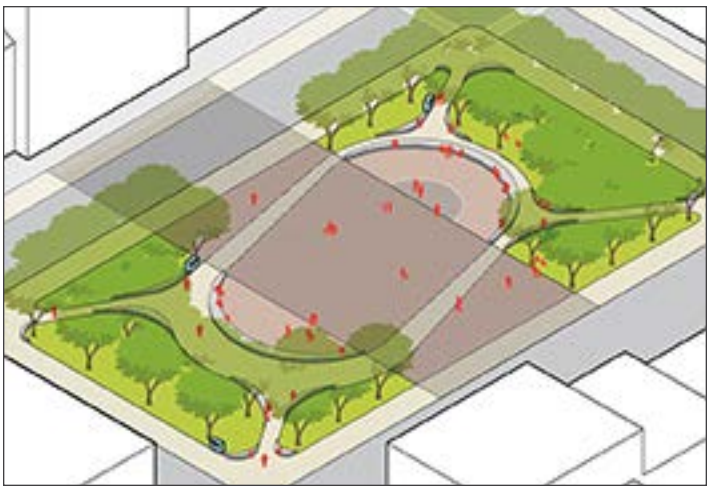
- Passive recreation, civic purposes, commercial activities
- 10% landscape; primarily permeable pavers

POCKET PARK

- Passive recreation
- 30% landscape; primarily vegetation and places to sit outdoors

RECREATION FIELDS

- Active recreation, athletic activity, and competitive sports
- Landscape determined by activity type



PUBLIC SQUARE

- Passive recreation and civic purposes
- 60% landscape; formally disposed lawns, paths, and trees

SOMERVISION

B.V.B.3.
Create a great civic space in Union Square.

spaces were identified primarily based on their urban design differences: public common, public square, plaza, green, and pocket park. These spaces have different characteristics in relation to the street and block pattern of the city. Each of these types are generally designed for a few activities, although single use versions do exist. Lastly, a number of spaces were identified that are designed for just one activity: recreation fields, playgrounds, dog parks, landmarks, community gardens, and urban farms.

Together, these civic space types accommodate different needs in different ways, which provides the City with a flexible system that not only ensures the high quality design of each type, but also permits easy calibration to produce the appropriate types of spaces in different areas of the city to meet different community needs. Requirements for each type include specific development standards and design guidelines to ensure quality design and an appropriate amount of seating and landscaping is provided for each different type of space.

Not all public spaces are created equal. Larger is not always better, as small parks provide wonderful assets for a community if properly designed, programmed, and maintained. Union Square should have a greater number of public spaces strategically located throughout the neighborhood to create a denser network of parks, squares, playgrounds, gardens, farms, and pocket parks. Uses and activities in these spaces should match the needs of local residents. It is also important to ensure new spaces are created that fill in the gaps, resulting in a diverse network of public spaces throughout the neighborhood.

Creating Public Space

Public spaces serve many different needs, including areas for active and passive recreation, hosts to community and civic gatherings, places that foster exchange or even places to help us unwind from modern urban life. An inherent advantage to public spaces serving these different purposes is that they can also be created in a number of different ways and their design and construction funded through a number of different sources.

REGULATING FOR NEW SPACES

Each redevelopment site in the Union Square plan area is an opportunity to build new public space. With a 15% usable open space requirement, the D Parcels would contribute about two acres of new public space as they redevelop over time. However, not every D Parcel will produce a properly sized public space. Although small spaces can add up toward achieving our goal, they are more successful when designed and built by the City. Additionally, larger public spaces provide better quality and meet community needs better than a dozen spaces that are each too small to accommodate more than one purpose. Redevelopment on sites like the D Parcels will need the ability to consolidate and redirect their required usable open space from individual 'sending sites' to one or more 'receiving sites' within close proximity. This will allow more moderately sized, higher quality spaces to be built.

Applying a similar zoning requirement to transformational areas would account for an additional 3.0 acres in Boynton Yards and 2.7 acres in 'Milk Square' (a placeholder name for the land area around the intersection of Somerville Avenue and McGrath Highway). This results in 7.7 acres of new public space in total from private redevelopment. As this example shows, achieving SomerVision's goal for 125 acres of new public space will not be achieved through zoning alone and will require an innovative approach to meet expectations.

Recommendations

- Establish Civic Space Types in the Somerville Zoning Ordinance, with different design standards for each different type of space.

  ORDINANCE

- Establish a 15% usable open space requirement for the D Parcels in the Somerville Zoning Ordinance.

  ORDINANCE

- Preserve the Concord Avenue Community Space in the D4 Parcel.

  DEVELOPER AGREEMENT

- Consider allowing required usable open space for the D-Parcels to be consolidated and relocated from individual 'sending sites' to one or more 'receiving sites'.

- Require 15% of the land in transformational areas to be designed as civic space in the Somerville Zoning Ordinance.

- Require transformational areas to provide at least two types of civic space and prioritize the creation of spaces with a high percentage of landscaping.

LAND PURCHASES AND/OR EASEMENTS

Redevelopment of the D Parcels, Boynton Yards, and Milk Square will help create at least 7.7 acres of new public space, leaving the City to find 7.55 acres through other means. This challenge requires an innovative approach to find various opportunities using existing, and typically overlooked, resources. During the course of the Union Square neighborhood planning process, the team identified at least one site that could be purchased directly for a larger park or recreation fields.

To facilitate construction of the Green Line's Union Square station, the MBTA purchased a 52,826 square foot (1.21 acres) property at 35 Charlestown Street, former site of Community Alternative Residential Environments (CARE) and the Walnut Street Center (WSC), for $5.6 million. A portion of the site is needed to construct a retaining wall, drainage, and an emergency egress ramp for the station. The MBTA also plans to utilize the site as a lay-down yard during construction of the Green Line Extension and the existing building as a MBTA field house.

In August of 2015, the MBTA disclosed that the Green Line Extension project would cost more than $3 billion, approximately $1.08 billion over previous estimates. As a result, Governor Charlie

Privately Owned Public Spaces (POPS)

Privately owned public space refers specifically to private property required to be designed as usable by the public in zoning, as a condition for the rezoning of land, or as a development agreement between a developer and a Redevelopment Authority. This type of requirement or agreement results in publicly accessible spaces that are frequently customized to the proposed development project, site conditions, and location of the property. The public's rights to access and rules regulating the use of these types of spaces differ from site to site. These requirements 'run with the property' and apply to present and future property owners. Most often these spaces are also privately maintained.

M.G.L Chapter 41, §81K-81GG is the Subdivision Control Law of Massachusetts and generally regulates the private layout and construction of streets and the provision of utility and drainage facilities in connection with the division of parcels of land (into buildable lots). Somerville was granted exemption from this law by the Legislature in Chapter 288 of the Act of 1993. Nevertheless, §81Q states that "No rule or regulation shall require, and no planning board shall impose, as a condition for the approval of a plan of a subdivision, that any of the land within said subdivision be dedicated to the public use, or conveyed or released to the [] city or town in which the subdivision is located, for use as a public way, public park or playground, or for any other public purpose, without just compensation to the owner thereof."

Subdivision control differs from zoning, but M.G.L. 41, §81 is not the exclusive means by which subdivision issues may be regulated. Both Boston and Plymouth regulate subdivision type matters in zoning. Regardless of whether or not a municipality is subject to the Subdivision Control Law it appears that these issues can be addressed through zoning, but the extent to which this may be done is not well understood.

As a result, zoning ordinances that require usable open space, publicly beneficial open space, civic space, or any of the other common terms used do not go so far as to require that space to be dedicated to the public. Instead, they typically seek easements, deed restrictions, private covenants or other comparable legal instruments to ensure public access and use of the space.

SOMERVISION

D.III.C.
The City should preserve rights-of-way for auto-free, multi-use paths.

Baker and other officials with MassDOT and the MBTA announced a more conservative budget would be necessary if the project to be done at all. This would require the projects design to stripped down substantially, including transforming most of the stations from enclosed buildings to bare-bones, open-air stations similar to most Green Line stops. Another potential cost could be recouped if Somerville were to purchase 35 Charlestown Street from the MBTA to create a new, and significantly sized, public space. Funding for this purchase could come from a number of sources, including Community Preservation Act funds, municipal bonds, or others. Concept plans for this space, which we called Merriam Street Park, can be seen in Chapter 4 (see page 212).

Another opportunity was discovered during the design charrette in April 2015 when planners decide to walk the Fitchburg rail line through Boynton Yards. If a partnership between the MBTA and property owners in Boynton could be reached, a new length of the Somerville Community Path is possible if properly coordinated between extension of the Green Line and private redevelopment in Boynton Yards.

Together, acquisition of 35 Charlestown Street for a new park and easements from the MBTA and Boynton Yards property owners for a new length of community path would add an additional 3.11 acres of public space to the 7.7 acres contributed by private redevelopment.

Recommendations

- Acquire the 35 Charlestown Street property from the MBTA for a new park.

EXISTING FUNDS

- Secure easements from the MBTA and property owners in Boynton Yards abutting the Fitchburg rail line for a new community path.

DEVELOPER AGREEMENT

GETTING MORE FROM OUR STREETS

Somerville's densely woven urban fabric provides us with limited opportunities and relatively little land area available to build new public spaces. Achieving SomerVision's public space goal require innovative approaches to meet expectations that require us to look at our existing assets with new eyes. The single largest land area available to create new public space in the city is our existing streets and parking areas.

BELOW: Union Square Plaza includes many small design elements that actually discourage the use of the space, such as the raised curbs pictured below

An important step in implementing the City's new Complete Streets Policy (see page 138) is advancing a pedestrian-first hierarchy that puts pedestrians first, then transit riders, cyclists, and motor vehicles. Redesigning our streets as complete streets also involves rethinking what happens at their intersections. Converting redundant, inefficient, or under used street space into people space is one of the most valuable outcomes of the Complete Streets policy and its pedestrian first planning. During the course of the Union Square neighborhood planning process, the design team identified four intersections that could be redesigned to meet the needs of all users equally rather than favoring the automobile. In the process, almost three-quarters of an acre of new plaza space can be reclaimed for people from these intersections. Similarly, existing spaces like Union Square Plaza and Concord Square can be expanded to gain an additional three-quarters of an acre by repurposing underutilized space currently dedicated to automobile parking or

Why Some Public Spaces Fail

William H. Whyte, an early pioneer in the study of human behavior in urban settings, once said, "It is difficult to design a space that will not attract people – what is remarkable is how often this has been accomplished." Today, many public spaces seem to be intentionally designed to be looked at but not touched. Once created, these spaces seem to last forever. Think of Boston City Hall Plaza. Designed in 1962, it's been over 50 years and they're still trying to figure out how to retrofit it.

Location and design are what differentiate good public spaces from bad. Good public spaces are connected to their neighborhood; often times people must walk through them to get to their destination. Public spaces need to be activated by programming or their surroundings. Streets, sidewalks, and ground floor uses should lead people to the space. Frequently first floor uses spill outside. Good public spaces also have a variety of seating. Whyte found that people tended to sit most where there were places to sit. Protection from the elements, especially sun and wind are also important.

Intercultural Urbanism, a website dedicated to an interdisciplinary perspective on urban culture, space, architecture, and design, also notes the need for 'cachet' in public spaces. Cahet is the state of being respected or admired; have prestige or a distinguishing mark in culture. This is produced by a combination of material elements in public space, including the adjacent architecture, that grounds a visitor in the civic culture and history of a neighborhood. This is meant to prompt reflection and conversation.

Therefore, there are a myriad of attributes that can create bad public spaces. Isolated spaces don't have enough foot traffic to be successful. Non-moveable seating that can't be 'claimed' by the user and bench arrangements that don't support social distances are a lost opportunity. Public spaces without shade do not attract people in the hot summer months. A lack of programming can lead to leads to a dead space.

Boston City Hall Plaza should be a successful space because of its unprecedented location and connectivity to the neighborhood, but its other design features override this positive attribute. Whyte found that the most important thing that attracts people to a public space is other people. It's important to hook the first users. When good location and design of public spaces align to create positive conditions, the recipe is success, not failure.

SOMERVISION

D.III.B.
The City should ensure that every transportation project results in improved pedestrian access.

redundant travel lanes. This group of spaces will contribute just over 1.5 acres of new public space.

Streets are an existing, flexible framework that serve as the foundation for building a strong community. When streets are filled with unused or underutilized pavement it limits their ability to support the local community to its fullest. Opportunity exists to re-imagine the 'civic' function, versus the 'traffic' function of our streets. The Union Square plan area might have limited land available to create new public spaces, but by rethinking how streets function they can be enhanced to become part of the network of public spaces themselves. This concept redefines the purpose of our streets as a shared resource of the public realm where travel is just one of the many activities that takes place within the space.

A shared street has a flush grade or surface that is shared by people using all modes of travel at slow speeds. Unlike standard neighborhood or commercial main streets, shared streets have no curbs and the sidewalk is blended with the roadway using pavers or other decorative pavements. Materials can vary and street furnishings like bollards, planters, street lights, and benches can be strategically places to define edges. Shared streets support various uses and allow people to slow down to enjoy the public realm. They function more like a public space than a through-way.

The primary design consideration for a shared street is maintaining slow vehicular speeds below 15 mph to minimize the potential for conflicts. Entrances to shared streets are frequently raised and often narrowed to one lane to force drivers to slow down before entering. If desired, these streets can prohibit personal vehicles, but allow taxis, commercial deliveries, and buses.

Recommendations

- Redesign the major streets of Union Square using a pedestrian-first modal hierarchy to rebalance their design for all users as complete streets.

- Redesign the major intersections of Union Square to use underutilized street space for new plazas.

- Reclaim underutilized space in and around Union Square Plaza and Concord Square to expand those spaces.

- Study the feasibility of converting Bow Street into a shared street.

- Require redevelopment in Boynton Yards to design a portion of the new street network as shared streets in the Somerville Zoning Ordinance.

ADOPT A NEW PROJECT DELIVERY MODEL

We don't always have to wait for a full-blown capital improvement project to experience what repurposed street space could provide to us as new or expanded public space, cycling facilities, and other improvements. The conventional project delivery process for municipalities involves navigating a series of bureaucratic hurdles designed to protect the public dollar, ensure fair hiring practices, and protect public safety. These safeguards exist for obvious reasons after decades of 'good governance' reforms and increased transparency in local government. However, when applied to all projects in a one-size-fits-all manner, they can also stifle efforts to improve our physical environment sooner rather than later.

Cities are learning to adapt to new models as the demand for quality, human scaled, urban neighborhoods increases across the country. Through the use of simple, flexible materials like paint, plastic posts, and planters along with mobile attractions like food trucks and street pianos, cities have experimented with a new project delivery model that allows new ideas to be tried, tested, and learned from to inform a more long-term permanent solution. These aren't 'capital projects' with big budgets, construction documents, and heavy machinery so much as 'quick builds' that use the same materials as maintenance projects - but instead of maintaining things, these interventions change them for the better.

Somerville is already exploring this new territory. In the summer of 2013, the Mayor's Office of Strategic Planning and Community Development

deployed a three day 'pop-up plaza' in the Davis Square parking lot. The demonstration project drew hundreds of people to the space and instigated calls for its permanent installation.

Chapter 4: Development in Union Square (see page 152) includes an interesting example of a quick-build project from a neighborhood in Chicago that correlates well with what can be done in Union Square. Although some intersections in the plan area feature unfortunate medians and traffic islands that inhibit the ability to demonstrate change quickly, there are other locations where this is type of short-term, low-cost action to catalyze long term change is possible.

Recommendations

- Utilize low-cost, short-term pilot projects to demonstrate future possibilities for street redesigns.

PUBLIC INVOLVEMENT IN SPACE DESIGN

The first goal of SomerVision is to involve community members in civic life and decision-making by encouraging volunteer neighborhood-level participation in forums for: discussing local issues, providing opportunities for public input in policy decisions, and implementing a collaborative process for engaging neighbors in the review of development projects.

Today, the Parks and Open Space team of the Transportation & Infrastructure Department of the Mayor's Office of Strategic Planning and Community Development (OSPCD) routinely uses creative placemaking techniques in public space improvement projects and begins each process with robust community engagement. In the future, many of the new public spaces in the Union Square plan area will be created by developers and should utilize community input in the same way that City Staff does to create successful spaces.

When it comes to developer-built public spaces, it is critical that local stakeholders play an active role in the design and programming of public space so that the programmatic needs of the community can be easily identified and incorporated. But, it is also important that these efforts occur early in the process, in order to properly inform landscape architects and engineers before they invest significant effort chasing the wrong goals. Establishing an approach to public space enhancements that begins with placemaking will ensure that private investments in new public spaces aligns with expectations to provide the activities and uses that the community wants and needs.

Recommendations

- Require Design Review for any new public space built as a result of redevelopment.

- Establish a cost effective, public engagement methodology for the design and programming of public spaces focused on placemaking.

- Identify the programmatic requirements, activities, uses, and events that each public space will need to accommodate during planning and design phases.

Improving the Pedestrian Realm

For the past century the business of laying out new streets in Somerville appeared complete. In 1993 the City of Somerville submitted a Home Rule petition to the Legislature to be granted an exemption from the Subdivision Control Act (SCA). A 2012 court case states that "the City submitted the petition because of concerns regarding the impact of the SCA on the City's planning goals in the early 1990s, and because the City has little remaining [] space, negating the need for regulations setting standards for new roads and undeveloped land." At that time, the Green Line Extension and the idea to transform the industrial and auto-oriented land uses on the eastern side of the city into completely new transit-oriented neighborhoods was not on everyone's mind. Fast forward over 20 years and SomerVision paints a whole new picture of the city's potential future.

SOMERVISION

C.VI.A.
The City should partner with local neighborhood organizations on the design, programming, and increased volunteer participation in public parks and open spaces.

SOMERVISION

D.III.B.
The City should ensure that every transportation project results in improved pedestrian access.

ENHANCE THE PEDESTRIAN EXPERIENCE

Some of the first new streets in decades were constructed in Assembly Square beginning in 2012. The City's engineers worked closely with Federal Realty, the developer of Assembly Row, to design a new street network of small walkable blocks and streets with ample sidewalks, tight turning radii, frequent street trees, and frequent places to sit. All of this happened without the typical predictability in design that subdivision standards can provide. Although Assembly Row's streets are an example of successful pedestrian-oriented design, many of the other transformational areas of the city will be built by many hands. Their cooperation in building new streets should be led by regulations that ensure each new segment adds up into a network that is greater than the simple sum of its parts.

Other municipalities, including Boston and Plymouth, regulate subdivision type matters in their zoning ordinance. New street standards should be adopted in the Somerville Zoning Ordinance for street types inspired by the designs detailed in this plan. Block size standards should be included to ensure a network of small blocks are created in Union Square and Bonyton Yards that complement the already highly walkable neighborhood that already exists. The zoning ordinance should also identify priority pedestrian streets and require redevelopment abutting those streets to be setback so that sidewalk widths can be increased to accommodate increased pedestrian activity, have active first floor uses, and restrict vehicular access to side streets or the rear of the property.

Somerville's vibrant culture unfolds on a daily basis on our sidewalks and in our public spaces. Businesses across the city routinely approach the Mayor's Office of Strategic Planning and Community Development with an interest to provide 'gifts to the street' - seating and benches, parklets, outdoor cafes, potted plants - that add to the unique character and enhance public life of our city. This interest should be encouraged through a new Street Life ordinance in the municipal code that streamlines the use of out street space for public life enhancements.

Lastly, the City's Neighborhood Streets Reconstruction Program is making our existing sidewalks and curb ramps more accessible to all users, regardless of ability, on a daily basis. The important work of this program should not be overlooked while the construction of new streets in Union Square and Boynton Yards draws our attention.

Recommendations

- Establish street design standards in the Somerville Zoning Ordinance for redevelopment areas.  ORDINANCE
- Establish block size standards in the Somerville Zoning Ordinance for redevelopment areas.  ORDINANCE
- Establish Pedestrian Street standards in the Somerville Zoning Ordinance for street segments where active street life is desired.  ORDINANCE
- Adopt a Street Life Ordinance in the City's Municipal Code that streamlines the use of the right-of-way for public life enhancements.  ORDINANCE
- Continue the Neighborhood Street Reconstruction Program to repair priority sidewalks and curb ramps in the plan area.  CAPITAL PROJECTS

REMEMBER OUR ELDERS

Between now and 2031, an average of 10,000 baby boomers will turn 65 every day in the United States. The 2013 U.S. Census estimates Somerville's seniors are 9.1% of the City's population, with an additional 12.7% turning 65 in the next 15 years. Somerville already strives to be a great place to live, work, play, and raise a family, but, it will also need to be a great place to retire.

As an ever-increasing portion of the population is seeing retirement age, we will need to change the way we think about seniors. Ensuring that Union Square is a friendlier place to grow old is sound economic development strategy. The American Association of Retired Persons (AARP) estimates that the portion of the U.S. population

SOMERVISION

D.IV.B.
The City should continuously strive to increase safety for all users on its roadways.

over 50 years old has significant economic power, controlling over half of the country's discretionary spending.

A physical and social environment that permits aging residents to participate in daily life helps them to flourish further into later years. In contrast, physical and mental health is liable to deteriorate under the isolation that can result from the self-imposed house arrest that becomes the only alternative to a public realm considered inhospitable by seniors. A well-designed Union Square can be more sensitive to the physical and social needs of seniors, and ensure their active participation in daily life of the neighborhood.

When asked how the outside world could be improved to better address their needs, seniors routinely call for public realm improvements that many of us simply take for granted. The average adult can cross the street at about four feet per second, but older residents typically walk at three feet per second or less. Simply re-timing crossing times at key intersections can have an immense impact on the perception of safety by seniors walking on neighborhood streets. Similar requests include more frequently located street seats and benches, curb ramps without corner puddles that make travel by walkers and wheelchair users complicated, and shelters and seating at bus stops, not only for weather protection, but also to encourage social interaction.

Recommendations

- Recalibrate pedestrian crossing times to three feet per second for all signalized intersections in the Union Square plan area.

  CAPITAL PROJECTS

- Expand the scope of the Neighborhood Street Reconstruction Program to include improvements for seniors.

  CAPITAL PROJECTS

- Consider the needs of seniors in streetscape design projects, paying particular attention to providing inviting places to sit.

  POLICY/ PROGRAM

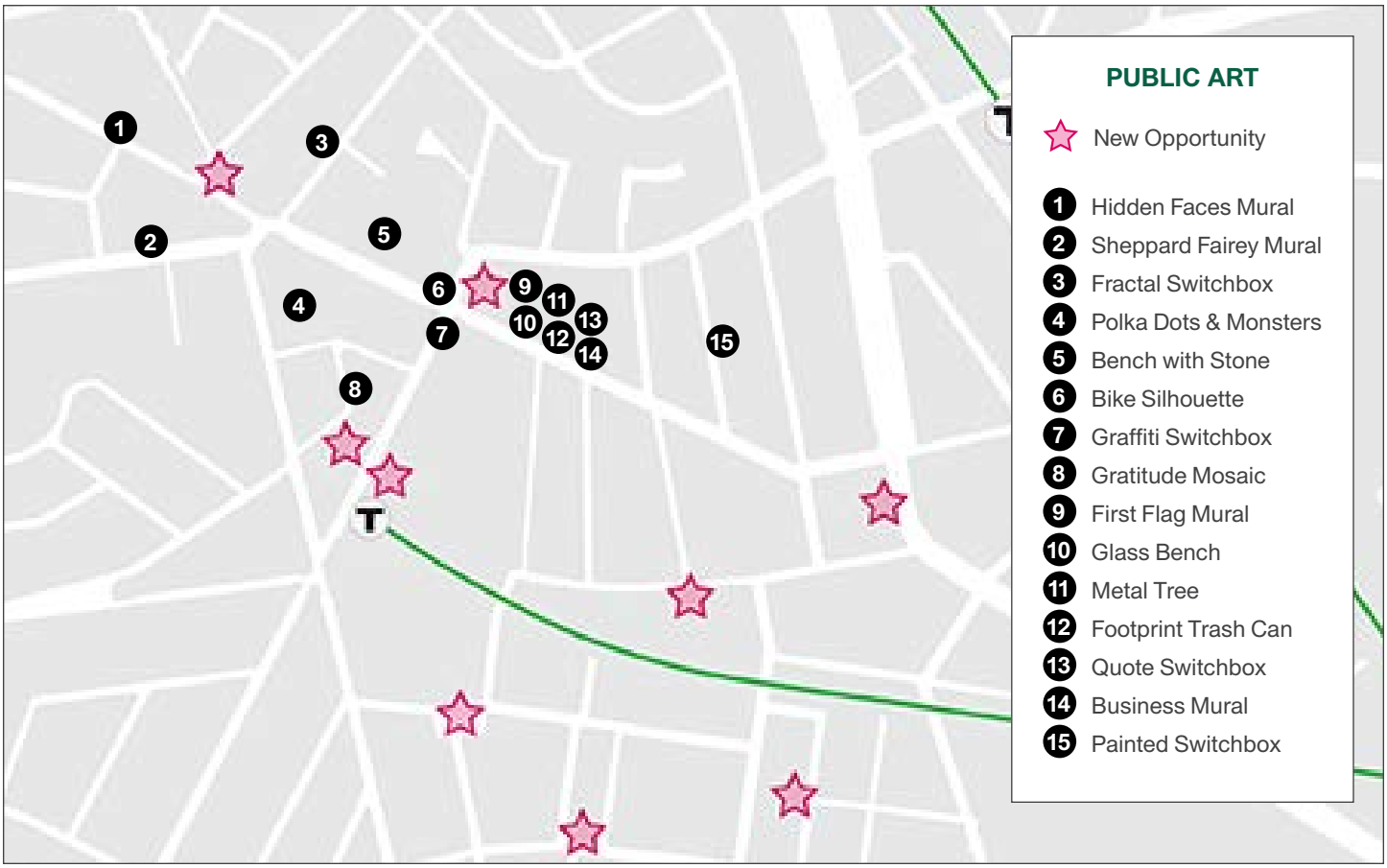
SOMERVISION

ADD ART TO THE PUBLIC REALM

C.II.B.
The City should integrate arts awareness into its development and planning efforts.

Somerville's creative economy is a core part of the community identity. Our arts community ranges from hobbyists to professionals whose works are celebrated around the country. Workshops, galleries, and studios are scattered throughout the Union Square neighborhood. Long-running events like ArtBeat and Somerville Open Studios are a source of community pride. In 2011, Somerville Open Studios became the largest one-weekend open studios in the entire country with over 390 participants. Only New York City has more artists per capita than Somerville.

Today, Somerville has a robust artist community despite severe limitations in City funding for staffing, events, research, marketing, technical assistance and commissions. As the City continues to grow its tax base, its financial commitment to the arts should also grow. This commitment can exist in a number of forms. First and foremost, the new Green Line Station should incorporate public art designed and built by a local Somerville artist. Local artists should also be commissioned by the City to design street furniture, signage, and other public furnishings that can contribute to the character of the neighborhood as part of new permanent street improvements. The tradition of public murals on buildings and infrastructure in Union Square should be supported by a dedicated Mural Arts Program similar to Philadelphia's. Each new public space and terminated street in Union Sure should be recognized as an opportunity to incorporate art into the public realm in a formal manner. The Eversource substation near the intersection of Prospect and Webster should be surrounded by a showpiece welcoming transit riders to the Square instead of the chain link fence that exists today, Lastly, the City should consider dedicating 1% of the annual capital improvement budget to funding public art.



Recommendations

- Partner with the MBTA and MassDOT to plan, design, and install Somerville-sourced art installations at Union Square station.

POLICY/ PROGRAM

- Release a Request for Information (RFI) to learn what public realm furnishings and features could be designed and fabricated by local vendors.

POLICY/ PROGRAM

- Establish a Mural Arts Program to fund the creation and maintenance of murals in Union Square.

TAX FUNDED

- Include public art installations in the new public spaces created in Union Square.

DEVELOPER AGREEMENT

- Collaborate with Eversource to screen the electric distribution substation on Prospect Street with public art.

CAPITAL PROJECTS

- Consider dedicating 1% of the annual Capital Improvement Plan for Public Art.

CAPITAL PROJECTS

SOMERVISION

C.II.C

The City should incorporate arts and creativity into public infrastructure recognizing the links between the arts and environmental awareness

BELOW: A highly visible public art installation along the bridge's sidewalk can both screen the Eversource substation while also calling attention to Union Square's vibrant arts community.

A Vision for Housing

Ensuring Attainable Options Remain in the Neighborhood

This section explores a vision for the construction of new housing in the Union Square plan area. First, we review where we are today and where the housing market is taking us as the future unfolds based on two housing studies recently completed. Following that analysis, this section establishes area-wide housing goals, along with more detailed objectives for inclusionary housing, naturally occurring housing affordability, and family housing.

SomerVision's Housing Targets

SomerVision includes a set of aspirational targets for economic development, housing construction, and open space improvement, along with guidance on how people should travel and where development should occur within the city. The target for housing construction is for 6,000 new housing units by 2030, with 1,200 of those units being deed-restricted affordable housing.

The City's Special Permit database is the best resource available on housing construction citywide. From January 2010 to December 2015 special permits were issued for 1,564 units, 370 of which are considered affordable under the city's Inclusionary Zoning Ordinance. The Mayor's Office of Strategic Planning and Community Development (OSPCD) estimates a total of 2,000 units have been permitted by-right or by Special Permit by spring 2016, which is 33% of SomerVision's target for housing development.

Existing Housing in the Plan Area

OSPCD generated the following housing statistics for the Union Square plan area using information available from the Somerville Assessors Office, the U.S. Census Bureau, and the recently completed Housing Needs Assessment.

EXISTING HOUSING STATISTICS

Renter Households	4,746 (80%)
Homeowner Households	1,191 (20%)
Average Family Household Size	2.8
Average Non-Family Household Size	1.7
Affordable Rental Units	429
Affordable Ownership Units	44
Single Unit/Condos by Bedroom	(1436)
• Studio/One-Bedroom Units	275
• Two-Bedroom Units	640
• Three-Bedroom Units	349
• Four+ Bedroom Units	172

Somerville's Housing Market

The City of Somerville recently completed a number of research studies to determine the demand for both new market rate housing and deed restricted affordable housing in the City. Each of these studies is summarized below.

MARKET-RATE HOUSING STUDY (ZVA)

To estimate the demand for market-rate housing in Somerville, the City hired Zimmerman/Volk Associates (ZVA), a firm that uses migration patterns and the housing preferences and economic capabilities of potential future households to determine the depth and breadth of the market for housing within a municipality. ZVA provided the City with an estimate of the number of households in the market for new or existing housing each year over the next five years and low, moderate, and high absorption scenarios that estimate the number of those households that might actually move to Somerville.

According to ZVA's methodology, there are 10,950 households interested in new and existing housing within the City each year over the next five years. Of these almost 11,000 households, 4,330 have incomes at or above 110% of the Boston-Cambridge-Quincy, MA-NH area median family income (AMI), a threshold likely qualifying them to potentially rent or purchase market-rate housing. This level of income also disqualifies them from any type of deed-restricted affordable housing according to current local regulations.

ZVA developed three absorption scenarios to estimate how many of the almost 4,500 household that make over 110% AMI might actually be expected to move to Somerville on an annual basis (a 'capture rate'). For new market rate for-sale housing, the capture rates range from 10% for low; 15% for medium; and 20% for high and for new market rate rental housing the capture rates range from 15% for low; 20% for moderate; and 25% for high. On an annual basis, using these capture

rates, between 543 (low), 759 (moderate), 975 (high) new households could purchase or rent new and existing housing each year in the City of Somerville. Thus, the demand for market-rate housing ranges from 2,715 to 4,875 units over just the next five years.

The demand for market-rate housing ranges from 2,715 to 4,875 units over just the next five years.

ZVA stresses that this type of analysis should be updated every five years as the migration patterns, housing preferences, and economic conditions that impact the demand for housing change over time. However, by extrapolating these absorption numbers through 2030, the demand for market-rate housing in Somerville ranges from anywhere between 8,145 to 14,625 units within SomerVision's time frame. Some of this demand will be met through the construction of new housing, but the remainder will compete for existing housing that comes onto the market, driving up prices.

ZVA's analysis draws upon data from the Internal Revenue Service to project how future migration patterns will impact the demand for housing. This data set also provides insight into the life stage, economic capability, and housing preferences of the households representing the market for housing. According to ZVA's findings, 2,185 (50%) of these households are looking for multi-unit rentals, 960 (22%) for multi-unit condos, 815 (19%) for a unit in a typical Somerville house or triple decker, and 370 (9%) for a single-unit cottage or house.

Additionally, about 3,330 (76%) of these households are currently singles or childless couples, 620 (14%) family-oriented households, and about 400 empty nesters & retirees. Below is table summarizing these findings for multi-unit rentals and condos, the principal housing types that will be created by new development in the plan area.

Multi-Unit Rentals	**2,185**
• Singles & Childless Couples	1,915
• Family-oriented Households	155
• Empty Nesters & Retirees	115
Multi-Unit Condos	**960**
• Singles & Childless Couples	740
• Family-oriented Households	60
• Empty Nesters & Retirees	160

HOUSING NEEDS ASSESSMENT (LDS)

In August 2015, the City of Somerville hired LDS Consulting Group (LDS), a comprehensive real estate advisory firm, to identify the supply and demand for affordable housing within Somerville. This type of housing analysis is called a Housing Needs Assessment and is crucial to balancing the production of affordable housing with actual demonstrated need.

To complete the assessment, LDS catalogued the full supply of affordable housing units within the city, as well as the supply of market rate two-bedroom rentals, two-bedroom condominiums, and three-bedroom homes available for purchase, and compared that supply to available Census data on existing Somerville households.

A key component to researching the supply and demand of affordable housing is understanding how much a household can afford to pay without becoming cost-burdened. A household is considered 'cost burdened' by the U.S. Department of Housing and Urban Development (HUD) when they pay more than 30% of their gross income on housing costs. Since 30% of income is different for every household, researchers categorize households into groups earning certain percentages of a region's area median income (AMI) to determine what they can afford to pay. HUD identifies Somerville's region as the Boston-Cambridge-Quincy, MA-NH HUD Metro FMR Area and in 2015, the AMI was set as $95,400. According to LDS's analysis, there are 7,649 existing Somerville renter households with an annual income at or below 80% AMI that do not currently reside in a deed-restricted affordable housing unit. When considering households earning up to 110% of AMI, the number of existing Somerville renter households without access to a

SOMERVISION

E.II.A.
The City should facilitate the development of additional housing in close proximity to transit stations.

E.I.C.
The City should encourage the development and preservation of rental housing throughout Somerville to maintain a balance between rental and home-ownership units tied to the Housing Needs Assessment.

SOMERVISION

C.III.A.
The City should encourage preservation of affordability, especially in the vicinity of transit stations.

deed-restricted affordable housing unit increases dramatically to 12,709. Affordable Housing standards in the Somerville Zoning Ordinance allow households with an income at or below 80% AMI to apply for a deed-restricted affordable housing unit, but there are no programs to create affordable housing for renter households earning over 80% of AMI.

Not all of these almost 13,000 existing renter households are cost-burdened and some are currently renting non-deed restricted housing that was offered at an affordable price in the rental market. However, LDS did find that 8,114 of Somerville's renter households are cost-burdened, representing 38.7% of all renter households. Furthermore, 73.8% of Somerville's existing renter households cannot afford the $2,384 average monthly rent of apartments rented in the last year. The average price of an apartment rented over the last year would require an annual household income of $95,360 to be affordable, which is 1.62 times the median income of current renter households in Somerville ($58,510). This means that when a Somerville renter household finds themselves having to leave their existing apartment, the rental housing in the city becomes stunningly unaffordable.

This challenge is felt most acutely in Union Square, which has not only the highest number of renter households (4,746), but also the highest number of cost-burdened renters in the city. A total of 1,720 renters in Union Square are cost-burdened, with 20.6% paying 30-50% of their income and 15.5% paying over 50% of their income toward housing costs. Additionally, Union Square has seen 15.5% of the city's 815 rental units that were converted to condominiums between the beginning of 2010 and August 2015, behind only Davis Square and Spring Hill.

Unfortunately, the cost-burdened households remains incomplete because it is not cross-referenced with household incomes. For example, a renter household earning $124,000 (130% AMI) could also be paying more than 50% of their income to housing costs. However, this household has much more ability to change their circumstances than a household earning just $48,000 (50% AMI) because they have a total income that gives them access to a much broader supply of housing.

Setting New Housing Goals

Redevelopment efforts in the plan area are focused on positioning the area to become a new Urban Employment Center (see page 45). Although this plan prioritizes planning for new office and laboratory buildings, the desperate need for new housing was not forgotten. Chapter 2: Community Driven Planning establishes a goal for 2,350 new units of housing within the Union Square plan area, with 1,320 new units in Union Square and 1,030 new units Boynton Yards. This housing goal represents 39% of SomerVision's goal for 6,000 new housing units and 59% of the remaining need after accounting for housing built or permitted between 2010 and 2016. This target also addresses 54% of the total demand for new or existing housing and 75% of the demand for multi-unit rentals or condos estimated by ZVA for the next five years.

HOUSING DEVELOPMENT SUMMARY

Total New Units	**2,350**
• Union Square	1,320
• Boynton Yards	1,030
• Affordable Units (20%)	470
Tenure Type Targets	
• Multi-Unit Rental (70%)	1,645
• Multi-Unit Condo (30%)	705
Family Housing Targets	
• 3+ Bedroom Units (min)	160

Somerville is currently experiencing a boom in new construction on a scale not seen in decades. For years it has been referred to as the densest city in New England, but some believe Somerville might be the densest example of detached houses in the world. The 2013 U.S. Census estimated that Somerville had 33,720 housing units, with about 85% of those being in multi-unit houses and triple deckers. Of the more than 17,000 lots across the city, less than 140 apartment buildings exist in total. Herein lies the problem: Somerville has a lot of housing, but very little housing diversity.

The regional need for new housing far exceeds the available supply - and most of that demand is

for smaller units located near transit. Although Somerville alone cannot solve the region's demand for housing, a constrained supply leads to higher prices locally when property owners increase asking prices to match the purchasing power of the households making up that demand. When there are limited opportunities to build new housing to absorb this demand, a lack of diversity in the existing housing stock can have severe negative impacts on the health of the community.

Somerville has a lot of housing, but very little housing diversity.

A low supply of available units encourages property owners to either divide larger, multi-bedroom units into smaller apartments or to gut rehab existing units to luxury finishes that cater to the preferences of the market. This reduces the supply of what some call 'naturally occurring affordable housing' — units that are dated in design, undersized, not up to code, or functionally obsolete and therefore lower in cost. Others simply call these units charming older housing, but for many people, these units are why they can afford to live in Somerville. Condo conversions, house flipping, and residential conversions of large units into multiple smaller units may improve the existing housing stock, but all contribute to the further reduction of price diversity. These trends are not easy to stop. Without a concerted effort to address the demand for new housing, the price of existing units will also increase relative to the few new units that are built or renovated — even if it's charming old housing.

Today, Somerville and much of greater Boston finds itself in a situation where even middle income singles and young couples find themselves living with roommates just to afford housing costs. The problem is further exacerbated when that housing has three or more bedrooms because ever-increasing prices make larger units out of reach for all but the top income earning households, including families. To re-balance the housing market, developers must be able to introduce the types, sizes, and prices of housing that are missing from the existing mix. Only then can people truly select the housing that meets their needs at different stages of their lives.

Housing diversity is a key ingredient to the diverse community that Somerville always strives to be. When a city has an appropriate mix of housing types, sizes, and prices it provides convenient access, increased privacy, and opportunity for all kinds of households to remain a part of the community as they age. A diverse housing stock allows households to transition from one type to another within the same community as their needs change over time. Having a home that provides an enriching environment that is also properly sized and doesn't break the bank permits investment and attachment to the community while also increasing neighborhood stability and long-term social connections. Diverse living options provide those that were born here, or that choose to live here at any time, the ability to stay throughout their adult years, strengthening the local economy as a result.

Affordable Housing

In October 2014, Mayor Curtatone launched the comprehensive Sustainable Neighborhoods affordable housing initiative to broaden and deepen the City's efforts to maintain affordability for the people and families that have chosen to live in Somerville. Designed to address affordability from all angles and across all needed income brackets, the Sustainable Neighborhoods initiative recommends that the City:

- Partner with the Somerville Community Corporation to purchase and reposition 100 Homes as affordable housing available to households with a range of incomes
- Amend Inclusionary Zoning to both increase the number of affordable units that must be created alongside market rate units and broaden the reach of the ordinance to include workforce housing for middle income households
- Require the creation of multi-bedroom affordable units in larger redevelopment projects
- Petition the State Legislature for the ability to institute a real estate transfer tax, with revenues raised by that fee dedicated solely

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The City should adopt programs and regulations to increase affordable housing, in part through additional housing creation.

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toward the creation of more affordable housing
- Reconvene the SomerVision Steering Committee to review and revise the housing goals in the City's Comprehensive Plan
- Hold a design competition for innovative design solutions for modern affordable family housing using City-owned surplus property

EXPANDING INCLUSIONARY ZONING

The need for additional affordable housing in Somerville has never been more apparent than now. How many deed-restricted Affordable Dwelling Units (ADUs) can and should be created in Union Square? This is a complicated question that requires analysis of the existing amount of permanent or long-term affordable housing in the neighborhood, the number of below-market households, and the number of cost-burdened households in the city. The recently completed Housing Needs Assessment (HNA) addresses these questions.

According to LDS's research, the Union Square plan area currently has the following supply of deed-restricted Affordable Housing:

Rental	**429 Units**
30% AMI	370 Units
50% AMI	7 Units
60% AMI	51 Units
80% AMI	1 Unit
Ownership	**44 Units**
80% AMI	23 Units
110% AMI	21 Units

LDS researched incomes above the standard thresholds used in Inclusionary Zoning for the 2015 HNA to address City desires to expand the scope of Inclusionary Zoning to produce workforce housing for moderate- and middle-income households. Households earning moderate and middle incomes are often overlooked by needs assessments because current income limits in Inclusionary Zoning disqualify them from renting or purchasing an affordable unit (see *How Does Inclusionary Zoning Work* below). However, just because they earn higher incomes than what current regulations stipulate does not mean these households have access to housing without becoming cost-burdened. Including these households in the analysis allowed LDS to determine the additional demand for affordably priced housing brought on by households normally stuck in the affordability gap between deed-restricted affordable housing and new market rate units.

The number of existing Somerville renter households with an annual income between 30-110% of AMI that do not have access to an existing deed-restricted affordable unit is 10,477 (50% of the 20,947 renter households in Somerville). The number of existing Somerville home-owners with an annual income between 60-170% of AMI that do not have access to an existing deed-restricted affordable unit is 4,880 (43% of the 11,239 home-owner households in Somerville). These households are broken down by income as follows:

Renter Households	
30-50% AMI	2,949 (28% of total)
50-80% AMI	2,468 (24% of total)
80-110% AMI	5,060 (48% of total)
Home-Owner Households	
60-80% AMI	541 (11% of total)
80-110% AMI	2,091 (43% of total)
110-170% AMI	2,248 (46% of total)

Currently, inclusionary zoning produces rental units for households earning up to 50% and 80% of AMI. However, the largest percentage of existing Somerville households without access to an existing deed-restricted affordable unit is the 80%-110% AMI bracket (5,060 households). The inclusionary zoning requirements in the Somerville Zoning Ordinance do not produce any affordable units for these households. If left in place as is, these current requirements will fail to produce the deed restricted workforce housing for moderate and middle income residents desired by many.

An additional challenge embedded with the inclusionary zoning requirements in their current form is that affordable units created are evenly split between the two income thresholds (50% and 80% for rentals). As mentioned previously, the number of existing Somerville renter households with an annual income below 110% of AMI that do not have access to an existing deed-restricted

affordable unit includes over 60% of renters in the city – which a large majority earning 80-110% AMI. This imbalance between the need of existing households and the way that affordable housing produced through inclusionary zoning needs to be addressed if the objective of the Sustainable Neighborhood Initiative ito maintain affordability for the people and families that have chosen to live in Somerville is going to be achieved. One thing to consider in making this adjustment is that a household earning 50% of AMI that pays 30% of their income for rent has significantly less financial resources left over than a household earning 110% of AMI after paying rent. For this reason, any adjustment to the way affordable units are broken down for the various income groups should be weighted to favor the lesser incomes, while still addressing some of the demand from the moderate income tier.

This plan sets a target for the construction of 2,350 new units housing units in multi-unit buildings, with 470 of those being permanently affordable. However, existing Inclusionary Zoning requirements for zoning districts in the Union Square plan area require only 12.5% to 17.5% of new housing development to be affordable. If left in place as is, these current requirements will fail to meet expectations on its own.

Lastly, the Union Square plan area has the highest number of renter households (4,746), but also the highest number of cost-burdened renters in the city. Households that are paying more than 30% of their income towards rent are considered rent-burdened while severely rent-burdened

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The City should adopt programs and regulations to increase affordable housing, in part through additional housing creation.

How Does Inclusionary Zoning Work?

Inclusionary zoning is a zoning regulation requiring a certain percentage of new housing to be priced so that it is affordable to households unable to pay market-rate prices. Anywhere between 10% to 30% is common practice. Municipalities in the United States use inclusionary zoning to provide housing options that are not available in the free market, although any price control must be used carefully to avoid negative impacts on the supply of housing. The creation of this 'affordable' housing amidst the 'market rate' housing in a neighborhood is the basis for using the term inclusionary.

Affordable housing produced through inclusionary zoning is required to be priced so that households do not pay over 30% of their income toward housing. When households pay over this amount, they are considered cost burdened. Because income differs across households, it is calculated relative to the area median and grouped into categories to determine appropriate prices.

The Area Median Income (AMI) for the Boston-Cambridge-Quincy, MA-NH HUD Metro FMR Area is published annually by the U.S. Department of Housing and Urban Development (HUD). The five commonly recognized incomes levels are extremely low income (<30% of AMI), very low income (31-50% of AMI), low income (51-80% of AMI), moderate income (81-110% of AMI), and middle income (>110% of AMI). Normally, for-rent inclusionary housing is priced for households earning up to 50% or 80% AMI and for-sale affordable housing is priced for households earning up to 80% or 110% AMI. Many municipalities are now expanding their inclusionary zoning ordinances to produce affordable housing that is priced for 'middle income' households. Although this housing might be available for households earning up to 140% of AMI, it is still well below typical market-rate prices in Somerville.

Inclusionary zoning tends to best serve below-market, but not extremely below-market households. The reduced monthly rent for an inclusionary unit is subsidized by a developer because it effectively makes a building more expensive to construct up front. However, extremely low income renter households frequently need a continuous monthly subsidy from the Affordable Housing Trust Fund or other public sources to pay the rent because their income is so restricted. Public subsidy programs just don't have enough capital to support an ever increasing inventory of inclusionary units priced for extremely low income households. There are simply not enough vouchers to go around. A similar challenge exists in requiring for-sale affordable housing at the low income level because mortgage requirements demand greater financial stability than these households can demonstrate - steady, well-paying jobs and strong credit ratings. With these limits to its functionality, inclusionary zoning should be understood as one of many programs that make up a complementary package of affordable housing tools.

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households are those paying more than 50% of their income towards rent.

Total Renter-Occupied Units	**4,746**
Total Rent Burdened Households	1,720 (36.3%)
• Rent-Burdened	985 (20.8%)
• Severely Rent-Burdened	735 (15.5%)

Currently, the Housing Division of the Mayor's Office of Strategic Planning and Community Development gives preference to people who live or work in Somerville that are waiting for new affordable housing units to come available. Although the finances of every household applying for affordable housing are reviewed to ensure the new unit does not cause them to become cost-burdened, consideration to the existing living condition of these households could also be referenced. This additional consideration would help assist in bringing the most threatened households, those that are severely rent burdened, out from under their financially stressed living condition.

Recommendations

- Increase the Inclusionary Zoning percentage to 20% for new development within 1/4 mile of the future Union Square station. ORDINANCE
- Expand the scope of Inclusionary Zoning to produce units priced for moderate and middle income households (ie. workforce housing). ORDINANCE
- Set the price requirements for newly built affordable housing to better match the needs of existing Somerville residents identified in the Housing Needs Assessment. ORDINANCE
- Consider giving preference to Union Square renters that are severely cost-burdened when selecting a household for City-managed inclusionary housing units. ORDINANCE

PRIORITIZE ON-SITE ADU'S

Requiring inclusionary housing to be provided as on-site units is the most successful way to integrate lower-income households into neighborhoods and improve their economic opportunities. Policies designed to encourage economic integration improve outcomes for lower-income children because the poverty rate of the neighborhood where a child grows up is a strong predictor of economic mobility when they are adults. Many housing policies seek mixed-income development in the hope that social interactions between lower-income and higher-income residents will lead to better access to jobs or other resources for lower-income residents. However, there is no evidence that lower-income residents benefit from the employment connections or other "social capital" of their higher-income neighbors. Research demonstrating physical and mental health improvements, increased self-esteem and motivation, higher employment rates, and increased earnings attribute all of these benefits to the neighborhood rather than the individual building where they live.

The inclusion of on-site affordable units within market-rate buildings will continue to be the preferred outcome of the City. However, the benefits of including inclusionary units in higher-priced projects decreases because the financial value of a high-end unit is worth so much more than one inclusionary unit of housing. Requirements for inclusionary housing can produce a larger number or even a more appropriate type of affordable units if developers have the option to build units off-site or provide financial capital to a separate development partner.

Concern about the construction of substandard affordable housing in undesirable locations is natural, but there might be opportunities for development in Union Square and Boynton Yards to redirect inclusionary units from a 'sending site' (or even consolidate requirements from multiple 'sending sites') to a 'receiving site' within close proximity and within the neighborhood so that we can better achieve the affordable housing goals.

To be effective, the provision of off-site units should only be permitted when site control can be demonstrated by a developer and the 'receiving site' is located within walking distance to transit. Additionally, restrictions should be put in place to

guarantee the timely construction of the off-site affordable units.

Lastly, in the rare circumstance where the City might accept a payment instead of affordable housing, the dollar value of any payment in-lieu for building on-site affordable housing should be priced to cover the costs of land acquisition, except in circumstances where the outcome is guaranteed to produce a greater benefit to lower-income households. Including the cost of land will set prices high enough to encourage the actual construction of units, rather than paying out instead.

Recommendations

- Prioritize the construction of on-site inclusionary housing units in the Somerville Zoning Ordinance.

- Consider allowing inclusionary housing to be provided off-site by Special Permit in the Somerville Zoning Ordinance.

- Consider allowing a payment in-lieu of providing inclusionary units by Special Permit in the Somerville Zoning Ordinance.

- Include the cost of land acquisition when establishing a payment in-lieu of providing on-site affordable housing.

PRESERVE EXISTING ADUS

Affordable dwelling units produced through zoning and units purpose-built by entities such as the Somerville Housing Authority (SHA) or Somerville Community Corporation (SCC) are either deed-restricted or remain under the control of those organizations. Another form of affordable housing is created through various City grant programs such as the Housing Rehabilitation Program or Lead Hazard Abatement Program that incentivize property owners to improve existing housing stock. Receiving funding is contingent upon providing the property as affordable housing. However, these commitments are temporary and, over the next five years, 285 of these currently affordable units (8.74% of the total) are at risk of losing their subsidy. One hundred and thirty three (133) of these units are located within the Union Square plan area, which is 47% of total expiring units.

Recommendations

- Collaborate with property owners to extend expiring affordability restrictions.

- Monitor the status of properties with temporary affordability restrictions.

Housing for Families

Children are the future renters, home owners, business owners, and workforce of Somerville. Today, the city attracts young singles in numbers, but if Somerville can retain these adults as they decide to form families and raise children the local economy and greater community stand to benefit in profound ways. A city welcoming to children populates itself with parents in their peak earning years, a stable population that makes the city attractive to employers and helps to build the tax base. Families bring different needs and wants than singles and their habits support a diversity that makes the local economy more resilient. Parents of children attending neighborhood schools are also powerful agents in building neighborhood social networks and play an important role in the continuity of community when they decide to stay after their children grow up and form households themselves.

PRODUCE FAMILY-ORIENTED HOUSING

SomerVision calls for residential development to provide a mix of unit sizes and types, including multiple-bedroom units with adequate size for families. Union Square should be a neighborhood that offers something for residents in every stage of life, including children and their parents. Without them, the neighborhood would lack the diversity that SomerVision and the community strive to have.

So, what is a family? Somerville households

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E.IV.A.
The City should undertake efforts to ensure that a range of housing options and services exist so that families and individuals who are homeless or at risk of homelessness can be housed rapidly and successfully.

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include a diverse range of people living together as families. Today, the term 'family' can mean a traditional nuclear family consisting of an adult male and female with one or more children, an extended family containing relatives in addition to the nuclear family, same-sex couples living together with children, single parents (of either gender) with dependent children, cohabitating unmarried couples with children, and even grandparents or other relatives with custody of one or more of a relative's children. Changing attitudes about marriage and marriage equality, childbearing, and the roles of men and women constantly push the definition of the word 'family' into new meanings. Regardless of the individual makeup of one family to another, the one thing that all families need is housing with multiple bedrooms.

Chapter 2: Community Driven Planning establishes a goal for 2,350 new units of housing within the Union Square plan area. This housing goal represents 75% of the demand for multi-unit rentals or condos estimated by ZVA for the next five years. That same level of demand by family oriented households totals 162 units. The need for these units cannot be overlooked as an important aspect of the redevelopment efforts in Union Square and Boynton Yards.

Ensuring that multi-bedroom units suitable for families remain part of the neighborhood can also result from other sources other than new construction. At least two programs were discussed during the Union Square neighborhood planning process that involve existing homeowners taking direct action to ensure that the neighborhoods they love always include housing for families.

First, the City could institute a program that helps the most generous of existing property owners transfer their own multi-bedroom unit to the Somerville Housing Authority or other non-profit housing organization or cooperative to become deed-restricted family housing, contingent upon the current homeowner also being granted a life-long lease that allows them to remain in the home. Second, a separate City program could purchase new market rate one bedroom units and offer to trade those units to existing senior households looking to downsize from a multi-bedroom unit elsewhere in Somerville. Each of these programs would be voluntary and rely on the generosity of existing community members, but could result in a partnership between local government and existing residents to ensure that Somerville remains the type of community where it is possible to raise a family.

Recommendations

- Require the creation of multi-bedroom affordable units in larger redevelopment projects through Inclusionary Zoning.


ORDINANCE

- Seek commitments from developers to build enough multi-bedroom units to achieve the family-housing targets in this plan.


DEVELOPER AGREEMENT

- Support the creation of voluntary programs to allow current Somerville property owners to convert their existing housing into deed family housing


POLICY/ PROGRAM

FAMILY HOUSING IS FOR FAMILIES

To attract and retain families, Somerville must have a quality living environment that is conducive to raising children. Safe streets and good schools play a big part, but the most important challenge is providing housing that is appropriate for families. Preserving detached housing with yards that already exists in Union Square is valuable, but development in transformational areas will produce new housing in larger multi-unit buildings. If this new development includes housing for families, it will need to be designed with the needs of families in mind.

In the early 1990s the City of Vancouver conducted an extensive planning project that resulted in Family Friendly Design Guidelines for new construction. They learned that families were looking for small details that made a world of difference when raising children. They requested features like ground level access, play spaces visible from common areas, family units clustered on the same floors of multi-level buildings, and appliances for washing clothes and dishes.

Providing housing for families not only requires units to have the right design details, but also those units need to be larger, and more reasonably priced than what's typical of most new market-rate housing development. Families of all income levels need family-friendly housing, so it is important to provide housing designed with the diversity of family oriented households in mind.

In an effort to retain and attract families, the City of Toronto began requiring residential development with more than 100 units to provide a certain number of units with three-bedrooms because they are rare in both availability and affordability. However, over time families were not finding their way into the majority of these three bedroom units. Instead, they were being rented by college students or purchased by professionals looking for extra rooms. Despite the best intentions of the three-bedroom mandate, developers have no reason to build these units any larger than required by by building code. Without any design guidance, developers in Toronto were producing 3 bedroom units of just 700 square feet (on average) on the upper floors of very tall buildings. In essence, they were satisfying the requirement by building units that were hardly useful for the intended target of the requirement.

Building a higher-density, mixed-use, transit-oriented neighborhood that is also inclusive of families requires careful attention to detail. In order to fully understand the wants and needs of urban households with children, City Staff should be in close communication with officials from the Somerville School Department and meeting regularly with parents to gather information, that helps us understand how we can make Somerville a better place for raising children.

Recommendations

- Establish Design Guidelines for Family Housing that build upon similar work completed by Vancouver. GUIDELINE
- Adopt minimum floor space requirements for units with 3 or more bedrooms. ORDINANCE
- Seek commitments from developers to restrict the sale or rental of multi-bedroom to family-oriented households. DEVELOPER AGREEMENT

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A Vision for Development

Strengthening the Character of Neighborhood

This section explores a vision for redevelopment in the Union Square plan area. First, we review SomerVision's various objectives for new development. Then we identify where and how to preserve much the existing local center that makes up the core of Union Square. Next, we review the types of buildings expected from new construction and how new development must preserve the human scaled character of the neighborhood, contribute to long term sustainability goals, and improve the legibility and image of the city.

SomerVision's Development Goals

SomerVision includes a set of aspirational targets for economic development, housing construction, and open space improvement, along with guidance on how people should travel and where development should occur within the city. In general, SomerVison calls for 85% of new development to happen within transformational areas of the city. This is best illustrated by the SomerVision Map (see page 35), which identifies Somerville's many traditional residential streets as areas to conserve, our funky squares and commercial main streets as places to enhance, and underutilized areas on the eastern and southern edges of the city as places to transform. Much of Union Square and Boynton Yards are within the transform area of the SomerVision Map.

Redevelopment efforts in Union Square and Boynton Yards are focused on transforming the area into an Urban Employment Center type of station area (see page 45). However, this transformation will be focused on the eastern side of the neighborhood and must go hand in hand with preserving much of the existing local center that is the Union Square we all know and love today.

Honor Our Place in History

Dedication to historic preservation will bind together the past, present, and future in Union Square. Although transformational redevelopment will result in an new urban employment center on the eastern side of Union Square (see page 45), a large component of this plan focuses on preserving and supporting the historic local center that already exists. Renewed interest in Union Square has brought new life to several historic buildings such as the Eberly Building, where Workbar is now located. Others are in need of love and attention before they are lost. These buildings that contribute to the historic character of Union Square as an authentic, living, breathing place that should be maintained, but dependence on the private market alone to honor these buildings will not bring predictable results.

PRESERVE OUR BUILT HERITAGE

Two mechanisms exist to assist the preservation of buildings in Union Square. First, the City can prevent the demolition and protect the exterior features of any building within a Local Historic District (LHD). Establishing a LHD requires a vote of the Board of Aldermen and is based on recommendations provided by the City's Historic Preservation Staff and the Historic Preservation Commission (HPC). Additionally, the City's demolition delay ordinance requires the HPC to review any proposal to demolish a structure that is over 50 years of age. If a building is deemed historically significant and preferably preserved by the HPC, a nine-month demolition delay creates the time necessary to negotiate an effort to save the historic features of the building that were deemed to have historic value.

Another tool for preservation is designation of a property to the National Register of Historic Places. This program is designed to coordinate and support efforts to identify, evaluate, and protect the United States' historic and archeological resources. Properties on the National Register can qualify for federal and state historic rehabilitation tax credits. To be listed, properties must be surveyed and then nominated. Recently, the City secured Community Preservation Act funds to hire a consultant to prepare a National Register nomination for the American Tubeworks complex and survey buildings in the Union Square plan area for potential nomination. When a federal agency funds, permits, or licenses a project in an area where there are National Register properties or archaeological sites, a review process is triggered to assess and potentially mitigate any potential adverse impacts to these historic assets. These two mechanisms bind together the past, present, and future of Somerville.

Recommendations

- Finish surveying Union Square's existing buildings to determine their historical significance.

POLICY/ PROGRAM

- Enact a new Local Historic District to protect buildings contributing to the historical significance of the core of Union Square.

ORDINANCE

ASSIST WITH HISTORIC REHABILITATION

Historic buildings in the core of Union Square need to be cared for, but more importantly they need to remain useful. An empty, unused historic building is one step away from being lost. But the restoration, rehabilitation, and even maintenance of a historic structure can be costly. State and federal tax credit programs can provide significant financial assistance by filing in the gaps that making the rehabilitation of a building financially feasible. Locally, Somerville should also consider establishing a tax stabilization program to further incentivize the reuse and rehabilitation of these contributing buildings.

Recommendations

- Utilize Community Preservation Act funding to help property owners maintain Union Square's historic buildings.

EXISTING FUNDS

- Provide technical assistance to property owners seeking Massachusetts Historic Rehabilitation Tax Credits.

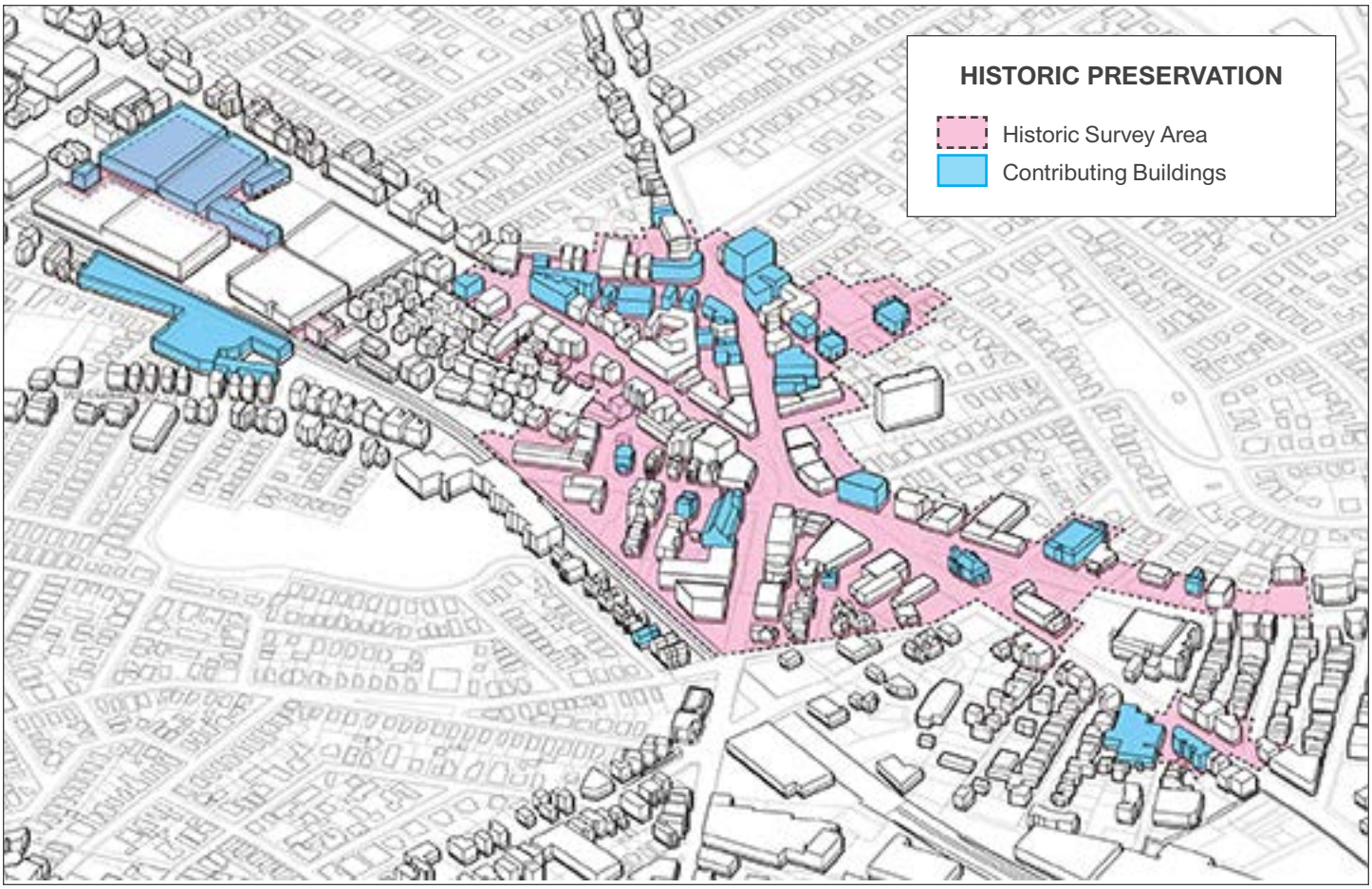
POLICY/ PROGRAM

- Investigate restoring the historic cupolas and steeples of USQ buildings such as St. Joseph's Church and the old fire station (now SCATV).

PUBLIC BENEFIT

SOMERVISION

A.IV.C
The City should continue to protect and preserve its architectural history.



SOMERVISION

A.II.A
The City should establish policies and regulations that support neighborhood development with a strong relationship to transit.

CONTEXT SENSITIVE INFILL

Historic buildings are community resources that contribute to the character of the neighborhood. New development that is immediately adjacent a historic building should not overwhelm it. Context sensitive solutions should be explored to make sure that scale and height of existing historic buildings is respected by the design of new buildings built on adjacent lots.

Recommendations

- Increase the required side setbacks for properties directly abutting a designated Local Historic District. ORDINANCE
- Consider contextual front setbacks for properties directly abutting a Local Historic District. ORDINANCE

A Look at Building Types

The Mayor's Office of Strategic Planning & Community Development (OSPCD) has recently developed a new system for planning and regulating buildings across the city. To create this new system, planners identified the characteristics and features that make buildings different from one another and then built a typological menu of buildings based on those differences. A similar tool was developed for public spaces ("Understanding Civic Space Types" on page 78).

Most residents of Somerville can easily explain what makes a 'Philly style' house different from a triple decker, a six-plex, or an apartment building. Surprisingly, the City's existing zoning ordinance does not understand these same differences. Instead, the code applies generic dimensional standards to all buildings in the same district equally, as if each building is the same. The only differences that exist are from one district to the next. In contrast, building typologies recognize the differences that exist between buildings sometimes sitting right next to each other, and provides the City with a level of detail that is not available when using generic dimensional standards applied to all buildings equally.

This type of system might lead one to believe emphasis is placed on how buildings look, but each building type is instead differentiated through a series of metrics that identify minimum lot size (width, depth, area), building size and scale (height, stories, floor plate), and density (average dwelling unit size and minimum dwelling unit size) unique to each type. Building types control the appropriate scale and massing for new development without regulating architectural style and do not seek to classify buildings according to their appearance, decorative details, construction materials, historic period, or other elements that shape the vocabulary of one architectural style from another.

INTRODUCING NEW BUILDING TYPES

Development in Union Square and Boynton Yards is expected to meet design objectives that are a direct reflection of the values and preferences communicated by the community. OSPCD developed each building type by conducting an extensive physical survey of already existing lots and structures in Somerville so that new buildings and additions or modification to existing buildings replicates the existing character of the city. However, in Union Square, Boynton Yards, and other transformational areas development will include building types that the city has not seen yet in its history (see *Understanding Office Buildings* on page 105).

To determine the appropriate characteristics for new building types, OSPCD looked to modest infill buildings elsewhere in greater Boston, researched similar construction in places like Seattle and Portland (Oregon), and used the Union Square neighborhood planning process to closely scrutinize heights, floorplate sizes, and step-backs to ensure these buildings met community expectations for infill that would be compatible with the existing neighborhood character even though it was new and different compared to what was already there.

Recommendations

- Establish building type standards in the Somerville Zoning Ordinance based on the objectives of this plan. ORDINANCE
- Require development to be consistent with SomerVision and the Union Square Neighborhood Plan. ORDINANCE

BUILDING TYPES

COMMERCIAL BUILDING

Assembly Row

- 4-10 stories; 13 foot floor to floor avg.
- Up to 30,000 sf floorplate
- Commercial above retail/restaurant

LAB BUILDING

Seattle BioMed

- 4-10 stories; 13-16 foot floor to floor avg.
- Up to 35,000 sf floorplate; 120′ x 240′ typical
- Lab/R&D above limited retail

GENERAL BUILDING

Expo Apartments

- Up to 6 stories; 10 foot floor to floor avg.
- Up to 25,000 sf floorplate
- Flexibility in use; Residential above retail typical

APARTMENT BUILDING

Station Center Apartments

- 4-6 stories, 10 foot floor to floor avg.
- Up to 25,000 sf floorplate
- Multi-unit residential only

MID-RISE PODIUM TOWER

Riverside Uptown

- Up to 6 story podium; floorplate based on parking
- Up to 20 story tower; limited floor plate
- Residential above retail/restaurant

LINED PARKING GARAGE

15th & Pearl Garage

- Up to 7 stories; 5 above/2 below grade; 700 spaces
- 150′ x 300′ including liner buildings
- Upper floors wrapped by retail & class B+ office space

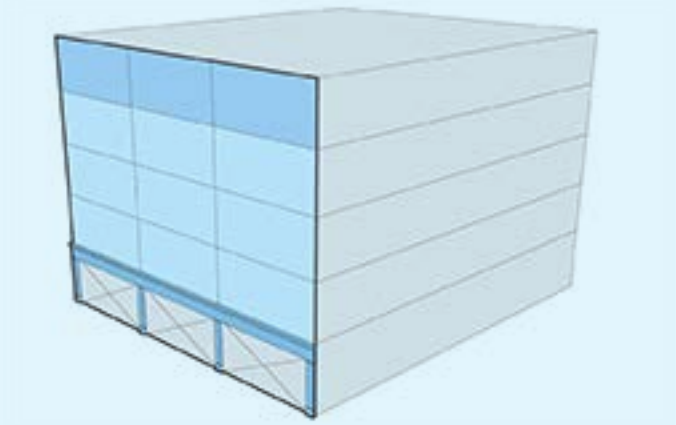
Human Scale Design Standards

Throughout the development of this plan, Union Square residents maintained strong opinions on the character of new buildings and how they interact with the public realm around them. A lot of effort was put into assessing just how much development is appropriate for each D Parcel and how development capacity might be shifted while maintaining an appropriate scale. Although building types control the appropriate scale and massing for new development, the City and the community have specific objectives for the design character of new buildings that will require an attention to detail during the review process.

CONTEXT-SENSITIVE FACADE DESIGN

New infill buildings must respect the form and pattern of existing buildings, especially in Union Square, even if not directly replicating their height or massing. Creative design techniques are necessary to ensure that larger and taller buildings still reflect the human scale that is prevalent today. Although building types standardize the scale and massing of infill development, the exterior design of individual buildings will be vetted through the permitting process for each site. The focus of design review should be to ensure that new development enhances the public realm and protects the human scale of the city. Minimum standards for building design should be put in place through zoning so that the design review of each new building has a strong foundation and begins with the same expectations for design.

Facade & Storefront Design



Understanding Office Buildings

Very few commercial office buildings exist in Union Square. The absence of this building type is partly due to the historical pattern of development. In recent history, commercial office development has been slow to occur in Somerville due in large part to competition from other locations (e.g. Kendall Square, Boston CBD, etc.); lack of an environment attractive to office tenants; poor transit connectivity; and sub-standard infrastructure. All of that is now changing. In its immediate future, Union Square and Boynton Yards have the opportunity to attract commercial office tenants, provide new jobs, and help expand the City's tax base.

Office space is classified into three categories for comparison purposes. Class A office buildings are well located, have good access, and are professionally managed. They have the newest and highest quality of space and state of the art building systems. As a result, Class A buildings attract prestigious tenants and command the highest rents. Class B office is generally older, but well managed and maintained. A wide range of tenants compete for Class B's more average rents for the region. Class C office buildings are found in less desirable locations and are typically in need of renovations because the buildings have aged. This category is suitable for tenants requiring functional space at rents below the average for the region.

The standard office building is roughly 120-140 feet by at least 200 feet. Class A tenants seek efficient floor plate sizes anywhere from 25,000 to over 40,000 square feet, but 35,000 square feet is typically the upper limit for urban locations. Buildings are designed with ample exterior glass to ensure that natural light reaches the core of the building. Greater floor to floor heights are more necessary than in residential buildings for mechanical equipment in the ceilings between floors. The center of an office building is reserved for a core of elevators, stairs, and mechanical chases. At the ground level, the core opens into a lobby that conveys the image of the building and connects the upper floors to the street. Life sciences, lab buildings, and R&D buildings typically have additional requirements due to their specific uses. The nature of the research being done limits building heights due to code requirements related to chemical storage. Life sciences floor plates include a mix of lab spaces and office spaces and are often sized based on the lab module. Additional ventilation requirements make building penthouses necessary, and therefore make these buildings taller.

Office buildings will play a major role in the evolution of Union Square and Boynton Yards as an urban employment center, but they are not likely to lead this revitalization. To successfully attract prospective tenants, Union Square's value proposition must out compete established employment centers like Kendall Square or the Financial

District and emerging locations like the Seaport, Waltham, and Watertown. If new infrastructure, public transportation, neighborhood amenities, and commercial building types can be coupled with the existing cultural, culinary, and social amenities of Union Square, a world class employment center can start to take shape. But many of those features need to happen first to drive the financial decisions of lenders or banks, equity investors, and developers and leasing decisions of prospective tenants.

Lenders don't provide money for buildings unless they view the risk as manageable and the return on investment as appropriate. Development risks are varied: entitlements, interest rates, market competition, environmental review, construction, just to name a few. Lenders often require guarantees that these risks can be managed. One way is to "pre-lease" space in the building. If a portion of the building is leased to a tenant before construction it reduces the lender's risk and makes the investment easier to underwrite. The least risky commercial development occurs when 100% of the building is pre-leased to a single tenant or a "build-to-suit" project. The most risky commercial development occurs when 0% of the building is pre-leased. This is called speculative development because the building is constructed without committed tenants, leaving the lender and developer at risk that the building might sit empty for a period after construction is finished. Speculative development typically occurs in only the most mature commercial markets with very strong investment fundamentals.

SOMERVISION

A.V.A
Zoning regulations in Somerville should provide clear and consistent direction including design standards and guidelines for contextual infill development.

Design standards should require facades to be vertically articulated to break down and visually minimize the apparent length of buildings, while also enhancing orientation and adding visual interest to the public realm. Similarly, facades should be horizontally articulated to enhance the quality and definition of the public realm, anchor buildings to the ground visually, and relate the building to the pedestrian, at the base; to the immediate context of surrounding buildings, at the middle; and to add visual interest to the building, at the top. These principles help link buildings to their surroundings in a way that remains agnostic to individual architectural style.

To complement these standards for facade design, standards should also be established to ensure storefronts are designed in a way that invites interaction, enlivens the pedestrian environment, and provides a secondary, more intimate, source of lighting at night.

Recommendations

- Establish minimum design standards for facade articulation in the Somerville Zoning Ordinance. ORDINANCE
- Establish minimum design standards for storefronts in the Somerville Zoning Ordinance. ORDINANCE
- Require Design Review for significantly sized buildings. ORDINANCE

ARCHITECTURAL DESIGN DIVERSITY

Union Square features an eclectic mix of building types and architectural styles that directly contribute to the 'funkiness' that makes the neighborhood so interesting. As a community, Somerville respects and encourages creativity and expression in the arts and culture, including architectural design. However, SomerVision asks for all new development to respect neighborhood form and patterns while expanding Somerville's architectural legacy.

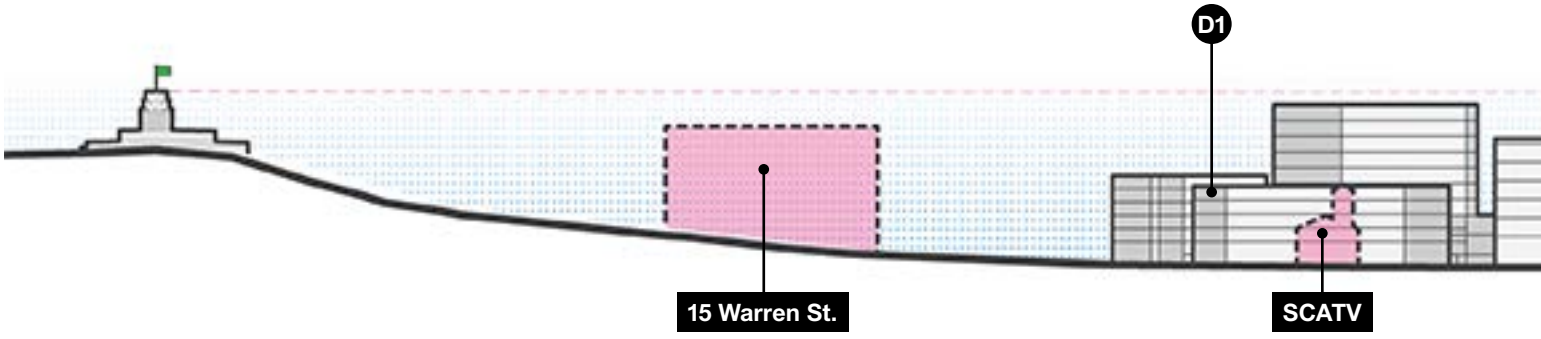
When it comes to new construction, residents appreciate the use of natural materials common to existing buildings. A restrained modern aesthetic is well supported when buildings are articulated into pedestrian-oriented increments that reflect human scale, but avant-garde modernism with a lack of balance and restraint is not. Above all else, community members seek diversity in the architectural character of their neighborhoods.

Recommendations

- Ensure that the full diversity of architecture firms on the US2 development team are used for the D Parcels and beyond. DEVELOPER AGREEMENT

Strengthen the Image of the City

While researching for his book *Image of the City*, the famous urbanist and former MIT professor Kevin Lynch studied how people perceive and navigate the urban environment. His work helped planners and urban designers understand how to harness human perception of the physical environment as the conceptual basis for good urban design. To Lynch, the public image of any city was made up of a composite of memorable



physical features and that the form of a city should reinforce the social and cultural meaning of place.

Through the combination of paths, edges, districts, nodes, and landmarks human beings reference the city. When the environment is visibly organized and easily identifiable, then people add to it their own wide variety of meaning and connection. This is the basis of people's attachment to place - be it through past history or everyday experiences.

HONOR THE PROSPECT HILL LANDMARK

Every year on New Year's Day, the City of Somerville commemorates an often overlooked but important moment from the American Revolution. On January 1, 1776, General George Washington marked the first official day of service for his militiamen as members in the newly formed Continental Army. To mark the occasion he raised the Grand Union Flag over the highest point visible from Boston, Prospect Hill. Two-hundred forty years later, we still raise that first national flag of the United States of America every New Year's Day to remember our place in U.S. history.

Propect Hill Monument plays an important role as a historic and cultural landmark for Union Square. In 2015, a portion the City's first round of Community Preservation Act funds were used to repair and stabilize the monument so that visitors could be allowed close access to this piece of American history. Reinforcing the role the monument plays in the identity of the neighborhood should remain a strong focus as redevelopment unfolds.

Recommendations

- Promote the Prospect Hill Monument in historic tours, streetlight banners, and other marketing materials.

POLICY/ PROGRAM

- Install sidewalk medallions to identify views of Prospect Hill Monument from various locations throughout Union Square.

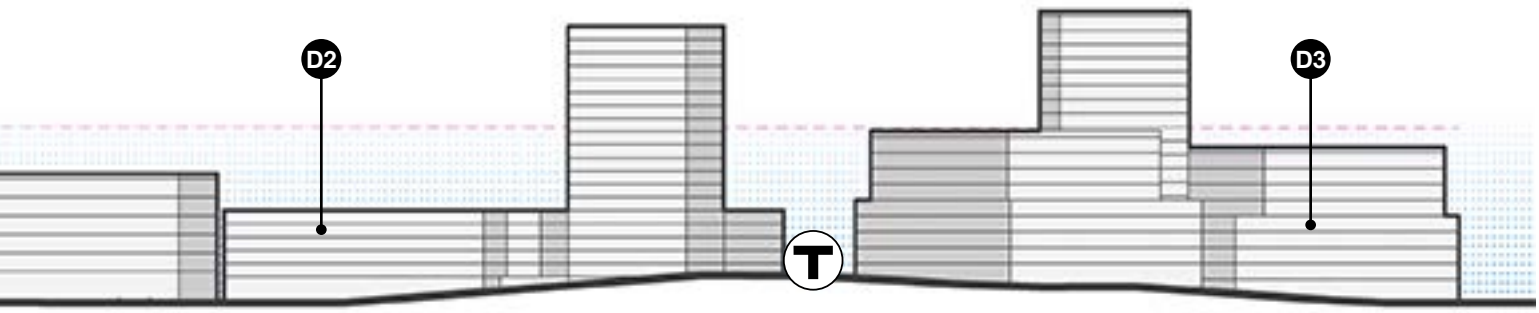
CAPITAL PROJECTS

CREATING AN ICONIC SKYLINE

Certain vantage points from Prospect Hill provides commanding views of the Boston skyline, Kendall Square in Cambridge, and even ships in Boston Harbor. These distant views of the region's

SOMERVISION

B.I.D
The City should expand the local economy by leveraging the arts and historic and cultural tourism.



SOMERVISION

B.I.D
The City should expand the local economy by leveraging the arts and historic and cultural tourism.

modern day landmarks are an important aspect of Union Square's geographic and cultural history. In fact, the views to and from Prospect Hill played an important and strategic military role during the early days of the American Revolution when George Washington's Continental Army built a citadel where the Prospect Hill Monument stands today.

For the first time in Somerville's history, new development will become a prominent contributor to the views from Prospect Hill. The design of taller buildings should contribute to a carefully crafted skyline thats is representative of the character of Union Square and lives up to the legacy of Prospect Hill. Part of this will be achieved through the six building types proposed for the Union Square plan area. Unlike the current CCD and TOD districts, which have a uniform height limit for each district, these buildings each have customized height standards for each type and their distribution through the redevelopment area will create a rich and varied skyline. In addition to the diversity provided by the proposed buildings types, design consideration must be given to how each of these buildings contributes to the variety in detail and texture of the skyline.

Recommendations

- Require large redevelopment projects to submit context analysis and skyline view studies for Development Review. ORDINANCE
- Ensure Design Review considers how tall buildings provide for a variety in detail and texture to the skyline. ORDINANCE

INCLUDE ARCHITECTURAL CUES AT TERMINATED VISTAS

Street networks like Somerville's offer lots of opportunities to add aesthetic appeal and an emotional connection between people and place. Each view down a street that ends with a building, object, or feature as the focal point is a chance to add character to the neighborhood by creating

memorable views.

When a building terminates a view, its design should make a small architectural nod to its surroundings in recognition of the role it plays in the aesthetics of the neighborhood. When vistas end on a public space, a structure or monument should be included to identify the locations role as a visual termination point. These visual cues make neighborhoods more interesting, and interesting places to engage people on a more intimate, emotional level.

Recommendations

- Require building architectural articulation at locations identified on the Terminated Vistas map. ORDINANCE
- Require public spaces to include a monument or other form of landmark at locations identified on the Terminated Vistas map. ORDINANCE

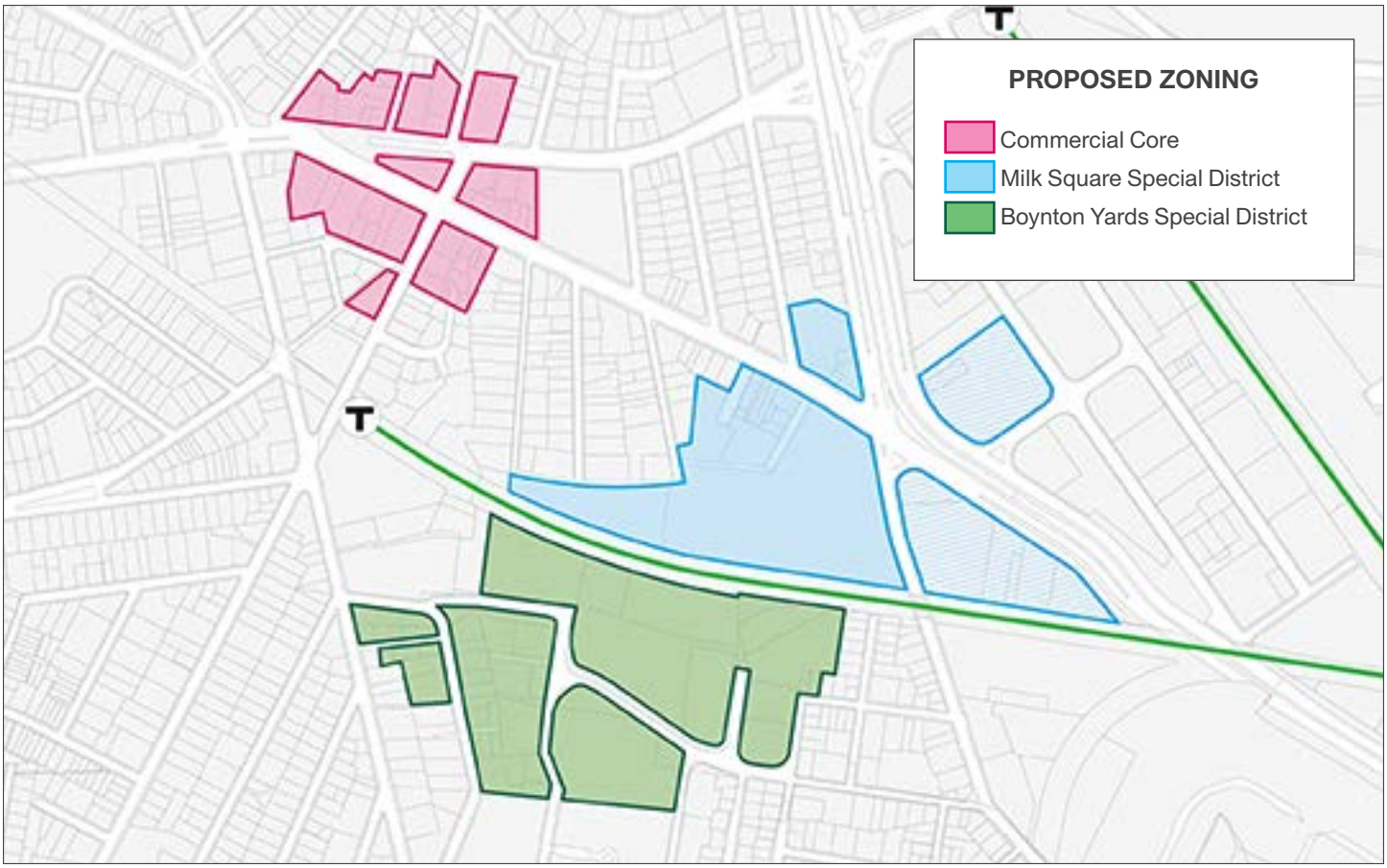
Regulating Development

In 2009, prior to SomerVision, much of Union Square and Boynton Yards were rezoned in an effort to encourage redevelopment. This new zoning introduced a number of higher density districts for properties located within close distance to the future Union Square station of the Green Line. Unfortunately, this effort failed to spur private investment at a scale sufficient enough to transform underutilized properties in Union Square and the surrounding industrial areas of Boynton Yards and the McGrath/Medford Street corridor (i.e. 'Milk Square').

By 2015, the Somerville Redevelopment Authority had stepped in to purchase land directly adjacent to the future Union Square station, US2 was actively setting a foundation for redevelopment as the selected Master Developer of the D Parcels, and the Union Square neighborhood planning process was underway to identify opportunities and set goals for redevelopment in the Union

SOMERVISION

A.V.A
Zoning regulations in Somerville should provide clear and consistent direction including design standards and guidelines for contextual infill development.



SOMERVISION

A.V.A
Zoning regulations in Somerville should provide clear and consistent direction including design standards and guidelines for contextual infill development.

Square plan area. The only thing missing is a replacement for the 2009 zoning.

REZONING UNION AND BOYNTON

Redevelopment efforts in the Union Square plan area are focused on creating a new Urban Employment Center (see page 45). The development criteria and build out estimates identified in *Chapter 2: Community Driven Planning* help to guide planning efforts according to expectations. However, ensuring that new development follows these development criteria requires new zoning regulations that enact these standards as law. The objective of these new regulation should be to unlock Union Square and Boynton Yards' potential as a Urban Employment Center.

New standards should be established for the building types discussed previously and all new development should be required to demonstrate consistency with SomerVision and the objectives of this plan. A commercial-only zoning district should be used on a limited, but effective, basis to ensure a baseline amount of commercial floorspace exists. The development review process should provide a flexible framework for the coordinated redevelopment of the seven D Parcels, allowing those sites to work together to achieve development objectives. Lastly, special districts should be created that guide the transformational redevelopment of Boynton Yards and the area surrounding Target (e.g. 'Milk Square') in a manner consistent with the objectives of this plan, while remaining flexible enough to adjust to previously unidentified challenges. Most importantly, zoning should result in new development that produces a 60/40 split in commercial/residential floorspace and the floorspace necessary for six (6) jobs for each new dwelling unit that is planned.

Recommendations

- Adjust existing districts as needed to reflect the recommendations of the Union Square Neighborhood Plan. ORDINANCE
- Establish a Commercial Core Zoning District for properties where only commercial development is desired. ORDINANCE
- Create a development review process to facilitate the coordinated redevelopment of the seven D Parcels. ORDINANCE
- Establish special districts to regulate the redevelopment of Boynton Yards and the area surrounding Target (e.g. 'Milk Square'). ORDINANCE

OPTIONS FOR UNION SQUARE EAST

There is an existing pocket neighborhood south of Somerville Avenue coined Union Square East by residents. The City's general policy for pocket neighborhoods like these is to 'conserve' them as they are today. Union Square East includes properties fronting onto Merriam, Linden, Allen, and Charlestown Streets. While this neighborhood is primarily residential, there is more building variety here than in other pocket neighborhoods. There are storefronts on Somerville Avenue, a warehouse building with a mix of uses, CAAS Head Start Shobu Aikido – a martial arts school, and a community garden in the three block neighborhood. Despite this diversity, all of these properties are currently mapped as the Residence-B district of the current zoning ordinance.

Although development on the D2 Parcel will be concentrated along Prospect Street and Somerville Avenue, the scale of new buildings will have some impact on the closest residents; those on the west side of Allen Street. Nine properties, most of which are owner-occupied, share a rear lot line with D2 so redevelopment is being planned with a rear alley for vehicular access and to put some space between D2 and these properties.

During development of this neighborhood plan, the City met with residents of Allen Street to talk about future options. City staff anticipate that this area would only be developed by individual property owners, either doing small projects or combining sites to do mid-sized projects. But, such development would be by the choice of the owners and not through eminent domain.

At the end of these conversations, residents expressed that they wanted to keep their options open. To provide current residents with options as

development happens around them, properties on the west side of Allen Street should be mapped in the Urban Residential zoning district in the next draft of the zoning ordinance. This means that residents of Allen Street will have the choice to keep things the same, to redevelop themselves, or to sell the property in a private land transaction.

Today, Allen Street is a narrow residential side street, and it may stay much as it is in the future. But, if any homes on Allen Street are redeveloped, the street will need to be able to serve the greater pedestrian and vehicular needs of new residential development. To meet these needs, access to any parking for new development should be from the shared D2 alley and, as each lot is redeveloped, it should be reviewed to determine if a greater front setback could help provide on-street parking, new street trees, and/or wider sidewalks. These will help make Allen Street safer for pedestrians and ensure that new development does not overwhelm the narrow street.

Lastly, the remainder of this pocket neighborhood, including Merriam, Linden, Charlestown Streets, and the east side of Allen Street are likely remain much as they are today. But, if residents of these streets come together and seek an opportunity for growth and change, like that discussed on Allen Street, the City should support the self determination of residents, but redevelopment should happen only if the neighbors seek it themselves.

Recommendations

- Remap the nine properties on the west side of Allen Street into an Urban Residential zoning district. ORDINANCE
- Develop city-wide standards that ensure the scale of development, vehicular access, and street design promote pedestrian safety and context sensitive infill. ORDINANCE
- Support residents seeking zoning map changes for pocket neighborhoods as context changes around them. ORDINANCE

Sustainable Design

To prepare for and reduce the effects of climate change, Somerville is developing a 2050 Climate Change Plan with two key goals: to decrease our contribution to climate change by reducing the collective carbon emissions of both the City and its residents and to prepare Somerville to thrive amid the potential impacts of climate change such as increased flooding and intensified storms.

As the first step, the City's completed a greenhouse gas (GHG) inventory that measured our present energy use in 2015. This study tells us our baseline, an understanding of where we are now. With that understanding, the City will next reach out to community members, stakeholders, and experts to set goals and planning principles for the 2050 Climate Change Plan.

Becoming carbon neutral by 2050 and developing our resiliency as a city will take time and the work necessary is of a broader scope than can be addressed in the Union Square Neighborhood Plan. However, there are a number of policy tools than can be accomplished now including improved landscape standards that increase the amount and quality of vegetation on properties, green building certification for new development, permit streamlining for green building features, and supporting the use of electric vehicles.

Recommendations

- Adopt a performance-based landscape requirement like the Seattle Green Area Ratio in the Somerville Zoning Ordinance. ORDINANCE
- Require new buildings to be environmentally responsible and resource efficient. ORDINANCE
- Permit Green Roofs and Renewable Energy Production Systems by right in the Somerville Zoning Ordinance. ORDINANCE
- Require large parking structures to be Electric Vehicle ready. ORDINANCE

SOMERVISION

C.VIII.A.
The City should meet energy reduction goals by undertaking or requiring efficiency and renewal projects.

C.VIII.C.
The City and property owners should assist in reducing the urban heat island effect through the use of efficient roofing, reflection and shading choices.

D.V.B.
The City should pursue the best available technologies when revisiting parking in commercial zones.

SOMERVISION

C.IX.A.
The City should identify funding to upgrade utilities in key economic development areas.

C.IX.B.
The City should strongly encourage utility companies to provide services in a way that improves the urban environment and aesthetics, while meeting future needs.

Updating Our Infrastructure

Infrastructure includes roads, bridges, power lines, and sewers - all of the things that we can take for granted when working correctly. Each infrastructure challenge in the Union Square plan area is unique. The challenges range from regulation, to funding, to jurisdictional issues. To solve these challenges, the City will have to work collaboratively with several levels of governments and quasi-government agencies.

Take the City's water system into consideration. The Massachusetts Water Resource Association (MWRA) is the authority that provides wholesale water and sewer systems to 61 metro Boston communities. The MWRA operates under a NPDES (National Pollutant Discharge Elimination System) permit issued by the Environmental Protection Agency (EPA). In the aftermath of storm events that created a large amount of sanitary sewer overflows in the region, the EPA and DEP (the State Department of Environmental Protection) began an aggressive effort requiring MWRA to regulate flows from community sewer systems. Reduction of infiltration and inflow (or I/I) in the system is a primary target. I/I is groundwater and rainwater that enter the sanitary sewer system through a variety of means including cracks and/or leaks in the pipes. Measurable progress on I/I removal is vital to MWRA keeping their NPDES permit. In this scenario, municipalities, a quasi-government agency, and state and federal regulators are all involved.

Where Does All That Water Go?

Residents don't usually have to think about where the water goes when the toilet flushes, the dishes are washed, or when they shower. Sewer systems really are a modern marvel that we've come to take for granted - until something goes wrong.

Sewer infrastructure that combines stormwater, which comes from our roofs or paved surfaces, and wastewater, which comes from our kitchens and bathrooms, into a single combined system of pipes is called a combined sewer system. In a combined system, stormwater that is inherently clean mixes with dirty wastewater, making it necessary to treat all of it the same. Somerville's wastewater is cleaned at interceptors prior to being discharged into the Mystic River or at the MWRA treatment facility on Deer Island prior to being discharged into Boston Harbor. This type of system increases treatment costs because they are inherently inefficient and can be a major factor in the pollution of local waterways.

During periods of heavy rainfall or snowmelt, combined wastewater flows can exceed the capacity of the sewer system. When this occurs, the system is designed to overflow directly to nearby waterways, discharging both untreated sewage and stormwater together. This event is called a combined sewer overflow (CSO). Worse yet, when the overflow itself is overcapacity, wastewater can flood streets and even back up into basements.

New sewer systems are designed and built to separate wastewater from stormwater runoff. Water that is collected in storm drains and from rooftops is kept separate from the water that comes out of houses and businesses. Water collected from 'clean' sources of run-off can then be discharged after minor treatment into the nearest waterway, while dirty water is treated by sewage treatment facilities before it is discharged. This cuts costs and is more efficient. It also eliminates contaminated flooding events. When Somerville Avenue was reconstructed from Porter Square to Union Square in 2010, a separated sewer system was installed.

FIXING THE SEWERS

One of every two raindrops that fall in Somerville drain through Union Square. The sewer system from Porter Square to Union Square was separated in 2010. The remaining length from Union Square to an outfall on the Mystic River is not separated. The combined system leads to flooding in the square during major rain events. A 2010 rain event caused millions in property damage. Therefore, new stormwater separation or storage capacity is necessary to support new development.

It's currently estimated that the Union Square infrastructure and streetscape work will cost $70 million and Boynton Yards will cost $40 million. The City has traditionally financed large projects with debt including principal and interest which is referred to as "debt service." Debt service is usually paid over three to twenty years. In a very simple way, this is just like people taking out a loan. People that have good credit can leverage their past and future earning potential to acquire a home or car.

The City has a variety of funding sources that can be used, each with its own advantages and disadvantages. The City can issue general obligation bonds or bonds against the general fund. The negative of leveraging against the general fund is that it can affect our bond rating negatively if too much debt is leveraged. If the City's bond rating drops it will make borrowing more expensive. The City can also bond again the water and sewer stabilization fund which is separately funded through water and sewer fees.

There are other financing tools available including District Improvement Financing (DIF) and Infrastructure Investment Incentive Program (I-Cubed). DIF enables municipalities to fund infrastructure and development projects by allocating future, incremental property tax revenues collected from a predefined geographic area. I-Cubed is a state program that creates a public private partnership that helps finance public infrastructure improvements through bonds against state revenue to support certified economic development projects.

The best type of money is free money. The City is always searching for state and federal grants to cover infrastructure costs. In the fall, the City was awarded $3.34 million from the MassWorks Infrastructure Program for Union Square costs, but other sources will need to be identified.

Recommendations

- Secure funding for the Capital Improvements necessary to upgrade the stormwater infrastructure in the Union Square plan area.


TAX FUNDED

LESSENING STORMWATER'S IMPACT

Water was an important concern to residents and businesses owners during the Union Square neighborhood Planning process. How the neighborhood drains and how stormwater flows can be kept from disrupting life in the event of a major storm is essential to the neighborhood's long term economic prosperity as a new Urban Employment Center.

The City's Engineering and Capital Projects Departments are working to address this challenge from multiple angles. A variety of approaches, from separation of stormwater and sewer infrastructure, to I&I removal, permits for new impermeable surfaces, and a variety other water handling strategies are being put into play.

Recommendations

- Adopt a Stormwater Management Ordinance in the City's Municipal Code as a replacement for Permeable Surface requirements in zoning.


ORDINANCE

- Encourage depaving activities that reduce the amount of impermeable surfaces on residential lots, municipally owned properties, and public spaces.


POLICY/ PROGRAM

SOMERVISION

C.IX.C.
The City should prepare for the desired level of business and residential development in transformational areas, in terms of power and connectivity capabilities.

D.VIII.A.
The City should provide a stormwater and sewer system that is able to accommodate extreme events without flooding or causing combined sewer overflows (CSOs).

A Vision for Mobility

Embracing a Future with Transit

SOMERVISION

D.II.A.
The City should implement transportation policies and programs that reduce automobile use.

D.III.B.
The City should ensure that every transportation project results in improved pedestrian access

This section explores a vision for mobility (how we get around) and how the transportation network in the Union Square plan area should function. First, we review SomerVision's various objectives for transportation improvements along with its guidance on how people should travel. Next we cover recommendations to embrace advanced mobility planning, a plan for returning Union Square's main streets to two-way traffic, completing the streets for all travel modes, street-calming, connecting Union Square to new places, improving public transportation, and managing parking.

SomerVision's Mobility Targets

SomerVision includes a set of aspirational targets for economic development, housing construction, and open space improvement, along with guidance on how people should travel and where development should occur within the city. The primary mobility objective is for at least 50% of all new trips to made be by public transportation, walking, or bicycling. SomerVision also seeks to improve our shared environmental quality, reduce pollution, and decrease traffic & congestion through the use of transportation modes other than the private automobile. These include expanding walking and bicycling; building complete streets that are balanced for all modes of travel; promoting Mobility Management best practices; managing the supply of parking, supporting car sharing and bike sharing services; reducing parking requirements for transit oriented development, seniors, and residents in affordable housing; and permitting shared parking.

Complete the Streets for All Users

The Somerville Complete Streets Ordinance, the first of its kind in Massachusetts, states: "Complete Streets are designed and implemented to assure safety and accessibility for all the users of our streets, paths and transit systems, including pedestrians, bicyclists, transit riders, motorists, commercial vehicles, emergency vehicles and for people of all ages and of all abilities". By adopting this ordinance, the City is committed to incorporating Complete Streets planning and design "into public transportation projects in order to provide appropriate accommodation for bicyclists, pedestrians, transit users and persons of all abilities, while promoting safe operation for all users, in comprehensive and connected networks, in a manner consistent with, and supportive of, the surrounding community."

ESTABLISH MODE PRIORITIES

To implement the City's Complete Streets policy, the City is advancing a pedestrian-first modal hierarchy. All transportation projects and programs, from scoping to maintenance, will favor pedestrians first, then transit riders, cyclists, and motor vehicles. This implementation approach will rebalance Somerville's streets to make them more 'complete,' reversing generations of automobile-focused planning and design at the expense of all other transportation modes. This pedestrian-first modal hierarchy resets the default premise for transportation projects in Somerville by acknowledging that every trip begins and ends as a pedestrian.

Recommendations

- Prioritize pedestrians-first modal hierarchy for all transportation projects and programs, from scoping to maintenance.


POLICY/ PROGRAM

A GREEN LIGHT FOR 2-WAY STREETS

Streets are an existing, flexible framework that serve as the foundation for building a strong community. When the 'traffic' function of our streets is prioritized over of the 'civic' function, it limits the ability of our streets to support the local economy and community to their fullest.

During the Union Square neighborhood planning process, community members voiced their strong desire for the City to finally fix the traffic and congestion problems in Union Square. At the same time, they wanted more than just an engineering based solution for moving traffic through. From complete streets advocates to everyday residents, the public desires to rethink the role streets play in the culture of the neighborhood.

Providing for vehicular travel is just one the many roles that streets play in community development. They can also contribute to a sense of place and

support economic development efforts when they are easy to navigate and more connected whether you are walking, biking, taking transit, or driving. Placemaking efforts that go hand in hand with redevelopment typically focus on the redesign of streets because the planning and design of streets over recent decades has been automobile-focused at the expense of all other transportation modes. We can't expect new investment along streets that simply don't work properly - for vehicles or people.

Today, Union Square's street network is designed as a multi-lane one-way 'bow tie' at the core of the neighborhood. Somerville Avenue, Washington Street, Webster Avenue, and Prospect Street all restrict travel in a single direction. One-way streets are thought to provide higher vehicular capacity by increasing the number of lanes in a single direction. They also make it easier to coordinate a series of traffic lights into what is known as a 'green wave,' which allows a continuous traffic flow over several intersections. Green waves are not harmful in and of themselves (they can reduce emissions and fuel consumption), but when combined with one-way streets the result prioritizes vehicles driving through the square to get to other places rather than supporting the vibrancy of the square itself.

The design of Union Square's one-way street network is based on the idea that they move traffic better than two-way streets. However, the negatives of the system outweigh the positives. One way streets frequently increase vehicular speeds, and there is some evidence that drivers are less attentive because there are no cars heading in the other direction to watch out for. Vehicles stop less often on one-way streets, which makes things harder for cyclists trying to turn and pedestrians trying to cross the street. Taking public transit becomes more difficult on one-way streets because bus stops are not located on the opposite side of the street from one another. A trip in the other direction requires you to find a stop on an entirely different street. Furthermore, one-way streets have an impact on the local economy because they reduce visibility of retail and restaurants because they route trips to and from work onto different streets.

Dr. Vikash Gayah, a Civil Engineering Professor from Penn State University, questioned the conventional wisdom of one-way streets in a study from 2012. Vehicular traffic is normally measured as the number of cars flowing past a specific spot. The more cars, the better the traffic flow. But measuring efficiency this way doesn't account for the fact that driving on a one-way street system frequently means traveling in a circular route to your destination, which adds distance to every trip. By considering both the flow and the extra travel distance created by a one-way street network, the true 'trip-serving capacity' of a street can be measured. When put to the test, Dr. Gayah found that two-ways streets perform about the same or even better than one-way streets, especially if they control left turns in an economical way.

In 2016, the City will return Prospect Street and Webster Street, from Somerville Avenue to their crossing, to two-way traffic for the first time in decades. By re-striping the streets and installing new traffic signals on an interim basis, the City will test the removal of unnecessary traffic movements to inform a more formal and permanent design to alleviate congestion and improve traffic flow in the future. Somerville Avenue should soon follow to create a full network of to two-way streets in Union Square. Reverting back to a two-way traffic pattern will make traffic flow better, reduce aggravation for drivers, and open up bottlenecks.

Recommendations

- Convert Somerville Avenue, Prospect Street, and Webster Street to two-way traffic flow.

CAPITAL PROJECTS

EMBRACE PROTECTED BIKEWAYS

In 2005, the Transportation Department for the City of Portland, OR was the first to classify the different types of cyclists that exist within a population: the Strong and Fearless (<1%), Enthused and Confident (7%), Interested but Concerned (60%), and No Way, No How (33%).

No matter the category, surveys have found that the number one reason that many people do not consider bicycling as a valid means of

SOMERVISION

D.III.E.
The City should improve on-street bike infrastructure, prioritizing bike lanes over sharrows.

D.IV.A.
The City should efficiently manage traffic flow to reduce pollution and congestion.

SOMERVISION

D.III.A
The City should systematically evaluate its bike and pedestrian networks to ensure safe and efficient travel.

D.III.E.
The City should improve on-street bike infrastructure, prioritizing bike lanes over sharrows.

transportation is because they are afraid to be on the same roadway as automobiles. Achieving SomerVision's goal for 50% of trips to be via transit, cycling, or walking will require making our streets, wherever we can, as safe and comfortable for the Interested but Concerned group of the population. To tap into this largest group of potential cyclists, Somerville will need to make transformative investments in bicycle infrastructure and on creating a fully connected grid of protected bikeways on busy streets and bicycle boulevards through quiet neighborhoods. This policy could be further enhanced by empowering the community to create Neighborways, Playborhoods, or PlayStreets on our neighborhood streets.

Protected bikeways are a category of bicycle facility that separates bicyclists from motorists. They can be at road or sidewalk level and separation can be created in a variety of ways including parked cars, plastic posts, raised curbs, or even planters. The means separation can even change along a route depending on the width available and the design of intersections.

Research has found that protected bikeways reduce the risk of injury by up to 90% when compared to standard, unprotected bike lanes. By removing or reducing the sense of fear involved with sharing a travel lane with an automobile, research shows that within the first year after installation, a protected bikeway facility increases bicycle ridership by 75% on average.

Not every street in Somerville is wide enough for a protected bikeway, but sharrows and even bike lanes will not encourage riders afraid of riding alongside automobiles to change their travel behavior.

Recommendations

- Prioritize the construction of protected bikeways on major streets when feasible within the right-of-way. POLICY/ PROGRAM
- Install bike traffic lights for cyclists at appropriate intersections. CAPITAL PROJECTS
- Implement Bicycle Boulevards in neighborhoods where appropriate. CAPITAL PROJECTS
- Establish a formal process for residents to establish a Neighborway, Playborhood, or PlayStreet. POLICY/ PROGRAM

The Human Eye and Street Design

The physiology of the human eye has many implications for urban design. The retina of our eye functions similar to film in a camera, interpreting what we are looking at, and plays an important role in how we perceive the world around us.

The central part of our retina is called the fovea. This area is densely packed with over 25,000 cells that detect light and color. Each cell is individually connected to a nerve fiber. These cells provide us with very high-resolution vision for tasks such as threading a needle.

Surrounding the fovea is another area of color detecting cells called the macula. Macular vision is very clear, but not as sharp as with the fovea because the cells are further apart from one another. As you move away from the center of the retina the nature of our vision fundamentally changes. Cells that detect color become scattered and cells designed for seeing at night become more prominent.

Outside of the macula is the peripheral retina, with cells designed more for night vision and where up to 200 or more cells are connected to a single nerve fiber. When more than one cell is connected to a nerve fiber, resolution decreases and the perception of motion is increased. This is why moving objects are easily caught 'out of the corner' of our eye, but everything is out of focus.

When we ourselves are moving, objects seen in our peripheral vision exaggerate the speed our brain thinks we are traveling. This means that streets lined with on-street parking and street trees provide a natural 'visual friction' that slows down drivers because they think they are moving faster than they actually are. As a result, streets with on-street parking and street trees are naturally safer streets for pedestrians than streets without.

Calming the Streets

During the Union Square Neighborhood planning process the following streets were all identified by community members as having issues with either cut through traffic or fast-moving vehicles: Vinal Ave, Perry St , Concord Ave, Dane Ave, Properzi Way, Calvin St, Boston St, Summit Ave, and Walnut Street. Each of these streets deserves to be closely looked at to determine what happening and measures that can be take to ensure safety for all users.

INTRODUCE VISUAL FRICTION

The most effective way to slow vehicular traffic on urban streets is to create 'visual friction' that impacts a driver's perception of safety. When travel lanes have appropriate widths, streets with two-way traffic flows are generally observed to have slower speeds than one-way streets because drivers are careful not to sideswipe each other. Vehicular speed decreases even further when features like on-street parking and street trees are provided on both sides of the street (causing more 'visual friction'). This happens because objects seen out of our peripheral vision make drivers feel like they are moving faster than they really are, due to the way our eyes see and interpret our surroundings.

The safest type of neighborhood street for pedestrians is one featuring a shared travel lane 14-16 feet wide with no center stripe and parking lanes on both sides. This type of street is called a "yield street" because cars passing each other are forced to slow down and in many cases one car is even required to pull over slightly to make enough room for the other to pass. Yield streets significantly reduce travel speeds and promote safety for all modes because of the 'visual friction' they provide.

Recommendations

- Install, monitor, and evaluate the effectiveness of interim traffic calming techniques on problematic neighborhood streets in the Union Square plan area.

- Conduct a physical survey of problematic neighborhood streets in the Union Square plan area to accurately map curb cuts, existing street trees, and existing on street parking.

- Opportunistically convert problematic neighborhood streets in the Union Square plan area into 'yield streets' when possible.

PRIORITIZE SAFE ROUTES TO SCHOOL

In 1969, about half of all U.S. children walked or biked to school, with approximately 87% of children who lived within one mile of school walking or bicycling. Today, less than 15% of children walk or bike to school. As a result, kids today are less active, less independent, and less healthy. Safe Routes to School (SRTS) programs are designed to reverse this trend by getting more children walking and bicycling to schools on a daily basis.

In July 2005, Congress passed federal legislation that established a National Safe Routes to School program to improve safety on walking and bicycling routes to school and to encourage children and families to travel between home and school using these modes.

Currently, the Argenziano School maintains a safe routes to school map that identifies ideal routes for children to walk or bike to the school. The City's safe routes to school are included as priority repairs, as the Neighborhood Street Reconstruction Program continues to improve existing sidewalks and curb ramps so that they more accessible to all users, regardless of ability. At the same time, special attention should be paid to safe route streets in the Union Square plan area so that additional improvements can be made to promote walking and cycling for children.

Recommendations

- Prioritize streetscape and street design improvements for safe routes to school in the Union Square plan area.

SOMERVISION

D.IV.B.
The City should continuously strive to increase safety for all users on its roadways.

D.III.A.
The City should systematically evaluate its bike and pedestrian networks to ensure safe and efficient travel.

SOMERVISION

D.IV.B.
The City should continuously strive to increase safety for all users on its roadways.

A.II.A.
The City should establish policies and regulations that support neighborhood development with a strong relationship to transit.

ADOPT A 20 IS PLENTY CAMPAIGN

Neighborhood Slow Zones are a program to reduce traffic speed from the standard unposted speed on neighborhood streets from 30 mph to 20 mph. This reduction in speeds by 10 MPH represents the critical difference between life and death, with a demonstrated 42% reduction in pedestrian casualties. The establishment of Slow Zones should be investigated throughout the Union Square plan area, with gateway signage and markings put in place to indicate to drivers that they are using neighborhood streets within a slow zone.

Recommendations

- Petition the legislature to allow a reduction of the speed limit to 20 miles per hour.


POLICY/ PROGRAM

Embrace Transit-Orientation

Public transit and Transit-Oriented Development will play a defining role in achieving many of SomerVision's goals (see page 34). Transit use reduces congestion by giving people an alternative to driving. It reduces the emission of pollutants and greenhouse gases that would have otherwise been generated by transit riders if they had driven cars instead. It decreases the amount of money that riders must spend on gasoline and other costs of operating private vehicles, and may even allow them to reduce the number of vehicles they need to own. It frees up time by allowing riders to work, read, sleep, or otherwise relax on a train or bus instead of having to pay attention to the road. It gives employers located near transit hubs greater access to a more dispersed workforce.

In addition to these broad benefits, extension of the Green Line to Union Square will provide existing residents with a more direct link into the regional public transportation system, increasing their access to thousands of employment opportunities and reducing costs associated with traveling to work. Additionally, it attracts employers to the neighborhood that are looking to tap into the talent pool of the densest municipality in New England.

Living or working within a close walking distance to transit has been found to corollate with substantially higher rates of transit use. However, it is necessary to promote the physical conditions and supporting policies that will discourage residents and employees from driving. Increased development intensity in close proximity to transit stations can unlock immense benefits (see page 42). However, when development is simply transit adjacent, with significant parking, or built without supporting policies that induce transit-oriented behavior, it can also invite automobile traffic and congestion. This will undo all of the benefit transit can provide – especially at the local level.

IMPLEMENT MOBILITY MANAGEMENT

SomerVision includes twelve goals, policies, or actions related to Mobility Management. Sometimes called the more tedious 'transportation demand management' (TDM), mobility management is a program of services, information, and incentives to help people know about and use all of the transportation services that are available. It is specifically designed to counter balance many of the existing incentives that encourage people to drive, such as free parking. Mobility management promotes the efficient use of our transportation system as a cost-effective alternative to increasing parking supply or roadway capacity while also improving overall accessibility and sustainability.

In 2015, the Mayor's Office of Strategic Planning and Community Development proposed mobility management standards for the Somerville Zoning Ordinance overhaul that would require new commercial and multi-tenant residential development of a certain size to implement mobility management practices. Measures that support mobility management cover a broad range of low-cost programs, policies, and services. These frequently include providing information about transit services in the neighborhood, unbundling the price of parking from the cost to rent floor space, participating in the State's guaranteed ride home program, providing preferential parking for car-poolers, flexible work schedules to reduce peak time travel, allowing employees to use pre-tax dollars to purchase transit passes, and even subsidizing the cost of transit, car-share, or bike-share passes for employees.

Recommendations

- Establish requirements for new commercial and multi-tenant residential development to implement Mobility Management policies and programs in the Somerville Zoning Ordinance.

- Create a Transportation Management Association for Union Square and Boynton Yards to efficiently manage and market mobility programs and services for members.

Adopt Smart Parking Policy

The most valuable use of above ground floor space for new development in Union Square and Boynton Yards is as commercial or residential uses, not parked cars. Parking is a commodity, and as such, should be dictated by market demand and not by parking standards that are unresponsive to changes in cultural attitudes about how we travel and routinely overestimate actual need.

Parking should be regulated in an entirely different way in transit-accessible neighborhoods than it is for areas of the city outside of walking distance to a transit station. Studies have found a clear relationship between the availability of parking at home and higher rates of driving to work, even when both the home and workplace were well served by transit. When looking only at households within walking distance to a transit station, households with both low on- and off-street parking commute by automobile 60% less than households with easy access to parking. Locating jobs close to transit encourages employees to leave their cars at home, reducing traffic and improving air quality. However, when a guaranteed, off-street parking space is available, the ownership and use of an automobile becomes a much more attractive option. Together this research highlights that providing parking in and of itself likely induces more driving trips and leads to more local congestion.

ADOPT TRANSIT-ORIENTED PARKING STANDARDS

There are four different approaches to setting parking standards for new development. They range from conventional minimum parking requirements to policies that both levy parking maximums, and some of them actually hinder transit-oriented development.

One option is to custom-tailor parking requirements to reflect lower vehicle ownership rates close to transit. Another option is to have no parking requirement altogether and let developers determine the most appropriate amount of

SOMERVISION

D.II.A.
The City should implement transportation policies and programs that reduce automobile use.

D.V.C.
The City should continue to reevaluate parking policy to reflect the needs of residents, visitors and businesses

How Parking Standards Impact Other Goals

	CONVENTIONAL MINIMUM PARKING REQUIREMENTS	TAILORED MINIMUM PARKING REQUIREMENTS	NO PARKING REQUIREMENTS	MAXIMUM PARKING REQUIREMENTS
Typical Tools	• Requirements greater than average demand • Hides all parking costs	Adjust for: • density • transit • mixed-use • on-street spaces • etc.	• Market decided • Garages funded by parking revenues • Manage on-street parking • Residential parking permits allowed by vote	• Limit parking based on road capacity or transit goals • Manage on-street parking • Market rate fees encouraged/ required
Traffic	High ←			→ Low
Housing	High ←			→ Low
Transit Ridership	Low ←			→ High

SOMERVISION

D.II.A.
The City should implement transportation policies and programs that reduce automobile use.

parking to provide based on the market. This avoids oversupplying parking to the point where many spaces sit empty. However, these first two policies simply try to better match parking supply to demand, instead of actively working to induce transit ridership. A third option involves limiting the amount of parking that developers are allowed to supply. The type of parking policy chosen for new development will determine whether or not it is transit-oriented, helping to achieve the goals of SomerVision, or transit-adjacent, with a lack of policies that support transit use and parking that encourages automobile traffic and congestion in the very locations most served by transit.

New parking standards should be adopted in zoning that fully support the transit-oriented development that SomerVision calls for. This likely means establishing parking maximums for residential uses within 1/2 miles and commercial uses within 1/4 mile of the new Union Square station of the Green Line (see page 43 for more information). This decision also has the ability to be customized at different scales. For example, when applied to individual development projects, a maximum function is to limit the amount of parking than can be built by each. Another more flexible way to accomplish the same goal is to apply a maximum at a district scale. This would permit early phases of development to build parking that counts against an upper cap of total parking allowed. Once that threshold is achieved, no more parking would be permitted to be built for subsequent projects.

Recommendations

- Adopt new parking standards in the Somerville Zoning Ordinance for transit oriented development in the Union Square plan area.

ORDINANCE

- Consider establishing parking maximums instead of conventional minimum parking standards for transit-oriented development in the Union Square plan area.

ORDINANCE

- Consider requiring new development to provide a minimum amount of parking as shared or even public parking.

ORDINANCE

- Require new development to provide 'unbundled' parking that is rented, leased, or sold as an option rather than a requirement of the rental, lease, or purchase of a dwelling unit or commercial floor space.

ORDINANCE

UTILIZE SHARED PARKING

Traditional parking requirements maintain that individual land uses should have dedicated parking supplies. However, walkable mixed-use (and soon to be transit-oriented) neighborhoods like Union Square can allow for parking to be shared. Visitors can park once and walk to multiple destinations; employees can park once for the day and walk to run errands. Each land use does not need its own dedicated supply of parking, yet that is exactly what standard analysis and zoning indicate is needed.

In reality, real parking demand is rarely constant; it changes over time. For example, an office may have a high demand until 5 pm, and a restaurant open for dinner may have a high demand only after 5 pm.

Shared parking encourages use of large centralized parking facilities and discourages the development of many small facilities. This results in more efficient traffic flow because there are fewer curb cuts, and turning opportunities on main thoroughfares. This has the added benefit of reducing accidents and reducing emissions from idling vehicles stuck in traffic. Additionally, shared parking can reduce the burden placed on adaptive developments in historic buildings by allowing a change of use without requiring incongruent surface or structured shared parking on the site. Municipalities may encourage shared parking in a number of ways, including:

- **District-Based Sharing:** Different uses in a defined district share parking (Montgomery County, MD)
- **Free-Range Sharing:** Individuals create parking partnerships, and shared parking is allowed in zoning. (Long Beach, CA)
- **Land Use:** Some specific shared parking minimums exist for certain land use types. (Waltham, MA)
- **Minimum Provision:** A certain amount of parking for each use must be shared (Cambridge, MA)

An example of free range shared parking similar to what could happen in Union Square is a mixed-use building in South Boston called The Residences at 50 Broadway (shown at left). This building is one block from the Broadway Station of the Red Line, but when it was constructed an oversupply of parking was included. Today, new infill buildings in the neighborhood are leasing spaces from 50 Broadway because it has an excess of parking beyond what the residents and ground floor businesses actually need, primarily due to the nearby transit service.

Recommendations

- Permit shared parking for new development in the Union Square plan area rather than individual requirements for each use.

ORDINANCE

Manage Parking as a Resource

Parking management includes a number of strategies that encourage a more efficient use of on- or off-street parking, improve the quality of service provided to the users of parking facilities, and improve the overall design of parking lots and structures. Managing parking includes a broad range of possible strategies including metering parking for short-term turnover, residential parking permits, demand based pricing of on-street parking, and parking management districts.

METERING PARKING FOR TURNOVER

Parking spillover by employees is not a concern in most downtowns because curb parking is typically metered for short term turnover rather than all-day use. If employers provide employees the option to cash out their use of an off-street parking space as part of a mobility management program, there need not be a fear that they will take their cash and park on the street. This barrier

SOMERVISION

B.VII.B.
The City should develop a parking policy that promotes commercial re-use and infill development.

SOMERVISION

D.II.A.
The City should implement transportation policies and programs that reduce automobile use.

to spillover allows cities like Boston and new districts like North Point to cap the total number of parking spaces in new development without worrying about spillover.

Recommendations

- Consider limits on the length of stay for metered parking spaces to induce short term turnover. POLICY/ PROGRAM
- Consider varying metered parking rates based on the length of stay to induce short term turnover (1st hour = $1, 2nd hour = $2, etc.) POLICY/ PROGRAM

RESIDENTIAL PARKING PERMITS (RPPS)

Somerville currently has more than 11,600 registered vehicles per square mile; roughly 7,600 more cars per square mile than Boston and almost 3,600 more than Cambridge. This means there is one vehicle to every 1.6 Somerville residents. In the Union Square plan area there are 5,202 registered vehicles and 5,175 off-street parking permits issued to residents.

Somerville's Residential Parking Permit program offers on-street parking passes to residents with a personal vehicle registered with the city for $40/year. This equates to about $0.62 per day. The Resident Permit Parking program has largely been successful in achieving its original purpose to mitigating spillover impacts from residents of other towns and cities parking on neighborhood streets.

The City's Department of Traffic and Parking does not currently cross-reference the number of permits issued per household with the actual number of curb parking spaces available on a block, street, or neighborhood. Somerville residents with an on-street permit are also permitted to park on any street across the city. This is an advantage enjoyed by many residents, but these two characteristics of the City's residential parking program can lead to a situation where on-street parking in residential areas becomes seriously congested because the program facilitates both intra-city commuting and over use of the on-street parking capacity of neighborhood streets.

Low-cost access to on-street parking for residents of new transit-oriented development can undo all of the benefit transit can provide. Traditional regulatory and pricing tools work well in busy mixed-use areas, but nearby residential areas are often the sources of the greatest complaints from residents concerned about the impact of new development.

Recommendations

- Consider restricting the availability of on-street parking permits for residents of new transit-oriented development. POLICY/ PROGRAM
- Consider whether it is still appropriate for on-street parking permits to be used city-wide. POLICY/ PROGRAM

DEMAND-BASED PRICING

Demand-based pricing of on street parking in commercial areas uses smart meters, sensors, and demand-responsive pricing to open up parking spaces and reduce circling and double-parking. Demand-responsive pricing adjusts parking rates

The Future of Technology & Mobility

In 2015, the National League of Cities published a report called *City of the Future* that explores existing trends and potential future developments in mobility technology with the specific purpose to help cities in mobility planning. "Creating a transportation network – a platform for commerce and human interaction – is one of the oldest and most important functions of government." Government must adapt to quickly changing preferences and technologies. Take a moment from reading this and think of something transportation related that is now obsolete because of advancement in technology (printing directions from MapQuest!).

There are four contributing factors to changing mobility: demographic and workforce trends, infrastructure finance, the growth of public and private mobility systems, and the availability of new modes of transportation. By 2020, all of the baby boomers will have reached pre- and early-retirement stages making millennials the largest segment of the workforce. Millennials have already shown a preference for non-automobile transportation. There is also a larger shift in how workers occupy workspace. Workbar has demonstrated success in Union Square because of this shift in non-traditional work patterns.

The growth of public and private mobility systems focuses on the increase in public transit options (rail and bus lines), an adjustment to the efficiency of these systems to reach the maximum amount of users, and an increase in Transportation Network Companies (TNC). The most popular TNCs are Uber and Lyft (you know them, the cars with pink mustaches). They, and possibly new players, will continue in popularity and broaden their services into related fields such as freight. Uber started with UberBlack only 5 years ago and has expanded into UberTaxi, UberX, and Uberpool.

New modes of transit are the most intriguing factor to changing mobility. Drivers are most likely accustomed to a Level 1 Autonomy rating: cruise control, automatic braking, and lane keeping systems. A driver can take hands or feet off of the wheel/pedals but never both at the same time. Level 2 autonomy allows a driver to remove both hands and feet at the same time, self-park technology is an example. Level 4 is full self-driving automation where the driver has no responsibility for safe operation of the vehicle (are they still called a driver?). By 2020, Level 4 autonomy cars will be available for wealthy consumers and industries seeing a return on investment of service fleets. By 2025, these vehicles will be available for more mainstream consumers. By 2030, commuters will likely board driverless buses.

Due to the cost in changing our mobility infrastructure, the physical form will mostly stay the same. However, it will continue to be used in different ways by cyclists,

car sharing, public transit, and TNCs. In the U.S., a lack of safety is the largest barrier to cycling. A street, redistributed to offer safe and dedicated space for cyclists, will increase cycling rates. Electric assist technology on bikes will decrease physical effort, another barrier to cycling.

After 2030, the rollout of driverless technology in private vehicle ownership, TNCs, and trucking with the use of on-demand technology will start having an impact on land use decisions. On demand vehicles will reduce the need for both on- and off-street parking. Today there are over 6,000 public and private (excluding driveways) parking spaces in Union Square.

All the while, modes will begin to better coordinate into a system of options in a more fluid manner than the current system. Users have already changed to an "app-oriented mindset" and expect information at the touch of a button. Apps of the future will better coordinate information and present/recommend options.

SOMERVISION

D.I.A.
The City should prioritize a connected regional transit network in decision-making around land use and development.

by the time of day, day of the week, and even block within the city. The idea is to charge the lowest possible hourly rate to achieve the right level of parking availability. In areas and at times when it is difficult to find a parking space, rates are incrementally increased in an effort to ensure that at least one space is always available per block. On a block where parking spaces are plentiful, rates are decreased to attract drivers to the available spaces in the neighborhood. Meters typically allow payment with coins, debit/credit cards, or local parking cards and typically interact with a smart phone app to alert drivers in real time about parking availability.

Recommendations

- Conduct a curbside parking management study to determine the steps necessary to implement demand based pricing for on street parking.

PARKING MANAGEMENT DISTRICTS

Finally, a number of possibilities exist for a parking management district in the Union Square plan area. A parking management district can be managed by the City, a parking management authority, a business improvement district, or a transportation management association. How each parking management district functions is always unique to each place, but in essence all of them provide public parking at a price and reinvest the revenue directly into improving parking and transportation in the neighborhood.

Montgomery County, MD offers a compelling example for Union Square. Montgomery County's Parking Lot District (PLD) program is financed though an enterprise fund. These funds generally mandate that developers in a certain district pay fees to a dedicated financing program in lieu of fulfilling minimum requirements for municipal parking. Through the enterprise fund, Montgomery County builds and operates government-owned parking structures. Enterprise funds are typically supported by a combination of ad valorem taxes, parking services fees, and parking enforcement. Through this program, Montgomery County operates more than half of the public parking in three of its largest central business districts — Bethesda, Silver Spring, and Wheaton — as well as in the Montgomery Hills community. Combined, these districts provide for over 20,000 public parking spaces.

Recommendations

- Facilitate the creation of a parking management district and enterprise fund to finance the construction and operation of municipal parking structures.

- Reinvest parking meter revenues for transportation improvements in the parking management district established for Union Square.

Establish New Connections

Union Square is a crossroads. Look at Union Square on a map and you'll see that the neighborhood is hub of crossing routes that lead to places like Harvard, MIT/Kendall, Porter Square, Sullivan Square, and Central Square in just under a mile. With some modes like cycling gaining popularity and with the anticipation of the Green Line Extension, investments in Union Square's connectivity will balance transit options for the plan area.

DELIVER THE GREEN LINE EXTENSION

In 2014 and 2015, the MBTA began bridge and track work for the extension of the 'D' and 'E' branches of the Green Line through Somerville. In early 2015, the MBTA and the federal government signed a full funding grant agreement to fund half, almost $1 billion, of the GLX project with a match from MassDOT. The project seemed well on its way to becoming a reality after so many years of advocacy and planning.

However, in the late summer of 2015, MassDOT announced that the price estimates for the Union Square spur and Washington Street stations were $400 million over budget. If that cost was extrapolated, that would make the entire GLX almost a billion dollars over budget when complete. Since that time, the City has been working with MassDOT to address the cost overrun and keep the Green Line Extension moving forward. MassDOT and its Board of

Directors set a deadline of mid-May 2016 to reach a decision on continuing the MBTA Green Line Extension. A spring decision is needed to mitigate the risk of excessive construction cost inflation during delays. If the Commonwealth decides to continue the project, major construction activities would resume in 2017.

Recommendations

- Continue to work collaboratively with MassDOT and the MBTA to develop an appropriate solution to the current cost overruns.

POLICY/ PROGRAM

INVEST IN BIKE SHARE

The denser the network of bike share stations will help to enhance cycling as an option for both short and medium length trips.

Recommendations

- Require development projects to provide and maintain service agreements for new Hubway stations strategically located throughout the Union Square plan area.

DEVELOPER AGREEMENT

- Locate a Hubway station near the Union Square Green Line station.

CAPITAL PROJECTS

INVITE WORKER SHUTTLES

In 2006, a study by Dr. Robert Cervero of UC Berkeley found that office workers are most likely to use transit if frequent feeder bus or shuttle service is available at one or both ends of the trip, if employers help cover the cost of taking transit, and if parking supply at the workplace is restricted.

Employee shuttles can increase productivity and general well-being by providing employees time to prepare for the day ahead, whether that is a chance to rest and relax, check email, or catch up on the news. By linking to transit services, employee shuttles help replace single-passenger car trips and reduce vehicle miles traveled. Additionally, employees routinely look at shuttles as an added benefit because they save money on gas and vehicle costs. This helps companies to entice new hires and reduce turnover, but also provides a less-expensive alternative to expensing mileage or building parking infrastructure.

Recommendations

- Encourage private services such as Bridj to provide service to Union Square from other regional locations.

POLICY/ PROGRAM

- Encourage employers to operate shuttle services to employment locations outside of a 1/4 mile from the future Union Square Station.

POLICY/ PROGRAM

ADVOCATE FOR THE "YELLOW LINE"

With the Green Line station in Union Square moving toward reality, the community has already begun to think about where other transit opportunities exist. Inter-urban connections, such as installing passenger rail on the existing Grand Junction Line (or the “Yellow Line”), would provide additional benefits for Union Square by connecting the neighborhood directly to East Cambridge, Kendall Square, MIT, Allston, Boston University, and, perhaps, even to North Station or Everett. Extending the Green Line from Union Square to Porter Square would further connect the MBTA system and provide easier access to points in Cambridge and communities along the Fitchburg rail line. In both cases, rail right-of-way already exists that is currently used for the commuter rail or moving trains between North and South Stations.

Recommendations

- Collaborate with key stakeholders to conduct a feasibility study for introducing passenger transit along the existing Grand Junction rail line as well as an off-street multi-modal path.

POLICY/ PROGRAM

- Engage in a value capture study along the Grand Junction line to determine the viability of privately funding the creation of the "Yellow Line".

POLICY/ PROGRAM

- Direct the Department of Capital Projects to ensure that infrastructure investment does not preclude transit expansion in the future.

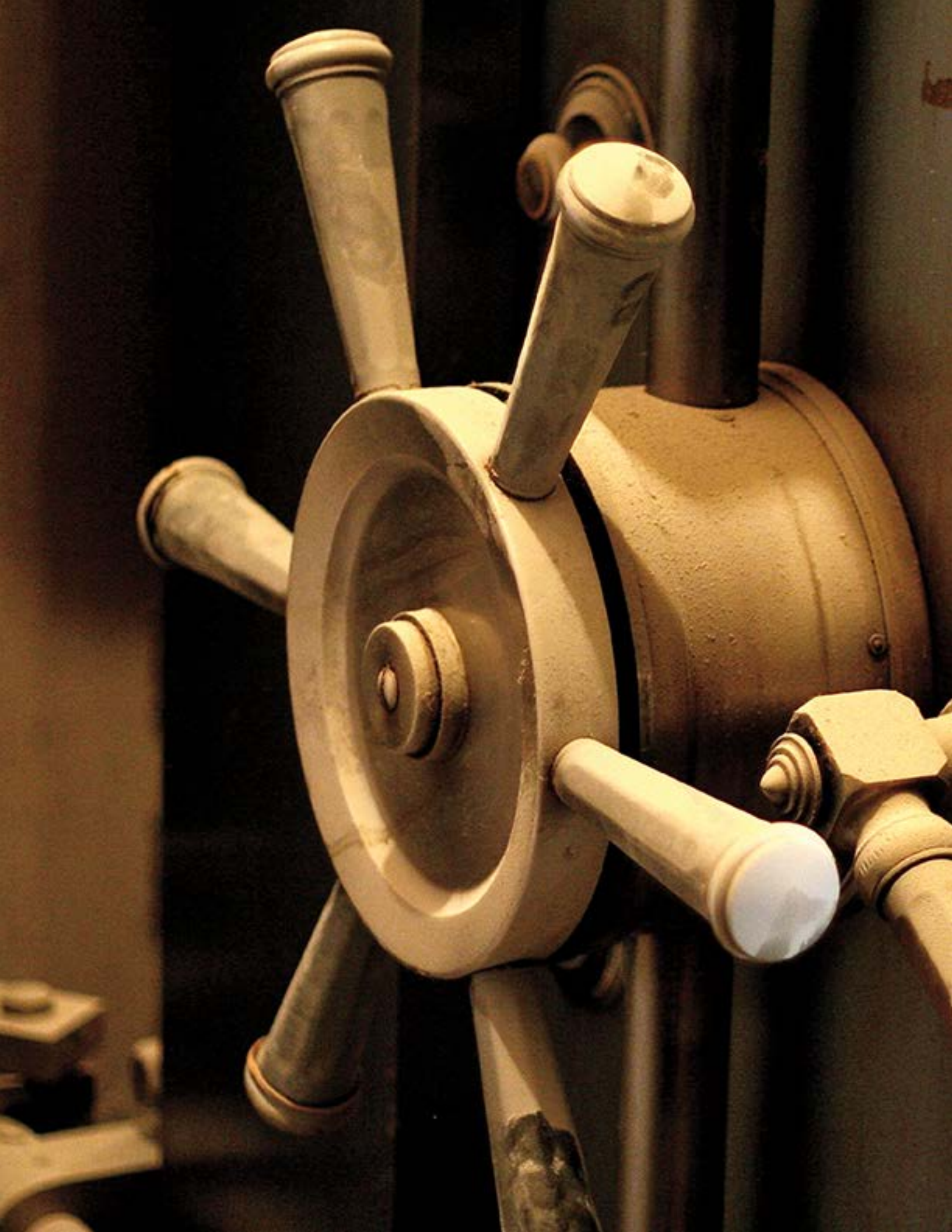
POLICY/ PROGRAM

SOMERVISION

D.I.D.
The City should advocate for improvements to the frequency of transit service, hours and user amenities along the MBTA bus and rail networks in Somerville.

D.II.A.
The City should implement transportation policies and programs that reduce automobile use.

D.III.C.
The City should preserve rights-of-way for auto-free, multi-use paths.



DEVELOPMENT IN UNION SQUARE

TABLE OF CONTENTS

Introduction

Where do you live?

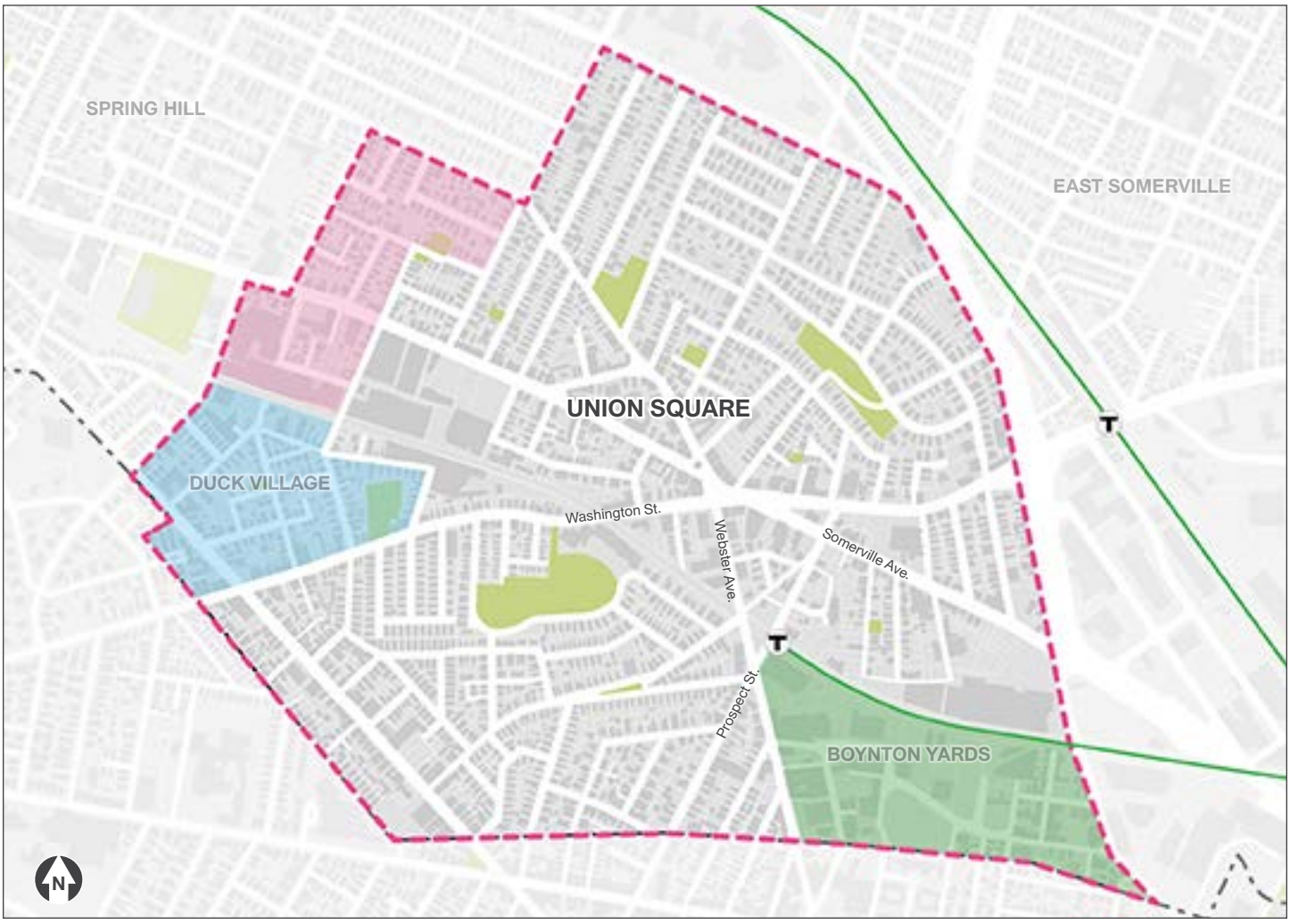
The Union Square plan area is 429 acres or 16% of Somerville's land area. Within the plan area are four distinct areas, Union Square proper (the largest area), Boynton Yards, a portion of the Spring Hill neighborhood, and Duck Village. The neighborhoods shown below reflect a survey done by Bostonography, a website for visual representations of life and land in Greater Boston. Bostonography has invited visitors of the site to 'map your neighborhood.' When enough people fill out the map, it's a new data set that shows how we collectively see Somerville. This is the first ever crowdsourced neighborhood data map for Somerville.

The Spring Hill neighborhood is aptly named for the hill it sits upon. Duck Village has a more interesting story. During the Prohibition Era, the name Duck Village stuck because people would "duck" into the densely populated area to avoid arrest. The Boynton Yards district is a named transformational area in SomerVision and is detailed in the next chapter.

DEVELOPMENT OPPORTUNITY AREAS

The SomerVision map identified the vision for future development in Somerville: conserve, enhance, and transform areas. The Union Square plan area represents all three areas. The majority of the land area in Union Square consists of the beloved residential neighborhoods of Somerville, neighborhoods that will be conserved. Single and two-family homes, triple-deckers, and a variety of apartment building types line the quiet residential streets. The opportunities found throughout the neighborhoods consists of policy and regulatory recommendations that can help to improve day to day life and the function of the streets, as well as minor public realm interventions that can improve pedestrian and bike safety.

The main streets like Somerville and Highland Avenues are noted as enhance in the SomerVision map. In enhance areas, many buildings and businesses will stay the same but some parcels will redevelop with the right planning and zoning.



The redevelopment plan identified a few, such as D7, the current Goodyear site on Bow Street. The redevelopment plan identified seven redevelopment parcels in enhance and transform areas.

There are other opportunity parcels called scattered sites. All are located in the enhance areas of the SomerVision map. As part of studies related to the comprehensive zoning overhaul, the City worked with RCLCO, an economic development and real estate consulting firm, on an economic impact analysis. Their analysis helped identify sites that were more likely to develop than others. This analysis only takes into account the existing buildings, not the uses present or any personal motives of property owners. The scattered sites study was particularly important to some residents of Union Square because of the proximity of these sites to residential neighborhoods compared to development in Boynton Yards.

The Greyfield Redevelopment area is identified as a transform area of the SomerVision map. Currently this is the Target, Walnut Street Center (recently purchased by the MBTA for staging during Green Line Extension construction), and across the street, Burger King. Greyfields, by definition, are outdated and/or underutilized land. They were named greyfields after the sea of asphalt that normally accompanies development of this nature. The project team named this area Milk Square as a placeholder name to honor the original name of Somerville Avenue, Milk Street.

Improving the Street Network

Improving flow and reconnecting across former barriers

The core of Union Square's street network is designed as a multi-lane, one-way 'bow tie' where Somerville Avenue, Washington Street, Webster Avenue, and Prospect Street all restrict travel as a one-way couplet. These streets are confusing, switch direction back and forth from one way to the next. To stay on Somerville Avenue heading east you have to turn left. To stay on Washington Street heading west you have to turn right. Traffic in any direction is forced onto the same streets and the resulting congestion frustrates drivers, delays buses, and puts both pedestrians and cyclists at risk.

In 2016, the City will return Prospect Street and Webster Street, from Somerville Avenue to their crossing, to two-way traffic for the first time in decades. By re-striping the streets and installing new traffic signals on an interim basis, the City will test the removal of unnecessary traffic movements to inform a more formal and permanent design to alleviate congestion and improve traffic flow in the future.

Along the eastern edge of the Union Square plan area is the infamous Route 28, a six-lane divided highway better known as McGrath Highway. A portion of Route 28, The McCarthy Overpass, is an elevated section, or viaduct, between the Squires Bridge at Medford Street and the bridge over the Fitchburg Commuter Rail Line in Boynton Yards. The primary purpose of this structure is to allow north-south traffic to bypass east-west traffic on Washington Street.

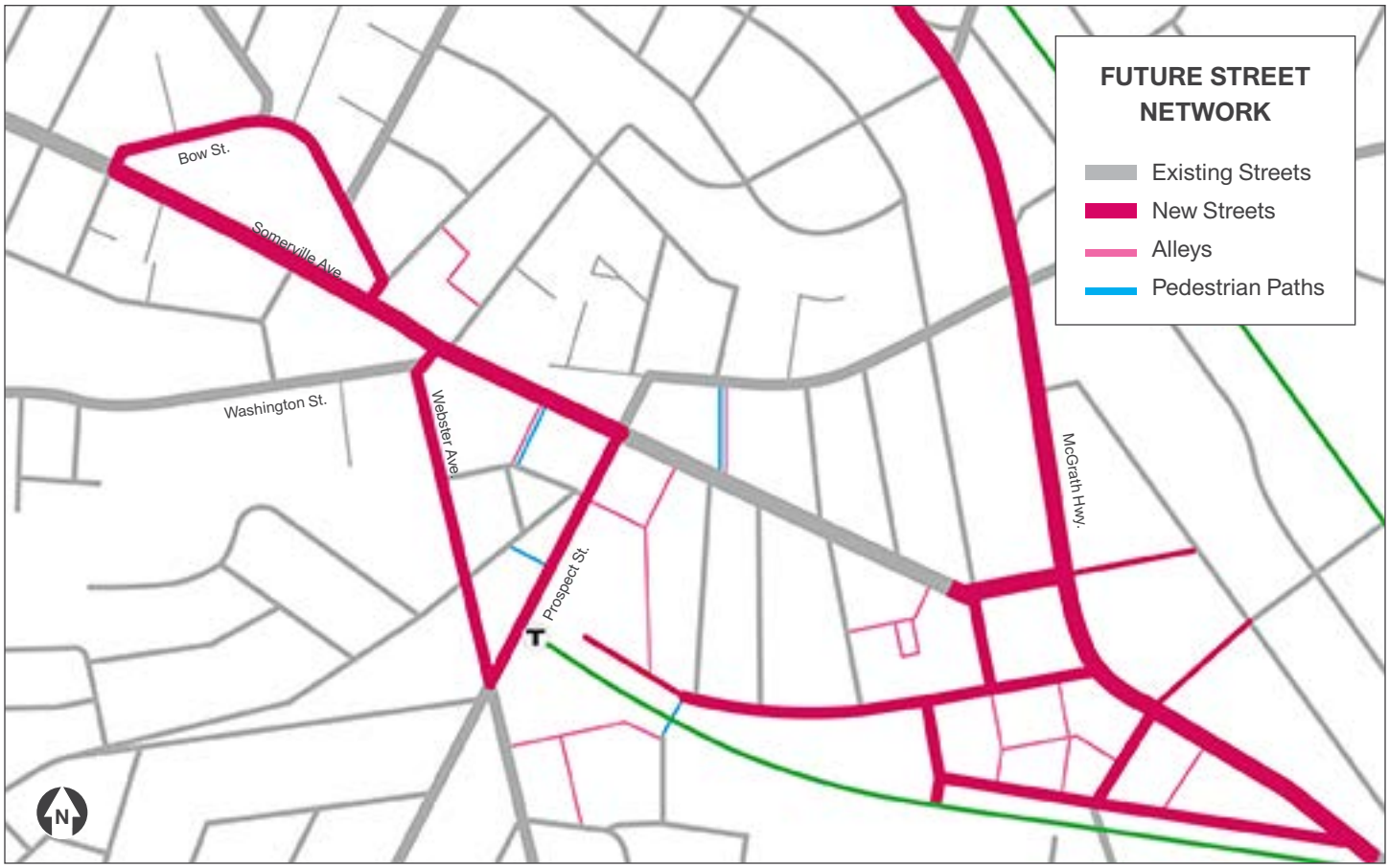
In the past few years, MassDOT has repaired the aging overpass and improvements to the on and off ramps and cycling facilities are near completion. Over the long term, MassDOT will replace the elevated McCarthy Overpass with an at-grade urban boulevard solution from the section of Route 28 between Broadway in Somerville to Third Street in Cambridge.

A CONCEPT FOR THE FUTURE

The following pages include specific strategies for improving walking and cycling in Union Square, along with conceptual designs to further improve the design of our streets. Although well informed, these designs are intended to demonstrate possibility. Each street will need proper surveying and engineering to implement an appropriate design. Chapter 3 establishes many goals for the streets of Union Square, but the primary objectives are to return the main streets of the square to two-way traffic and introduce a street network on the eastern side of the Union Square plan that stitches the neighborhood back together with East Somerville and Brickbottom, a connection that existed prior to Route 28.

ABOVE: Existing street network in Union Square.

BELOW: Proposed street network in Union Square.



Improving Walkability

Making the Cheapest Form of Transit the Most Enjoyable

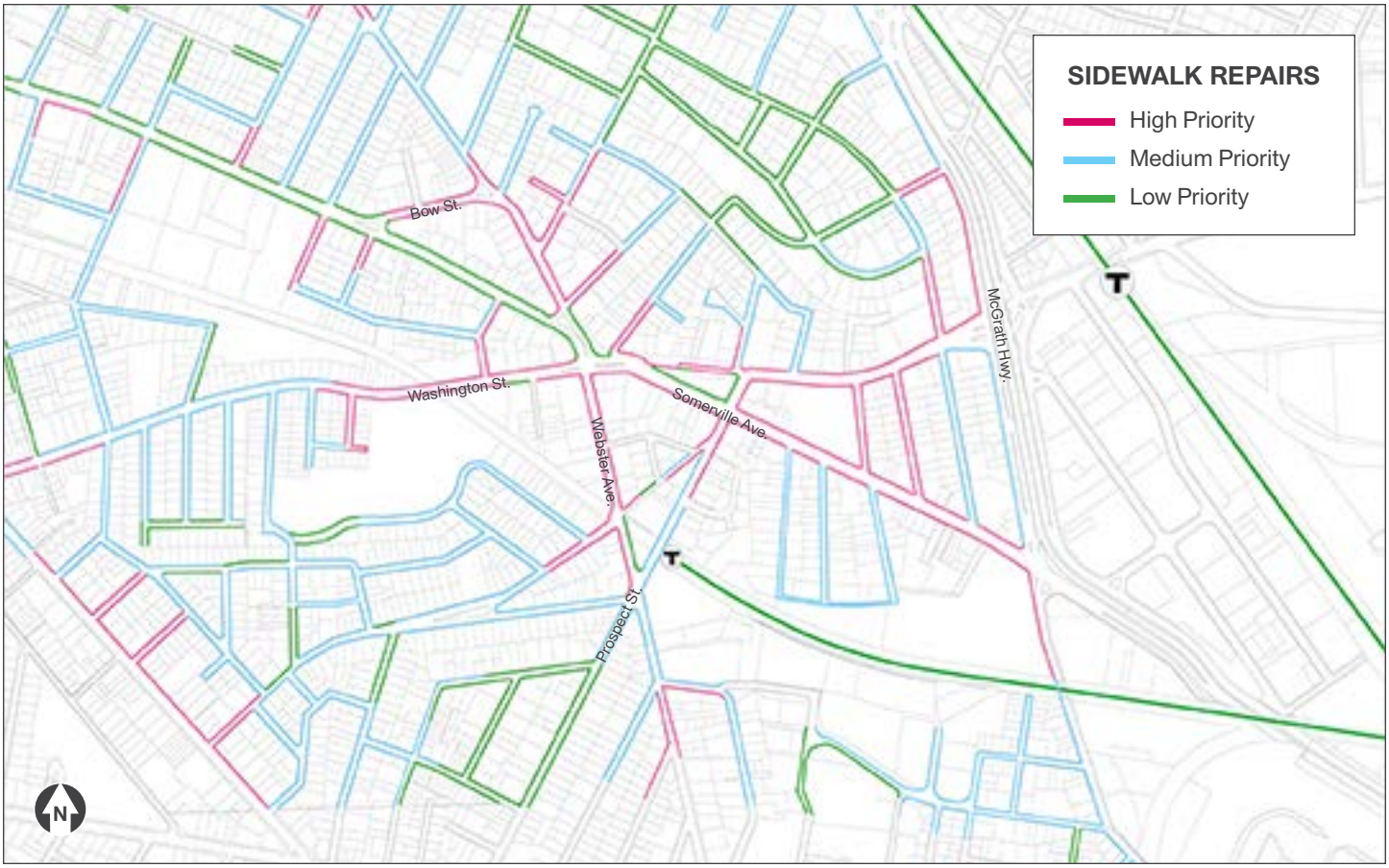
Somerville is ranked as one of the most walkable municipalities in the Unites States by walkscore.com. This honor reflects our city's historic development pattern of small, close-knit residential blocks and mixed-use neighborhood squares distributed frequently throughout the city. Somerville owes this pattern to a time period when cities were built at the human scale, before the automobile entered the picture. Today only 5% of Somerville's residents live more than a five-minute walk from most of their daily needs.

Somerville's high rate of walkability is also a result of targeted public policy decisions. Over the past 10 years, the City of Somerville has prioritized its pedestrian environment by instituting progressive policies and backing them up with meaningful capital investments. When asked 'what kind of community does Somerville want to be?" Mayor Curtatone spreads a message reflecting our residents desire to make Somerville the most walkable city in the United States.

In his book Walkable City, Urban Designer Jeff Speck, a Massachusetts-based national expert on walkability, explains that to build a city that is appealing to pedestrians, our streets must provide a walk that is simultaneously useful, safe, comfortable, and interesting. Furthermore, Speck advocates that walkability is the most important factor in building a city that supports public health, economic competitiveness, and environmental sustainability.

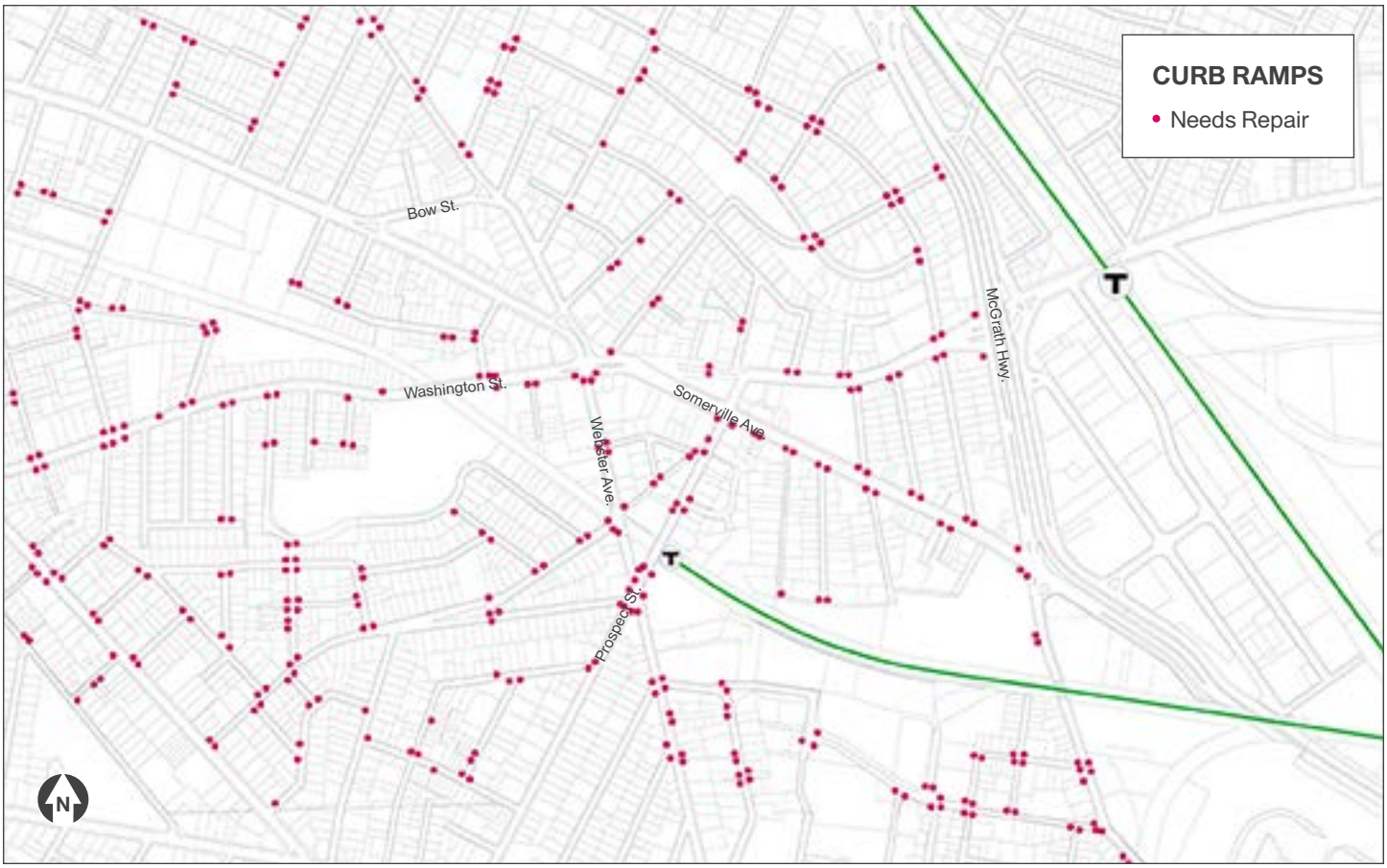
Many of Speck's 10 Steps to a Walkable City are already in place in the Union Square plan area. The urban fabric surrounding the future Union Square station of the Green Line has strong density, short blocks, diverse civic spaces, and daily and weekly needs within a reasonable distance of most homes. The main thing that is lacking is local jobs. Despite the neighborhood's highly walkable characteristics, most people still have leave on a daily basis to go to work.

Redevelopment efforts in the plan area are focused on positioning the area to become a new Urban Employment Center type of station area (see page 44). This employment center will eventually include almost 15,500 new jobs and 2,500 new housing units. These new residents and employees will bring a whole new world of pedestrian activity to Union Square and Boynton Yards rivaling Davis Square's vibrancy. But we don't need to wait for redevelopment to invest in walkability. The City's Neighborhood Street Reconstruction Program is already improving the public realm for existing residents and workers to promote a vibrant public life and deliver on the promise to make Somerville a city that puts pedestrians first.



ABOVE: Using the 2013 Pedestrian Accessibility Study, an input in the Neighborhood Streets Reconstruction Program, surveyed and catalogued existing sidwalk conditions. Sidewalks needing repair were ranked based on their proximity to a train station (existing or proposed) and their proximity to a high pedestrian parcel.

BELOW: Using the 2013 Pedestrian Accessibility Study, an input in the Neighborhood Streets Reconstruction Program, existing sidewalk ramps were surveyed and cataloged. Ramps needing repair to comply with MAAB standards were identified.



Improving Cycling

Embracing Protected Bikeways

It's official. Bicycling is the most efficient way to get from Union Square to Downtown Boston. In 2015, the third annual Rush Hour Race, put travel modes to the test by pitting a Hubway rider, a cyclist on their own bike, a transit rider and a driver against each other on a timed trip from Downtown Boston to Union Square. According to the organizers, the cyclists finished 13 and 11 minutes faster than both the T rider and driver, which finished seconds apart from one another. However, for many people cycling on our city streets can be one of the most harrowing of life's experiences.

FOCUSING ON BICYCLING COMFORT

In 2005, the Transportation Department for the City of Portland, OR was the first to classify the different types of cyclists that exist within a population: the Strong and Fearless (<1%), Enthused and Confident (7%), Interested but Concerned (60%), and No Way, No How (33%). Since then, their research has change the way towns and cities plan for cyclists across the United States.

Strong and Fearless cyclists are the smallest in number but the strongest riders and not deterred by conditions in any way. Enthused and Confident cyclists, a small portion of any population, are comfortable sharing the roadway with automobiles, but they prefer their own facilities. This demographic is the primary reason cycling has grown over the last 10 years. By adding facilities, cities have been able to tap into this group. The Interested but Concerned group is the largest in number and curious about cycling. They are currently mostly riding bicycles for recreational purposes. The last group, No Way, No How, is self-descriptive, but hurdles to cycling are not only based on attitude and ability, but topography and weather can also be a deterrent for many. Although the differences are not hard and fast, these categories have proven to be a fair representation of the spectrum of riders from within any given population.

No matter the category, surveys have found that the number one reason that many people do not consider bicycling as a valid means of transportation is because they are afraid to be on the same roadway as automobiles. Achieving SomerVision's goal for 50% of trips to be via transit, cycling, or walking will require making our streets, wherever we can, as safe and comfortable for the Interested but Concerned group of the population. To tap into this largest group of potential cyclists, Somerville will need to make transformative investments in bicycle infrastructure - and that can begin in step with redevelopment in Union Square.

TYPES OF CYCLISTS

STRONG AND FEARLESS (<1%)

Comfort Level

- Identifies as a 'cyclist' and riding is a strong part of their identity
- Generally undeterred by roadway or weather conditions
- Comfortable without bike lanes
- Commutes by bicycle to work

ENTHUSED AND CONFIDENT (7%)

Comfort Level

- Comfortable sharing the roadway with automobile traffic
- Prefers operating in dedicated bicycle facilities
- Attracted to streets that work well for bicycling
- Appreciates bicycle lanes and bicycle boulevards

INTERESTED BUT CONCERNED (60%)

Comfort Level

- Likes to ride a bicycle, but is afraid to ride among automobiles
- Prefers quiet neighborhood streets, fully protected bikeways, and off-street paths
- Rarely ventures onto arterial streets
- Concerened about potential injury

NO WAY, NO HOW (33%)

Comfort Level

- Currently not interested in bicycling at all
- Uncomfortable on a bicycle

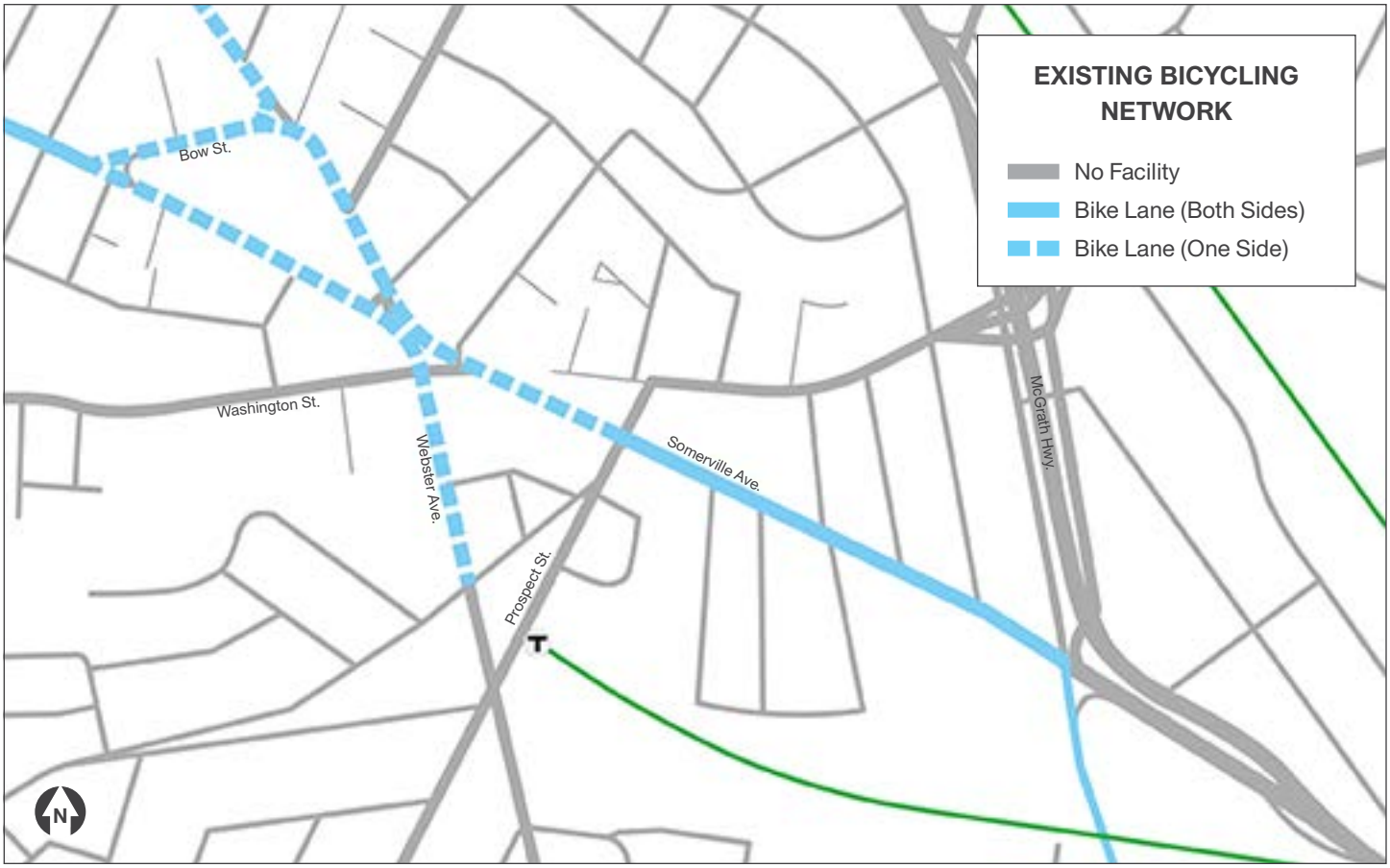
During Toronto's 2014 elections, an activist-led campaign focused many candidates on a meaningful transportation policy to create what international walking and bicycling advocate Gil Penalosa calls a #MinimumGrid. This initiative is focused on making biking a viable transportation option by creating a fully connected grid of protected bikeways on busy streets and bicycle boulevards through quiet neighborhoods. Penolosa encourages cities to move past the 'nice-to-haves' like signage, maps, bike racks, and shelters that make it nicer to cycle for the 1 to 2 percent of people that are already biking. The nice-tohaves won't deliver the broader public benefits that come from making cycling mainstream.

Protected bikeways are a category of bicycle facility that separates bicyclists from motorists. They can be at road or sidewalk level and separation can be created in a variety of ways including parked cars, plastic posts, raised curbs, or even planters. The means of separation can even change along a route depending on the width available and the design of intersections.

In Boston, a cyclist named Jonathan Fertig created a separated bike lane on Massachusetts Avenue using simple potted plants after growing frustrated with motor vehicles entering the standard painted bike lane. More permanent versions of protected bikeways can be found on Western Avenue and Vasser Street in Cambridge, both at sidewalk level. By fall of 2017, the City of Somerville will also have its first protected bikeway on Beacon Street.

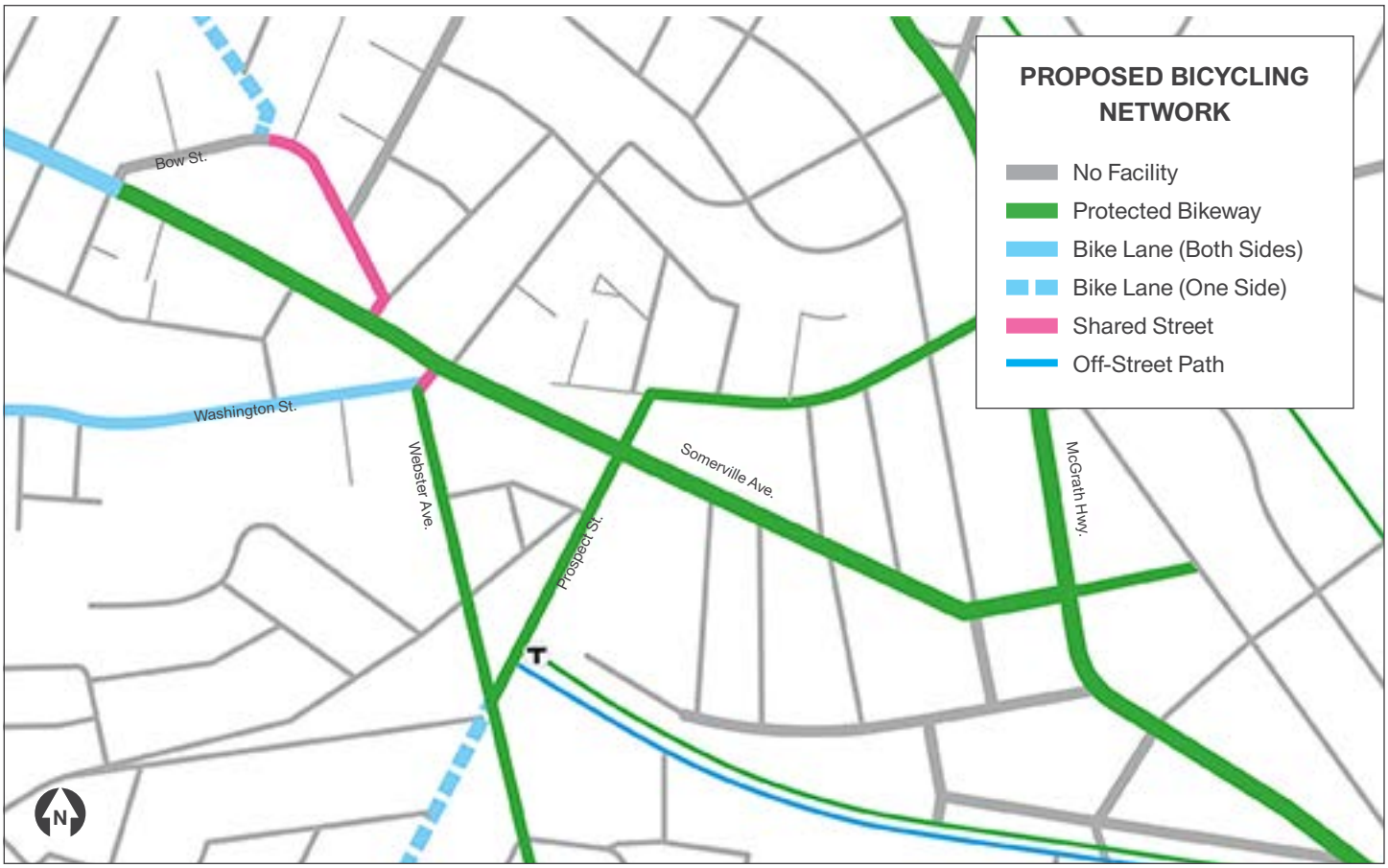
PeopleForBikes, a charitable foundation established by a coalition of bicycling advocates, has helped disseminate information to the public on making bicycling a valid means of transportation that is safe and enjoyable for everyone. Research has found that protected bikeways reduce the risk of injury by up to 90% when compared to standard, unprotected bike lanes. By removing or reducing the sense of fear involved with sharing a travel lane with an automobile, research shows that within the first year after installation, a protected bikeway facility increases bicycle ridership by 75% on average.

Not every street in Somerville is wide enough for a protected bikeway, but sharrows and even bike lanes will not encourage riders afraid of riding along side automobiles to change their travel behavior. The maps to the right identify the existing bicycling network and streets in the Union Square plan area with enough existing right of way width to accommodate a protected bikeway facility of one type or another.



ABOVE: Existing street network in Union Square.

BELOW: Proposed street network in Union Square.



Completing the Main Streets

Balancing the Streets for All Modes of Travel

The Transportation & Infrastructure Division (T&I) of the Mayor's Office of Strategic Planning and Community Development (OSPCD), the Traffic & Parking Department (T&P), and the Engineering Office of the Department of Public Works (DPW) work collaboratively to ensure the City's streets are safe and designed for all users. The Somerville Complete Streets Ordinance, the first of its kind in Massachusetts, states: "Complete Streets are designed and implemented to assure safety and accessibility for all the users of our streets, paths and transit systems, including pedestrians, bicyclists, transit riders, motorists, commercial vehicles, emergency vehicles and for people of all ages and of all abilities." By adopting this ordinance, the City is committed to incorporating Complete Streets planning and design "into public transportation projects in order to provide appropriate accommodation for bicyclists, pedestrians, transit users and persons of all abilities, while promoting safe operation for all users, in comprehensive and connected networks, in a manner consistent with, and supportive of, the surrounding community."

A PEDESTRIAN-FIRST HIERARCHY

To implement this Complete Streets policy, the City is advancing a pedestrian-first modal hierarchy. All transportation projects and programs, from scoping to maintenance, will favor pedestrians first, then transit riders, cyclists, and motor vehicles. This will rebalance Somerville's streets to make them more 'complete,' reversing generations of automobile-focused planning and design at the expense of all other transportation modes. This pedestrian-first modal hierarchy resets the default premise for transportation projects in Somerville by acknowledging that every trip begins and ends as a pedestrian.

IMPLEMENTATION

Adopting a complete streets ordinance is a good start in the effort to make the streets of Somerville a more equitable environment for all users. This type of policy provides guidance to government departments, consultants, developers, and community groups for the planning, design, construction, and operation of our transportation system. An important thing to remember when thinking about the design of our streets is that mobility is a means to an end. Achieving our goals for environmental sustainability, improved public health & safety, social equity, economic activity, and vibrant public life won't happen without actually moving beyond an ordinance and actually building complete streets.

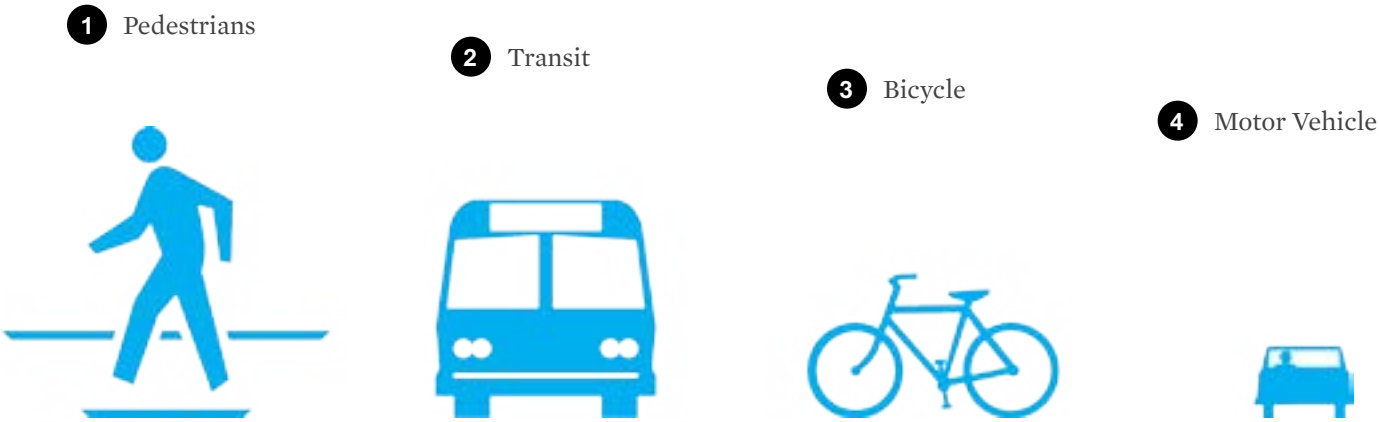
The following pages explore the four major main streets in the Union Square plan area: Somerville Avenue, Washington Street, Webster Avenue, and Prospect Street. Each of these streets plays an important role in the overall street network and even different segments along each of their lengths sometimes serve very different purposes. While surveying and engineering analysis is necessary to design a full street reconstruction project, the street sections and streetscape diagrams that follow provide proof that each of these streets can be improved to meet the needs of all users.

FACING PAGE:
TOP: A graphic from the Boston Complete Streets Guidelines.

LEFT: A family crosses Bow Street in front of Citizens Bank.

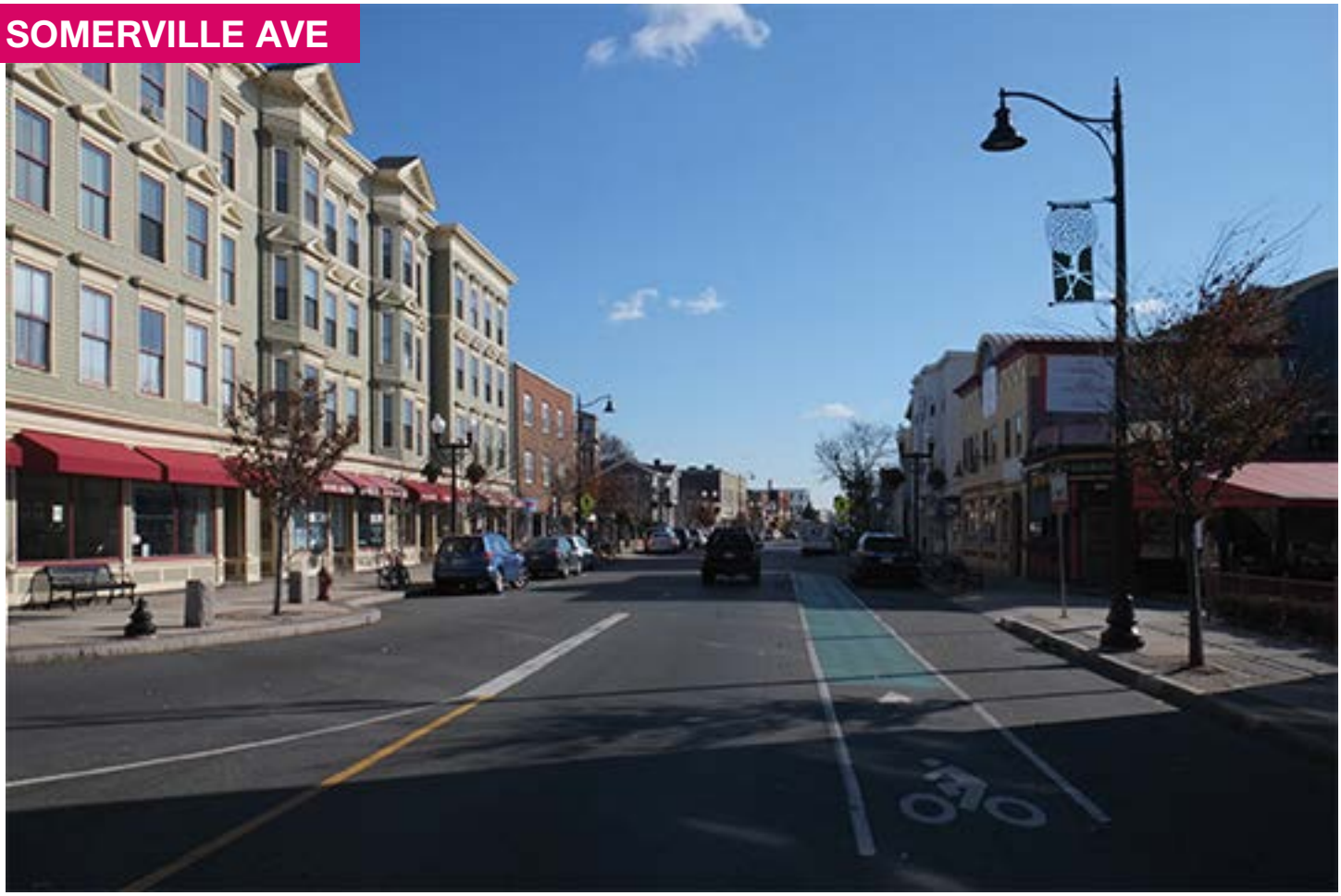
MIDDLE: A cyclist on Somerville Avenue during the morning commute.

BOTTOM: Webster Avenue looking towards the Square




STOP

SOMERVILLE AVE



Somerville Avenue stretches across Somerville from Porter Square to McGrath Highway. There are three distinct segments in the plan area: Church to Bow Street, the Union Square plaza, and from Union Square to McGrath Highway.

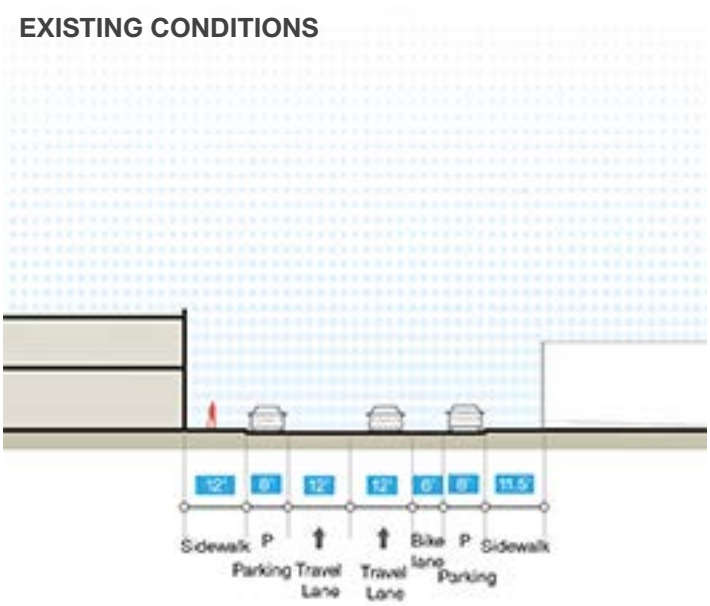
The stretch from Church to Bow Street was created around 1830 after marshlands were filled in. The new street segment was intended to serve as a "straight shot" instead of taking the existing bend in the road, present day Bow Street. This reconfiguration added a new main street to Union Square. Infill buildings followed but not of the same quality of the buildings on Bow Street. Several of these buildings, however, serve as important development markers in the area by reflecting the architecture popular at the time of their construction in the late 19th and early 20th centuries.

The other two segments of Somerville Avenue are two-way but have their own challenges. The stretch of Somerville Avenue fronting the Union Square plaza is plagued by traffic. The southern side is cut off from the bustle of the Square. The right-of-way is wide with no pedestrian connection except at the edges. Past the intersection of Prospect and Washington Streets, retail struggles because the road is too wide.

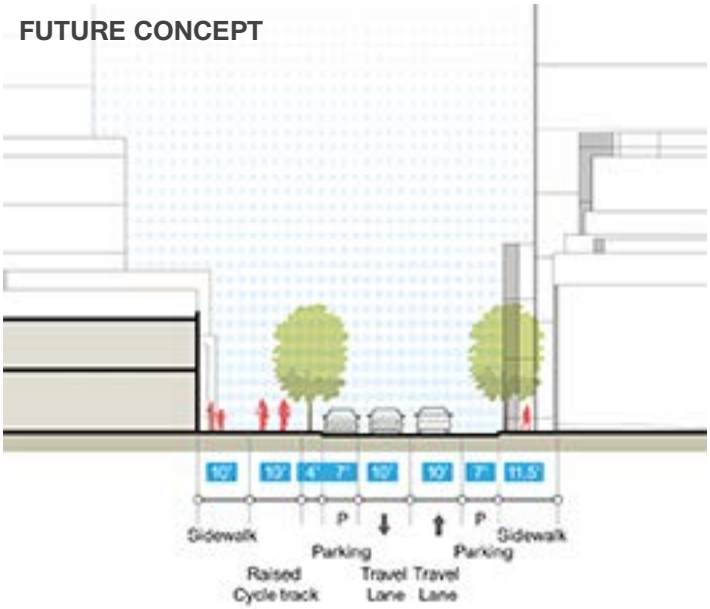
Independent retail and restaurants thrive when they are located fronting on a slow moving, two-way, customer-friendly street. This is the ultimate priority for the entire length of Somerville Avenue. The one-way section of Somerville Avenue between Church and Bow Streets is an auto-centric design to get automobiles through the square as quickly as possible. Union Square Main Streets emphasized the need for "revitalization...the lack of which already impacts the ability of current businesses on this stretch of Somerville Avenue." Converting this stretch of Somerville Avenue back to two-way, as well as creating/maintaining cycling facilities, increasing sidewalk widths, and improving connectivity will increase the positive experience of users and therefore the chances of success for small businesses.

Studies from Portland, Oregon to Melbourne, Australia show that people walking or biking spend more on average than motorists. In East Village, New York, spending by non-drivers accounted for 95% of all retail spending in the area. In San Francisco, researchers found that non-driving shoppers spent more per month than drivers because they visited the area more often. The changes presented in this plan will create a customer-friendly street and revive struggling sections of Somerville Avenue.

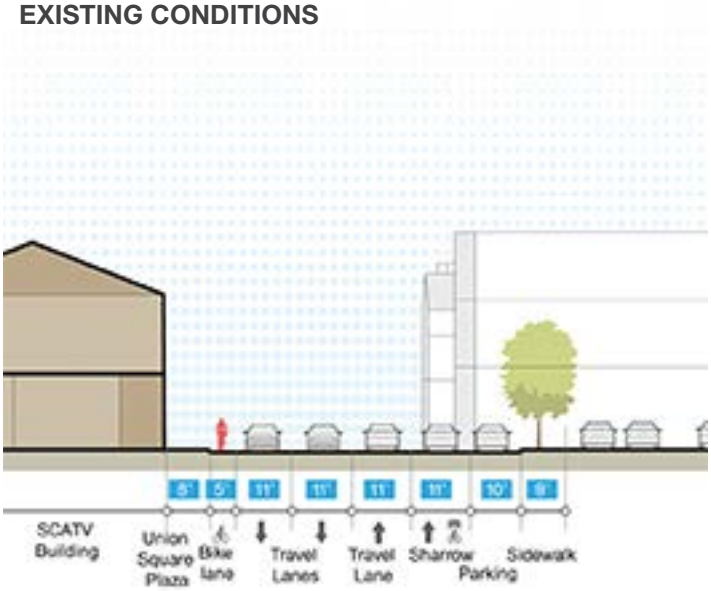
EXISTING CONDITIONS



FUTURE CONCEPT



EXISTING CONDITIONS



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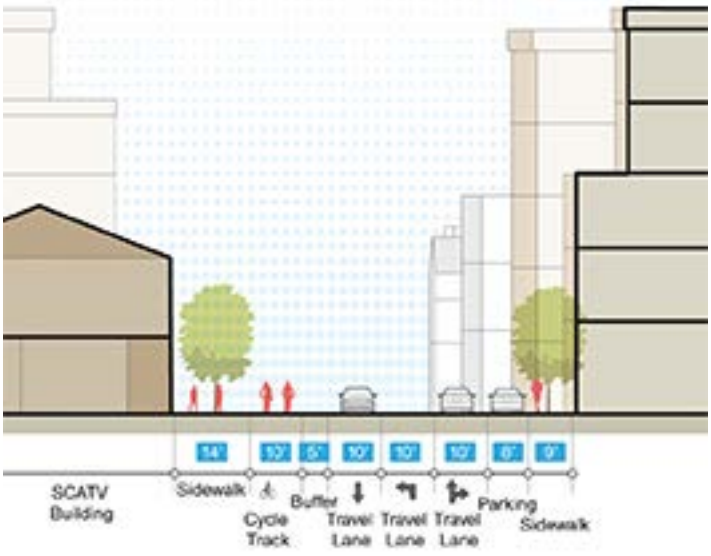
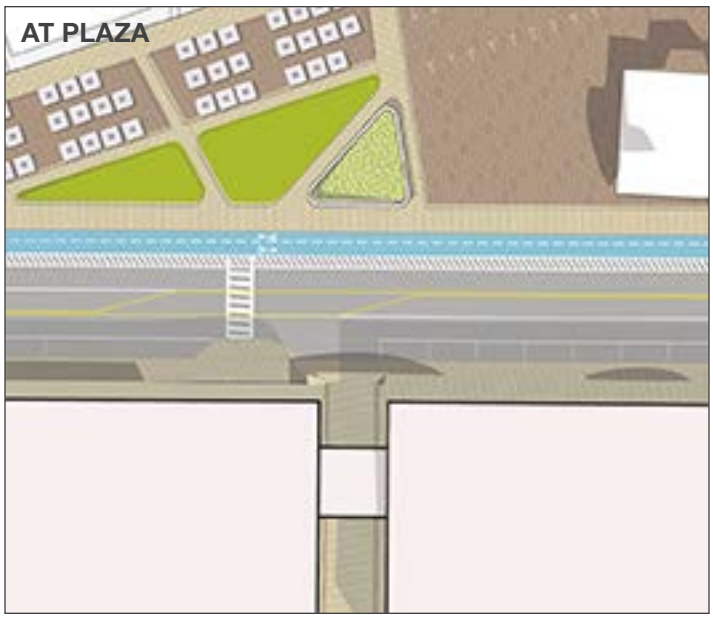


AT 345 SOMERVILLE AVE.

AT PLAZA



WASHINGTON ST

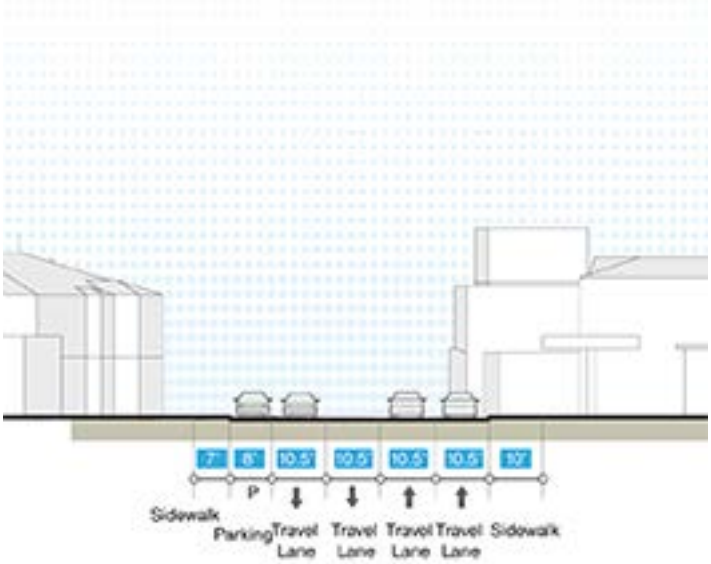
Washington Street connects Harvard to Sullivan Squares and is one of the main streets of Somerville. The street changes context over its extents, from the Cambridge line, to residential in between Beacon Street and Union Square, to a commercial corridor between Union Square and McGrath Highway where the plan area ends.

The west section of Washington Street connects Union Square to Harvard. Argenziano School, a hub for families with K-8 children, and Lincoln Park, the largest city owned park, are also along this stretch of Washington. The street is minimally lined – even the centerline is missing. Cars stack up during peak commute times leading into Union Square, making conditions more precarious for those on foot or bike. Any redesign of the street should encourage users of all ages and abilities to walk or bike. Adequate sidewalk widths and bike facilities are important to prioritize users. They will also buffer existing residents from the street. Street trees will improve the pedestrian experience by providing shade.

The east section of Washington Street connects Union Square to Sullivan Station. The D1 and D5 redevelopment parcels have frontage on Washington Street. Currently the sidewalks are annoyingly narrow and the street is wide. Improving the pedestrian and cyclist experience on this side of the square is essential to correcting the imbalance of space. Increased sidewalk widths will allow for free movement of pedestrians including people with mobility impairments or parents with strollers and space for bus stops. Bicycle facilities will designate space for cyclists in an area that is currently too treacherous for most riders. Lastly, increased sidewalk widths, bike facilities, and parking opportunities are essential to improving the viability of first floor neighborhood serving retail uses.

Improvements on Washington will be part of a larger network of complete streets in Union Square.

EXISTING CONDITIONS



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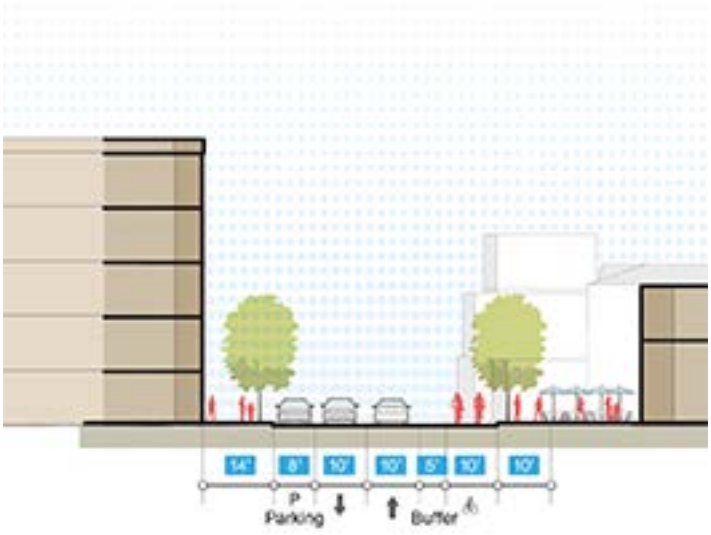


PROSPECT ST

Prospect Street connects Union Square to Central Square in Cambridge. Prospect Street will be changed to two-way and re-striped to include bike lanes in the summer of 2016. However, the condition and width of existing sidewalks is poor. The electrical distribution facility on the west side of the street will stay. The D2, D6, and portions of the D4 redevelopment parcels all have frontage of Prospect Street.

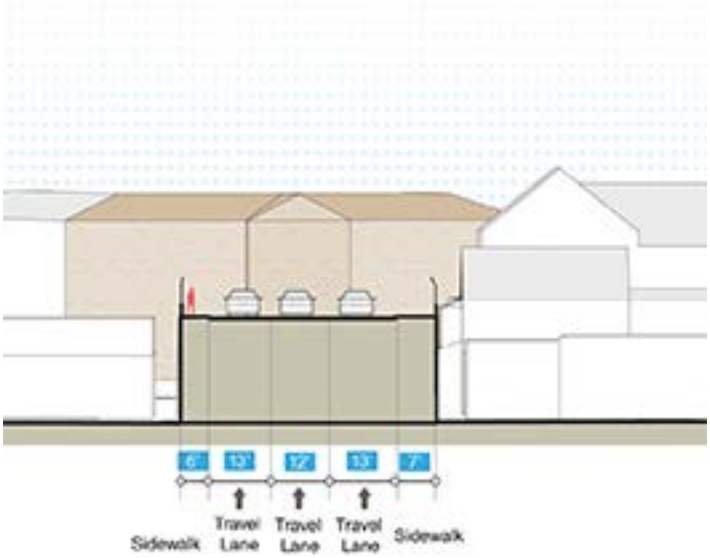
Any improvements will build on the interim work of 2016. The redesign of the Union Square T station entrance will affect the implementation of the priorities for Prospect Street and may require further changes. As of right now, redesigns for the station do not include a headhouse at street level. This means that everyone arriving at the station will enter through the plaza envisioned in front of D2 (see page 182).

The sidewalks must be widened to accommodate the increase in pedestrian activity on Prospect Street expected from the train station and new development. Connectivity to the T station from the areas west of Prospect, like the pocket neighborhood of Everett, Newton, and Emerson Streets, without having to walk up to Somerville Avenue is important. The crosswalk will also lead people to better pedestrian amenities on the other side of the street.

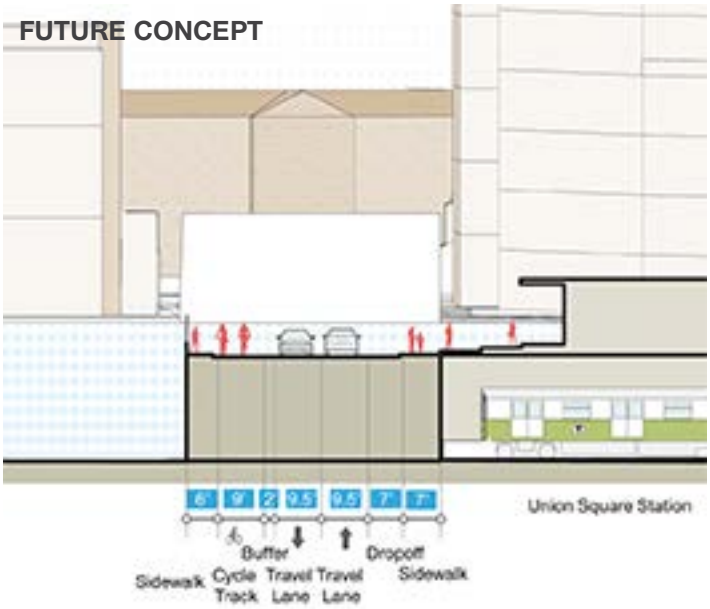
There are two challenges on Prospect Street. The bridge, owned by MassDOT, will not be rebuilt soon but serves as the westerly connection between Union Square and Boynton Yards. The sidewalks on the east side of the bridge should be widened to connect the community to the jobs center in Boynton Yards. The current fence needs to be removed, pedestrians don't need to be caged in. As Union Square and Boynton Yards develop, the bridge will be one of the only places to view both neighborhoods. In addition, this sidewalk is also a place to look up and view the Prospect Hill Tower.

The other challenge is the transformer site owned by Eversource. It should be screened. The screening material (or screening itself) provides a huge opportunity for new public art in Union Square.

EXISTING CONDITIONS



FUTURE CONCEPT



WEBSTER AVE

Webster Avenue connects Union Square to Kendall Square and MIT. This is especially true for cyclists. In the last three city bicycle and pedestrian counts, an average of 196 cyclists were counted in one hour during the morning commute. The first segment of Webster Avenue, from Somerville Avenue to Prospect Street will be changed to two-way and re-striped to include bike lanes in the summer of 2016. The other segment of Webster Avenue runs from Prospect Street to the Cambridge city line. The crossing of Prospect Street and Webster Avenue is challenging for pedestrians. A portion of the D4 redevelopment parcels front Webster Street. The area between Newton Street and Concord Avenue has the most challenging sidewalk condition.

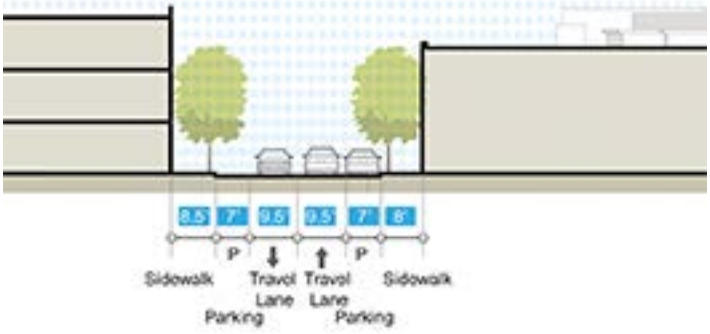
Currently, parking on Webster Street from Prospect Street to the Cambridge city line is two hour parking. In a meeting with property owners at 429 Norfolk Street, they mentioned that these spaces were generally empty except from Thursday through Sunday when valet services from Inman Square used the spots!

Any improvements made to Webster Avenue will build on the interim improvements of 2016. A bike facility is necessary on the entire length of Webster Avenue because of the frequency of bike travel, especially in the southbound direction. The cycling route should also provide safe left turn access for cyclists into Boynton Yards.

The crossing of Prospect Avenue and Webster Avenue needs improvement. The existing slip lane, the sepArated turn lane from Webster Avenue to Prospect Street isn't necessary after the two-way improvements. Closing the lane makes the intersection smaller. New crosswalks are more square with the intersection which makes pedestrians more visible.

Where narrow, sidewalks need to be widened due to an anticipated increase in pedestrian traffic. In particular, the sidewalks in front of D4 need to be completely rebuilt without highway details like the existing guardrail. Sidewalks, south of Prospect, need to be widened including crossings to provide access into Boynton Yards.

EXISTING CONDITIONS



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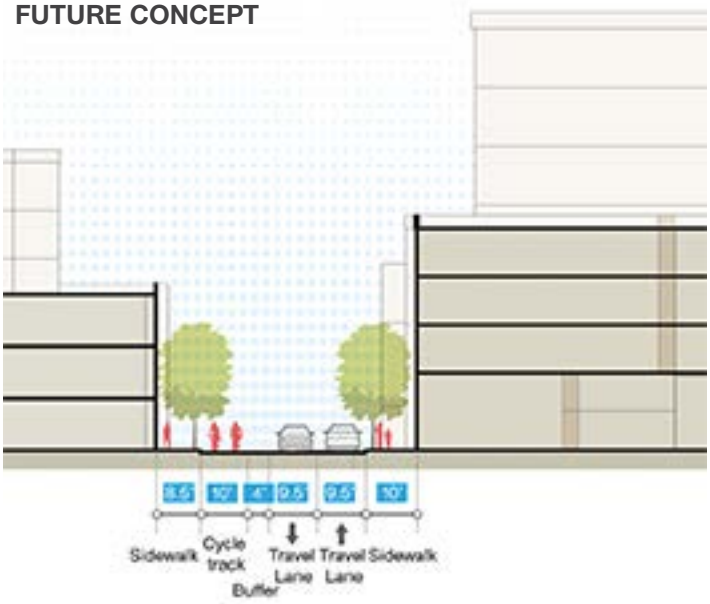


Calming the Neighborhood Streets

Twenty is Plenty

Everyone with a motor vehicle has their tricks. If they didn't have their tricks the Waze app (the largest community based traffic and navigation app) might have taught them a thing or two by now. In a 2014 NBC Today Show news segment focusing on Waze, residents that were interviewed complained about new traffic on their street but a few also admitted to using the app. Generally speaking, people get frustrated sitting in traffic and look for a way out. They take their frustration out on the residential streets that take them past the snarled intersection. It wasn't the Waze app that started this phenomena. Signs like 'drive like your kids live here' have been around much longer.

High traffic volume through residential streets is usually related to a poorly planned street network. High speed is generally related to poorly street design. Both of these topics were mentioned by members of the community during the Union Square neighborhood planning process.

Local residential streets are central to the feeling of community, so it is no wonder that residents all recognized the absolute necessity for safe neighborhood streets. Many highlighted existing safety concerns due to current and proposed roadwork as well as increased pedestrian activity when the train station opens. Participants acknowledged the need for street designs that would force cars to slow down to increase pedestrian safety and quality of life for residents and visitors alike.

VEHICULAR SPEEDS

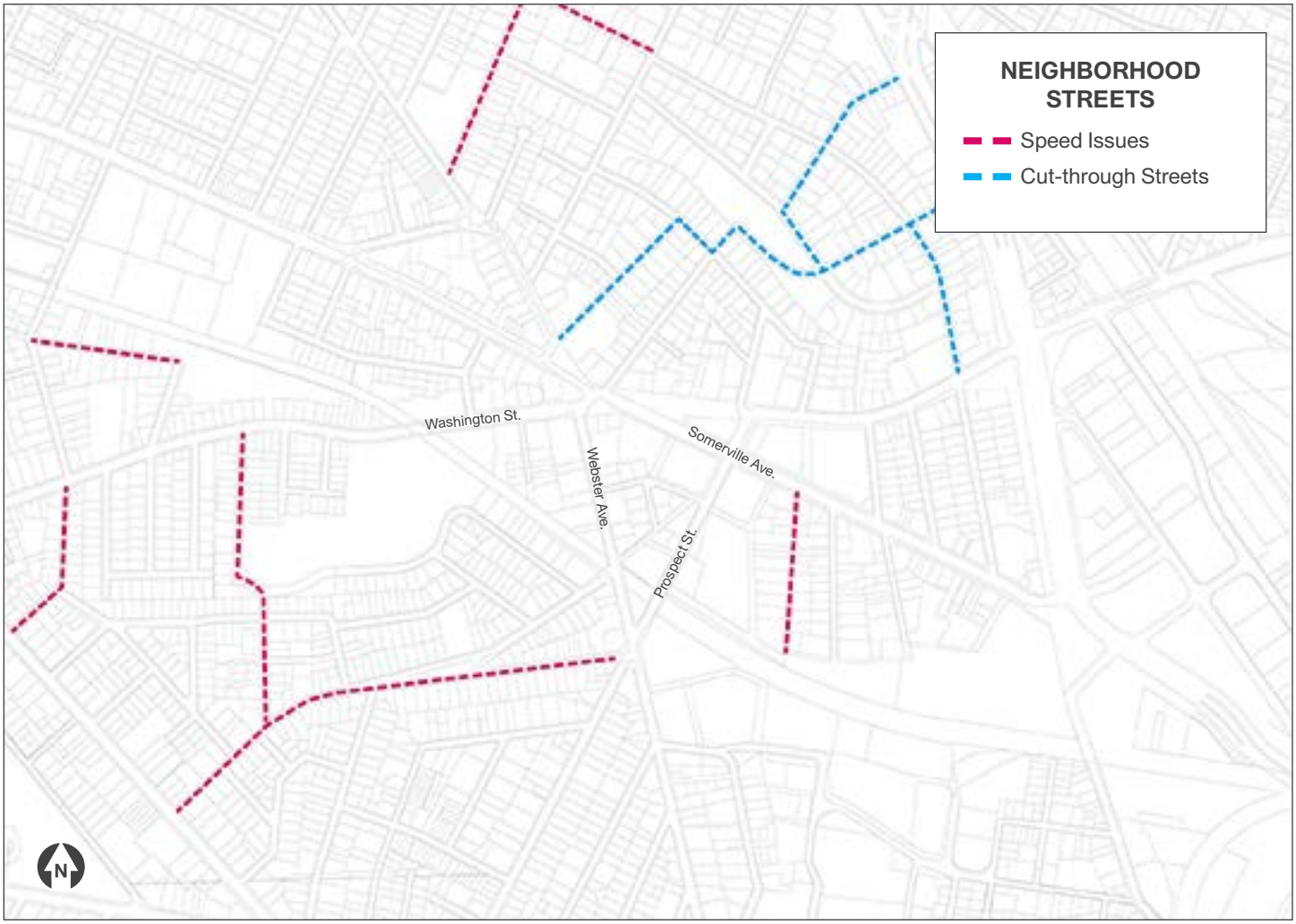
In Massachusetts, speed limits on unposted streets are set at 30 mph by state law. To decrease the speed limit, municipalities are required to get approval from MassHighway and the Registry of Motor Vehicles (RMV). Before establishing a new speed limit, an engineering study is required to monitor the prevailing speed of motorists so that a speed limit that is 'safe, reasonable, and self-enforcing' can be established. Traffic engineers use the actual speed that 85 percent of drivers travel at or below to set the appropriate speed limit for a particular street. This '85th percentile' metric is used as a starting point for setting rational speed limits because the actual physical design of a street and a driver's perception of safety greatly impacts the actual speed we feel comfortable driving and is considered to be the maximum safe operating speed for that location.

The most effective way to slow vehicular traffic on urban streets is to create 'visual friction' that impacts a driver's perception of safety. When travel lanes have appropriate widths, streets with two-way traffic flows are generally observed to have slower speeds than one-way streets because drivers are careful not to sideswipe each other. Vehicular

speed decreases even further when features like on-street parking and street trees are provided on both sides of the street (causing more 'visual friction'). This happens because objects seen out of our peripheral vision make drivers feel like they are moving faster than they really are, due to the way our eyes see and interpret our surroundings.

The safest type of neighborhood street for pedestrians is one featuring a shared travel lane 14-16 feet wide with no center stripe and parking lanes on both sides. This type of street is called a "yield street" because cars passing each other are forced to slow down and in many cases one car is even required to pull over slightly to make enough room for the other to pass. Yield streets significantly reduce travel speeds and promote safety for all modes because of the 'visual friction' they provide.

TRAFFIC VOLUMES



ABOVE: Streets mentioned during the community process as being problems for residents. Issues include speed and volume of traffic.

Volume on a residential street is usually related to the street network. Simply put, a street network determines where you can and cannot go. There's a classification of streets: arterials (McGrath Highway), local collectors (Somerville Avenue), and local streets. As traffic volumes increased in Somerville and people started to act erratically to avoid traffic, band-aid approaches were applied on local streets. Often times they benefit immediately adjacent residents but have negative impacts on nearby streets or on the network. An example of a large intervention is the switching of two-way streets to one-way while a more minor intervention is a posted sign restricting access during rush hours. Whatever the approach, these changes shift traffic distribution patterns on local streets.

PROSPECT HILL

During the planning process, residents of Prospect Hill spoke loud and clear about the need for traffic calming throughout their neighborhood. People use Prospect Hill as a cut through from McGrath Highway to Somerville Avenue and points beyond. In particular, Greenville Street, Prospect Hill Avenue and Parkway, Boston Street, and Warren Avenue connect McGrath Highway to Somerville Avenue. In the 1990's 'do not enter' signs during posted hours were introduced on Greenville Street and Prospect Hill Avenue and one-ways were introduced on a segment of Boston Street and Stone and Columbus Avenues. Neighbors admit these restrictions are an inconvenience but say this helped reduce some traffic. However, it did not reduce speeds. Residents of Prospect Hill would like to see three things: reduced motor vehicle speeds, full stops by motor vehicles, and a reduction in the amount of non-local traffic.

OTHER OPPORTUNITIES

The experience of Prospect Hill residents is not unique. The speed on Allen Street, Vinal Avenue, Perry Street, Concord Avenue, Dane Avenue, Properzi Way, and Calvin Street were all mentioned. Other residents noted the importance of making the original street network of Somerville, the rangeways that connect Somerville Avenue to Broadway, fully functioning again. Rangeways originally divided the agricultural land of Somerville but today serve as our primary north-south street connections. Walnut and School Streets,

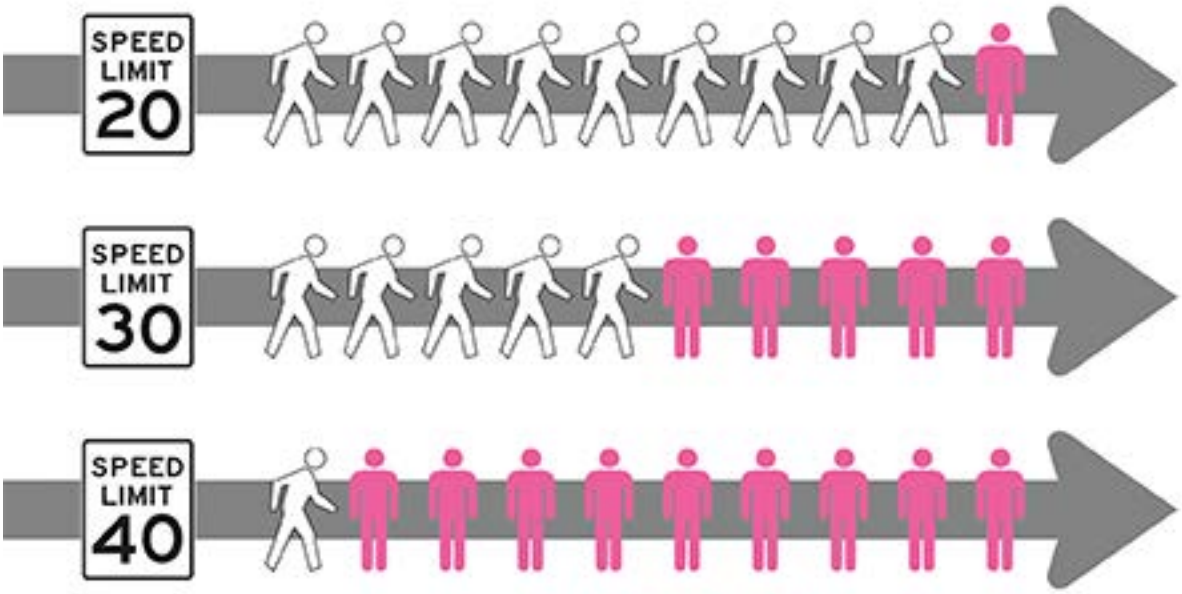
the two rangeways in the plan area, were originally designed as two-way streets. However, Walnut Street is entirely one-way in the northbound direction and portions of School Street have been converted to one-way.

NEXT STEPS FOR CALMER STREETS

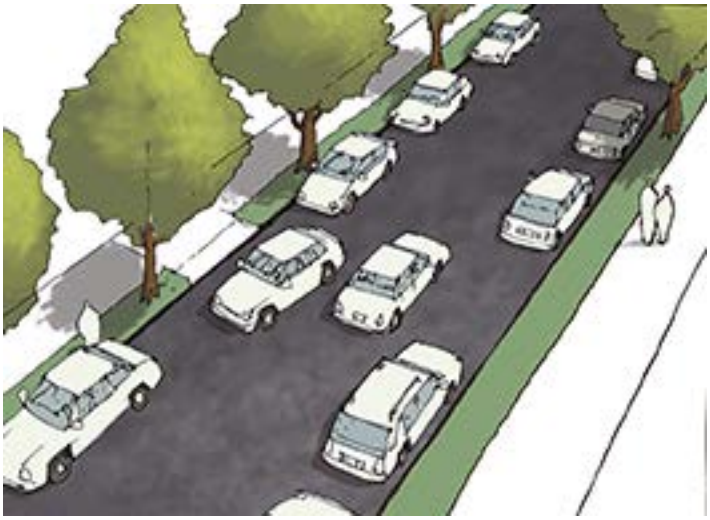
While this neighborhood plan has identified the need for a strategy to slow speed and reduce cut-through traffic, it could not evaluate the best options for each street. The Mayor's Office of Strategic Planning and Community Development is pursuing a citywide mobility plan that can provide a more comprehensive strategy for calming neighborhood streets. In the short term, the problematic streets identified by residents during the Union Square neighborhood planning process can be triaged using a suite of traffic calming measures. A Vision for Mobility in Chapter 3 of this plan provides policy guidance related to calming the neighborhood streets of Union Square.

Pedestrian Survival Probability

Vehicle speed affects both stopping distances and the severity of crashes. The laws of physics determine that a doubling in vehicle speed results in a stopping distance four times as long. Therefore, a small increase in roadway speeds results in a disproportionately large increase in pedestrian fatalities. Scientific research shows that when vehicles are moving at 25 miles per hour or faster, nearly all crashes result in severe bodily injury and roughly 50% are fatal for pedestrians. When vehicular speed drops to less than 20 miles per hour, injuries for all roadway users, including motorist, bicyclists, and pedestrians significantly decrease.

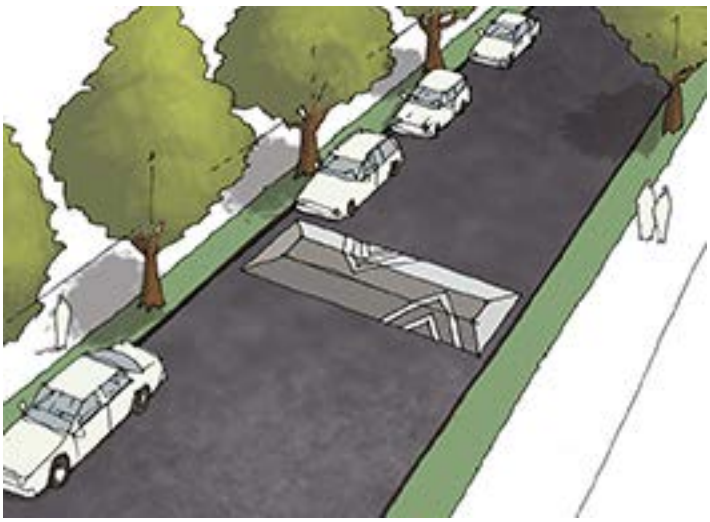


TRAFFIC CALMING



ABOVE: On-street parking physical narrows the roadway and reduces traffic speed by creating "visual friction" for drivers on one or both sides of the roadway.

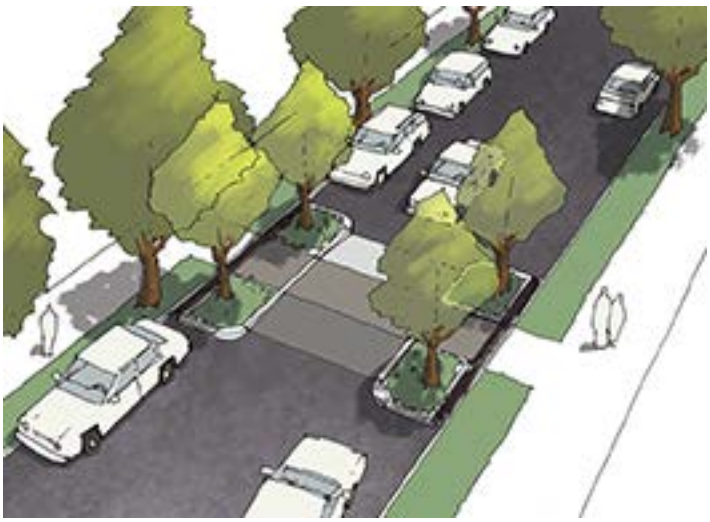
ABOVE: Speed humps are rounded, raised portions of the roadway 10-14' long and 3-4" high. They are distinct from the other "speed bumps " found in many parking lots, and often tapered at the curb to allow for unimpeded drainage.



ABOVE: Speed tables are flat topped, raised section of the roadway that are typically 10-14 feet long and 3-4 inches high. They are effective at reducing speeds and are smoother on larger vehicles than speed humps.

ABOVE: Parking lane planters decrease traffic speed in two ways by physicall narrowing the roadway similar to on-street parking and creating "visual friction" in the peripheral vision of drivers.

ABOVE: Chicanes are staggered curb extensions installed on alternating sides of the street that reduce vehicular speed by requiring drivers to maneuver through the extensions. The calming effect depends on how far the chicane extends into the roadway and can be replicated by alternating on-street parking on one side of the street and the other.



ABOVE: Pinch points are curb extensions aligned at mid block locations to narrow a street down to one travel lane. Pinch points may include a crosswalk and/or landscaping in a curb extension.

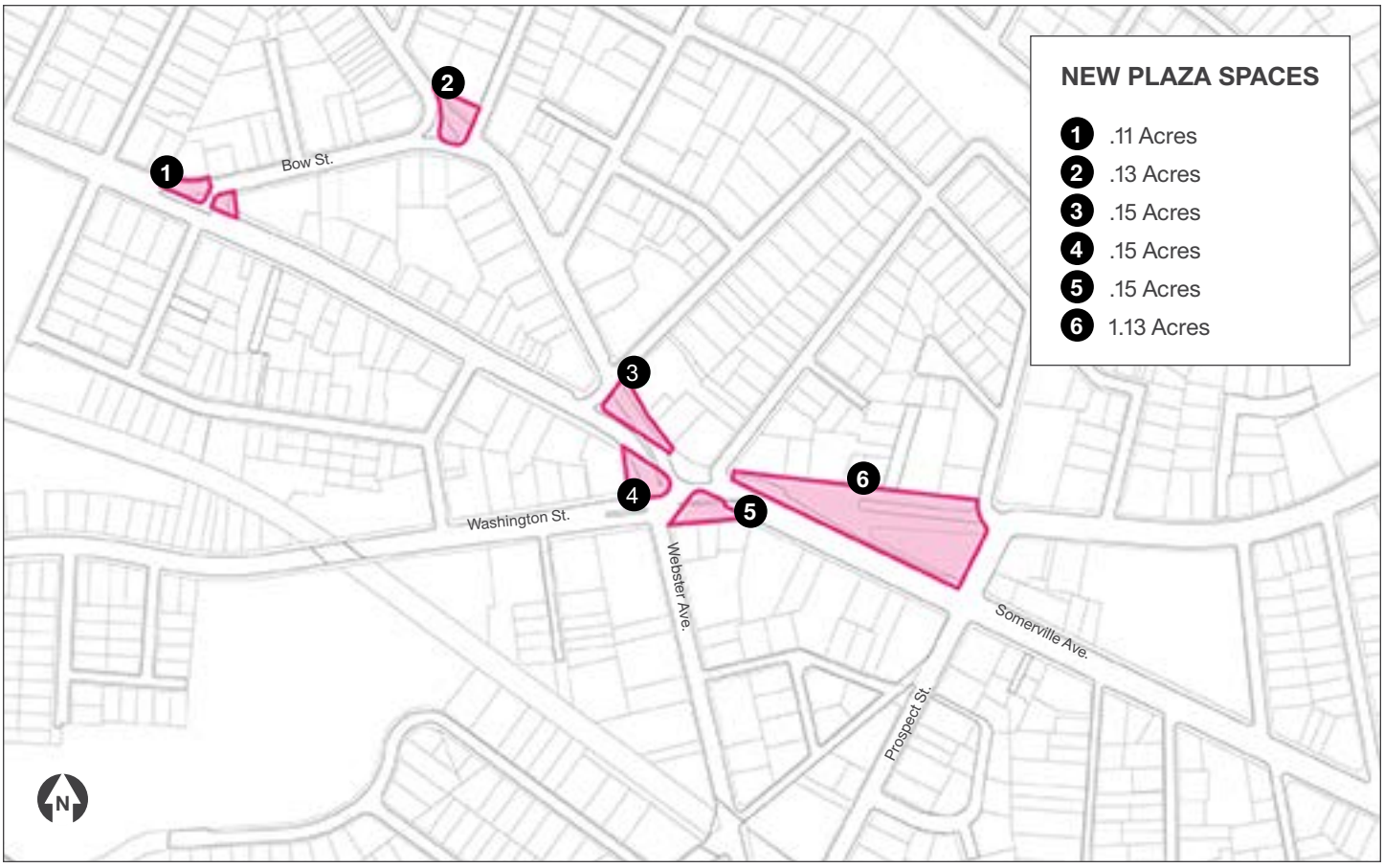
Waste Not, Want Not

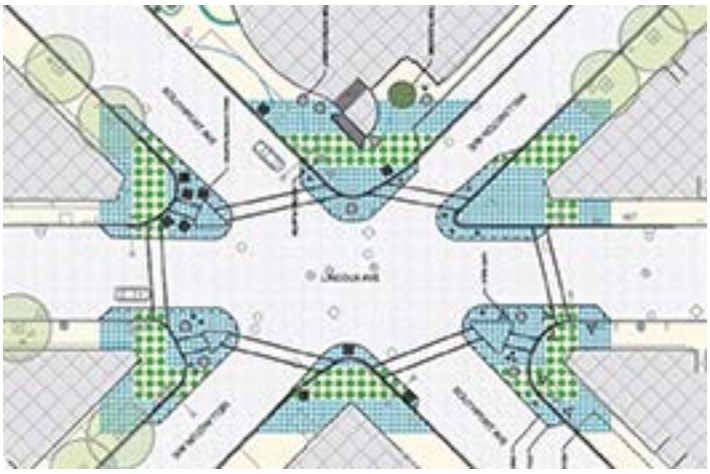
Converting Excess Pavement into Plazas

Public spaces provide areas for active and passive recreation, play host to community and civic gatherings, foster social interactions, and even help us unwind from modern urban life. With only about 4 square miles of land area to deal with, achieving SomerVision's goal for 125 acres of new public space is challenging than for development targets that can go vertical (jobs and housing). With Somerville's densely woven urban fabric providing limited opportunities and relatively little land area available to build new public spaces, achieving this open space goal will require an innovative approach to meet expectations. This begins with looking at our existing assets with new eyes.

The single largest land area available to create new public space is our streets. An important step in implementing the City's Complete Streets Policy (see page 138) is advancing a pedestrian-first hierarchy for all transportation projects that puts pedestrians first, then transit riders, cyclists, and motor vehicles. Pages 138 through 147 investigate new design concepts for Union Square's primary streets. Possibilities for completing these streets are demonstrated for each, but part of rebalancing our streets to make them more 'complete' will also include completely rethinking how they are designed where they cross paths. Union Square's intersections are currently designed in favor of keeping cars moving and reducing delay. Slip lanes, right turn signals, long pedestrian delays, and wide turning radii unnecessarily dominate the existing streetscape at the expense of pedestrians.

Converting redundant, inefficient, or underused street space into people space is one of the most valuable outcomes of our Complete Streets policy and its pedestrian-first planning. The existing street network in the Union Square plan area represents 91.63 acres, or 22.53% of the total plan area. Much of this land area is made up of intersections that dedicate significant amounts of space to vehicular travel and turning lanes, but many of these vehicles are simply passing through the square to get to other places. The City is in the advanced design stages to convert Webster Avenue and Prospect Street to two-way traffic, and this Plan identifies the conversion of Somerville Avenue to two-way traffic as a priority for the city (see page 140 for more information). By removing the one-way loops that force all drivers onto the same street segments, these changes will drastically improve the experience of driving through Union Square and set the stage for repurposing underutilized roadways to create more capacity for people. The pages that follow identify the possibilities.





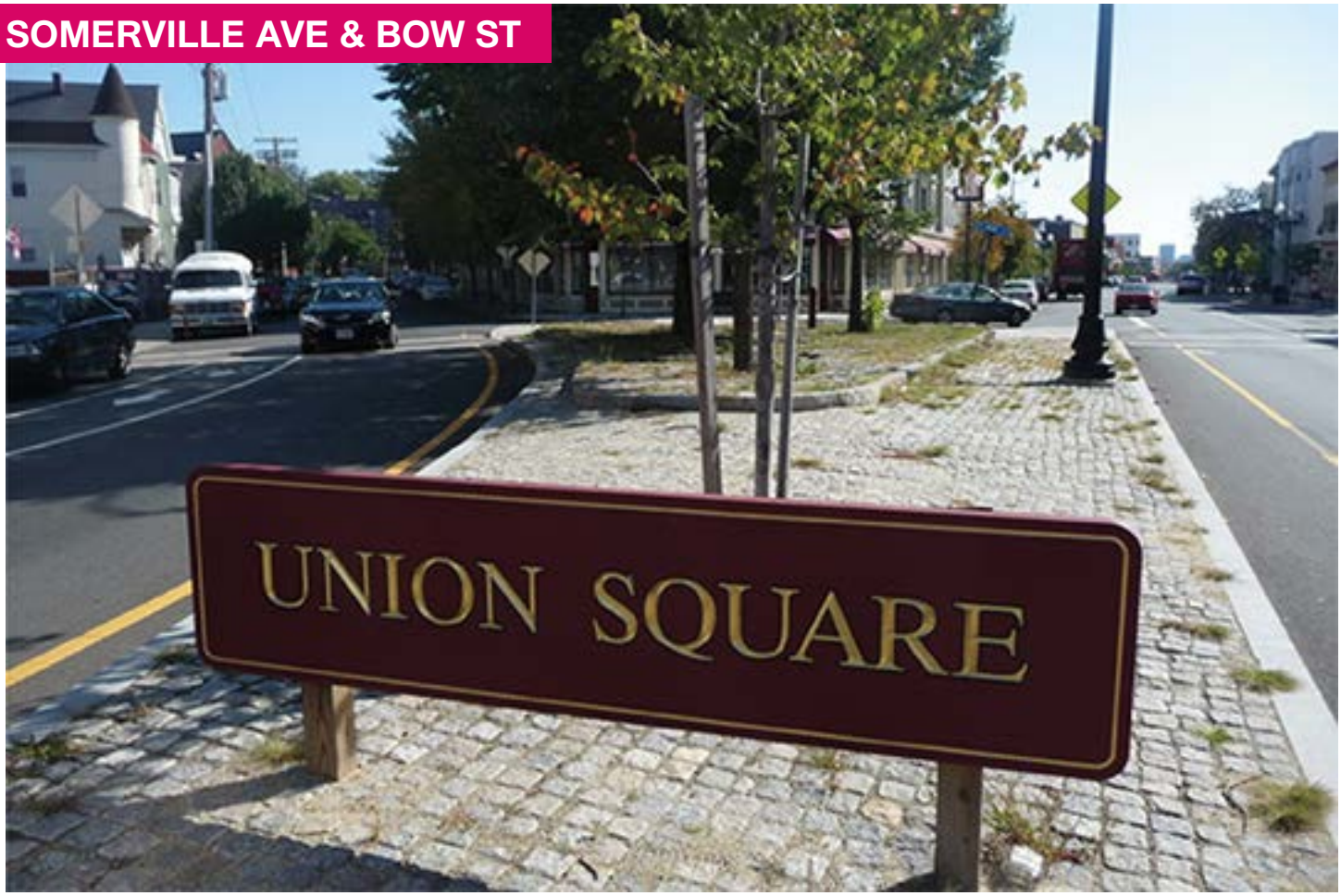
The intersection of Lincoln, Wellington, and Southport in Chicago is now called *Lincoln Hub* after a placemaking project sponsored by the Chamber of Commerce used simple flexible bollards and painted curb extensions to transform the intersection into a destination rather than a place for passing through to other locations outside the neighborhood

TOP: The Lincoln Hub installation combines traffic calming, pedestrian improvements and public art to create a memorable focal point

LEFT: The design of Lincoln Hub's polka-dot pattern is intended to suggest an oriental rug, referencing the hubs carpet stores

RIGHT: Painted curb extensions expand the protected area of the sidewalk and shorten street-crossing distances for pedestrians

SOMERVILLE AVE & BOW ST

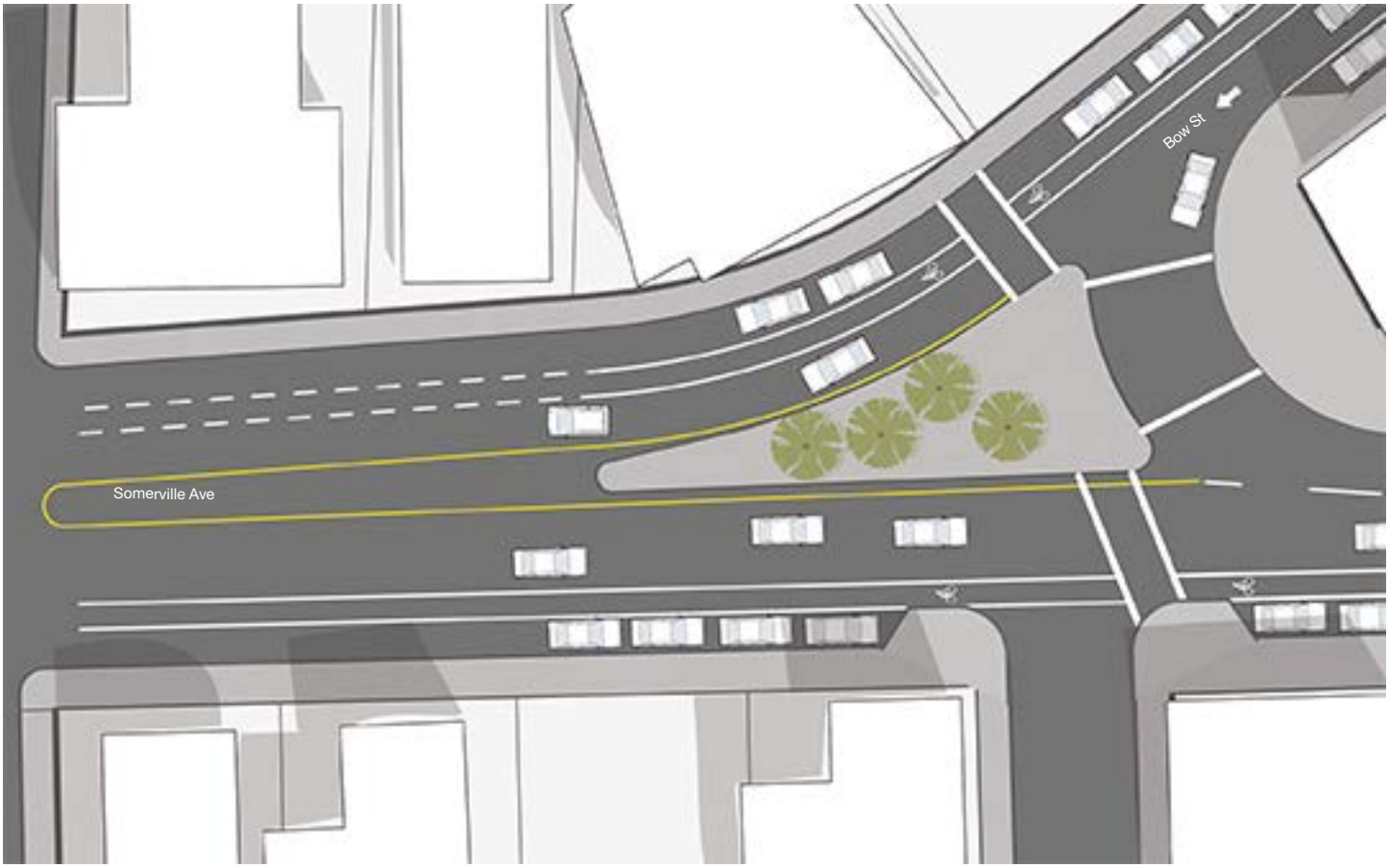


The Somerville Avenue to Bow Street intersection favors the automobile. If you're traveling east, or into the square, the Union Square sign welcomes you. If you're headed west, drivers feel the relief that they have finally gotten through Union Square traffic and can go on to their destination. The intersection uses what's called a slip lane, a travel lane that allows vehicles to turn without ever having to enter an intersection. This allows vehicles to travel at greater speeds.

The remaining space is a traffic island or a place for pedestrians to stand. However, it doesn't even do a good job at that. The pavement is rough cobblestones and there's a curb around a grove of four trees, the only current asset of the space. There are no benches, the cobblestones can hurt feet, and traffic whizzes by – try to enjoy it. If curious enough, some pedestrians might put up with the cobblestones long enough to read the story of Jonathan Niles. Niles worked at the Bleachery long ago and discovered the fossil of a dinosaur close to the location of the sign in the island. He put it on display in his home in Boston and charged people to come and view the specimen. However, it was determined to be a hoax, the fossil was a collection of dog and horse bones.

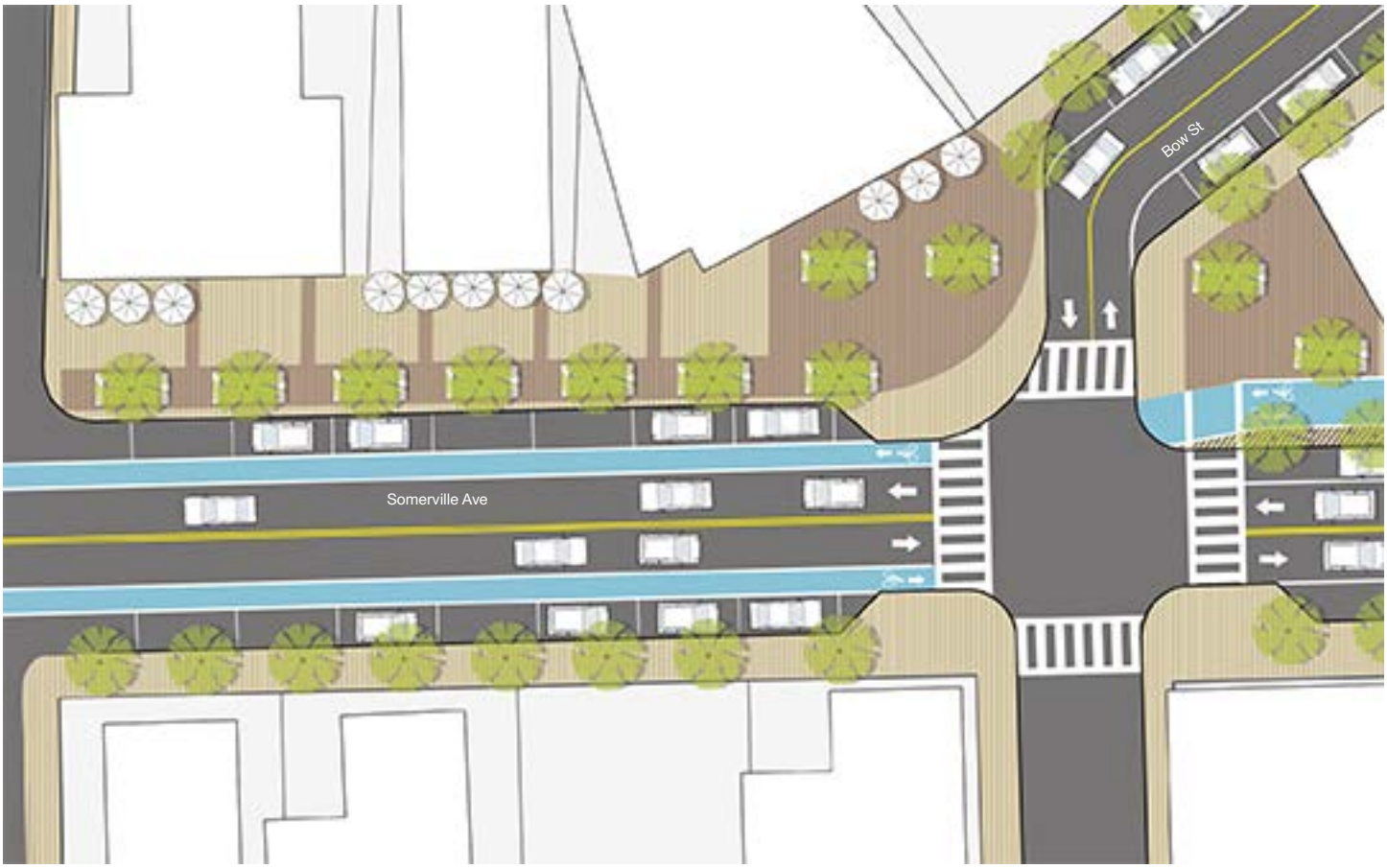
If Somerville Avenue is turned back into a two-way street, there is opportunity to reclaim space because the existing traffic pattern will not work. Cars coming from Bow Street will have to coordinate with cars on Somerville Avenue whereas before Bow Street was the start of the two-way Somerville Avenue. Bow Street, Somerville Avenue, and Carlton Street intersect at the current traffic island. By straightening Bow Street, and eliminating the slip lane, to meet Carlton Street, the reclaimed space can be turned into a plaza and widened sidewalk.

Both sides of the street, in front of the Drouet Block and the storefronts including Thunder Road, can benefit. The plazas give room back to people. Shops could spill out onto the street, people can enjoy a book on a new bench, wait to see a show, or just pass through. Plazas are not just hardscape either. They give opportunity for new trees and planting areas. Hint, hint bulb blitzers!

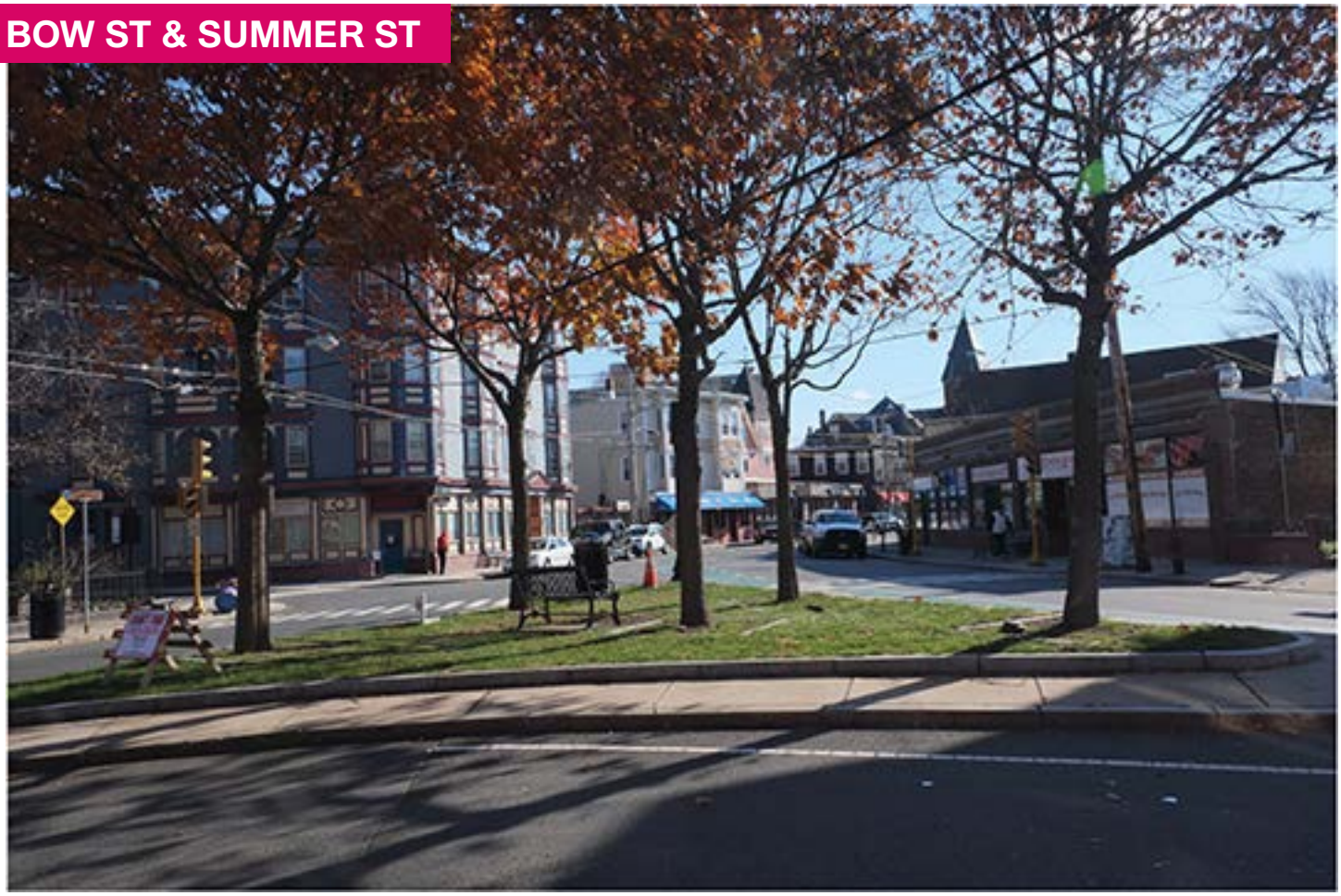


ABOVE: The intersection of Somerville Avenue and Bow Street serves as the western gateway for Union Square but the sign in the traffic island is the only marker.

BELOW: Somerville Avenue and Bow Street can serve as a real gateway. More than a sign, plazas, and the people using them, will signify the arrival to Union Square.



BOW ST & SUMMER ST



The intersection of Bow and Summer Street is wide and paved. There are painted lines and black lines painted over some of those lines but it doesn't get the job done. The Summer and Bow Street intersection has been divided into two shortcuts, or slip lanes, which are helpful to motorists because they can travel at higher speeds. Cars look to disappear quickly up Summer Street. Inbound traffic can attempt a full speed merge with Bow Street vehicles, across a bicycle lane. Cyclist have it especially tough at this intersection because they have the right-of-way to stay on Bow Street. However, the slip lane essentially makes staying on the same street a left turn across a lane of fast moving traffic.

The eased turns created by the natural bend in the road and slip lanes have decreased safety for pedestrians because drivers cannot see far ahead. Each crosswalk is signalized. If pedestrians can't cross in the time allowed, pedestrians can take refuge on the traffic island. The triangular island has sidewalks on all edges and a curb demarking a landscaped area. There are five existing trees and one bench. Have you ever seen someone sitting on the bench? The granite curbing and change in grade is similar to the demarcation of public and private space in residential areas. Think of a homeowner with a short kneewall and lush grassed front yard. It's accessible but social norms stop a passerby from stopping to sit. This treatment of public space still psychologically triggers the same reactions as those residential areas, this area is to be viewed from the outside rather than experienced and enjoyed.

The redesign of the Bow and Summer Street intersection is intended to reverse the current experience and give space back to people. This plaza is the bookend of the Bow Street shared space. The slip lanes for Summer Street are eliminated. Summer Street now intersects with Bow Street at a raised intersection. Without the slip lanes, there's room for extended sidewalks and street trees in front of 39 Bow Street, the brick apartment building. In front of 1 Summer Street, the former Gothic church, there's area for a large plaza.

Plazas can provide for a variety of activities and uses. Plazas will even change throughout the day. This plaza may see a spillover of activity in the mornings from the Saturday farmer's market and nearby breakfast eateries. In the afternoon and evenings, it might transition to a more passive space. Plazas will also give opportunity for trees and planted areas, bike parking, and seating to name a few.

ABOVE: The intersection of Bow and Summer Street is confusing. Cars entering Summer Street can do so quickly and in a straight shot but have to yield to cyclists. Cars can enter Bow Street from Summer Street without stopping. The majority of pedestrian crossings are signalized because of the roadway.

BELOW: The Bow and Summer Street intersection will be the bookend to the Bow Street shared space. The intersection does not have to create conflicts between pedestrians, cyclists, and cars. The plaza is an added plus!

WASHINGTON & WEBSTER

This intersection is considered one of the worst to experience in Union Square. Consistently, community members highlight this intersection as poor for pedestrians, complex for cyclists, and frustrating for drivers. There's two slip lanes, a traffic lane that allows vehicles to turn at an intersection without actually entering the intersection, connecting Somerville Avenue to Bow Street in different locations. There's also an eased right turn allowing cars to turn at higher speeds from Somerville Avenue to Washington Street. The most confusing part of the intersection is the left turn to stay on Somerville Avenue.

Pedestrians are relegated to narrow sidewalks, medians, and traffic islands. The sidewalk is the narrowest on the southern side of Somerville Avenue. The medians that are intended only to separate traffic of different directions are used by pedestrians to hop across the intersection as traffic and pedestrian signals allow. The medians are not wide enough to provide handicap access ramps up onto them so the medians are cut. This makes the crosswalk level and accessible which is very important but keeps the pedestrian on the same level as vehicles which decreases visibility.

A primary goal of redesigning the intersection is to provide shorter and safer pedestrian crossings so that people on foot can more easily navigate through the center of the neighborhood. The redesign should also improve connectivity for motorists and cyclists, eliminating confusion, and improving predictability through the square.

The biggest concept is the direct connection of Somerville Avenue through the intersection which creates a strong east-west route. This improves connectivity for all modes. Washington Street and Webster Avenue can be treated as the third and fourth legs of a four-way intersection. Instead of entering Bow Street through a slip lane, Bow Street is now accessed by turning off of Somerville Avenue. This helps to keep through traffic on Somerville Avenue and local, slower moving traffic on Bow Street. This solution is elegant in its simplicity, making the intersection more intuitive for drivers while creating substantially more public space.

By realigning the streets, 19,602 square feet of space is given back to pedestrians. There are plazas in front of redevelopment parcel D7 and Reliable Market; Mid-Nite Convenience and Mama Gina's Pizza, and Gracie's Ice Cream and Machu Chicken. The intersection is elevated to give priority to pedestrians and help to slow car travel. Elevating the street here also connects these new and improved plazas to the main plaza along Somerville Avenue creating a unified square that, from building face to building face, celebrates this area as a public square that safely moves cars, pedestrians, and cyclists.

ABOVE: This intersection is considered one of the worst to experience in Union Square - poor for pedestrians, complex for cyclists, and frustrating for drivers.

BELOW: Somerville Avenue can connect through the Square to create a strong east-west connection. Additional space is given back to pedestrians including increased sidewalk widths and new plazas.

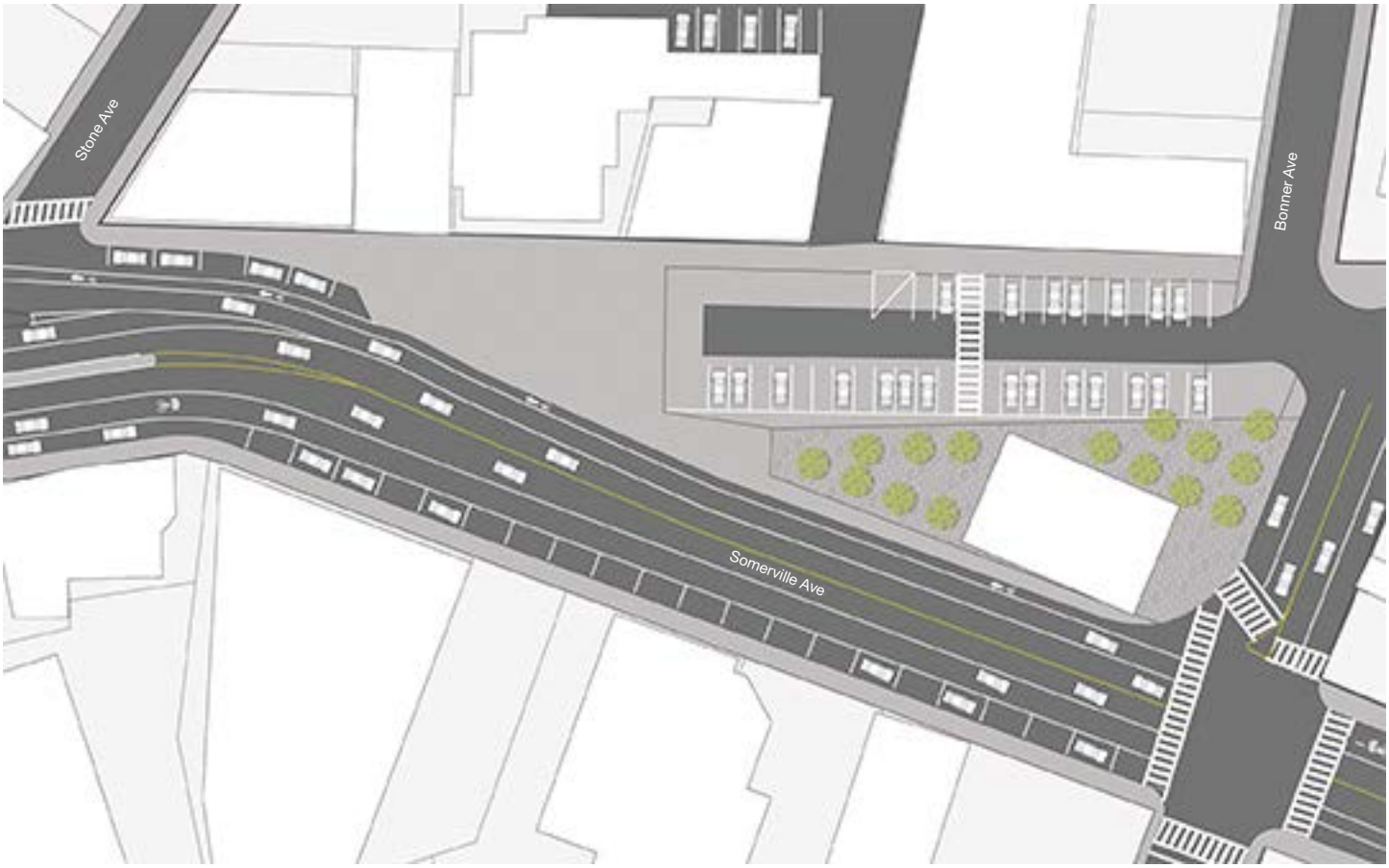
UNION SQUARE PLAZA

Today, the square is consistently recognized as the social and cultural center of the neighborhood. The Union Square plaza was created when Washington Street was reconfigured to meet Prospect Street in the 1960's. The plaza has since become the hub to Union Square hosting events like the Saturday Farmer's Market, Pity Party, the Fluff Festival, and outdoor dining for several restaurants. Most activities are squished into the existing condition while the blacktop expanse looms near.

For such loved space, only a fraction of the plaza can be easily accessed for public activities. The current design limitations are significant. Pedestrians can only use the parking area during events. When it is closed, there's a tripping hazard in the change of grade. People are having too much fun to look down! The plaza has an elevated 6" curb surrounding two existing groves of trees and the land area under these trees is finished in rough cobblestones. This design element discourages any public use of this space. The curb signifies that this is an area to look at, not enjoy. The cobblestones are uncomfortable to stand on too.

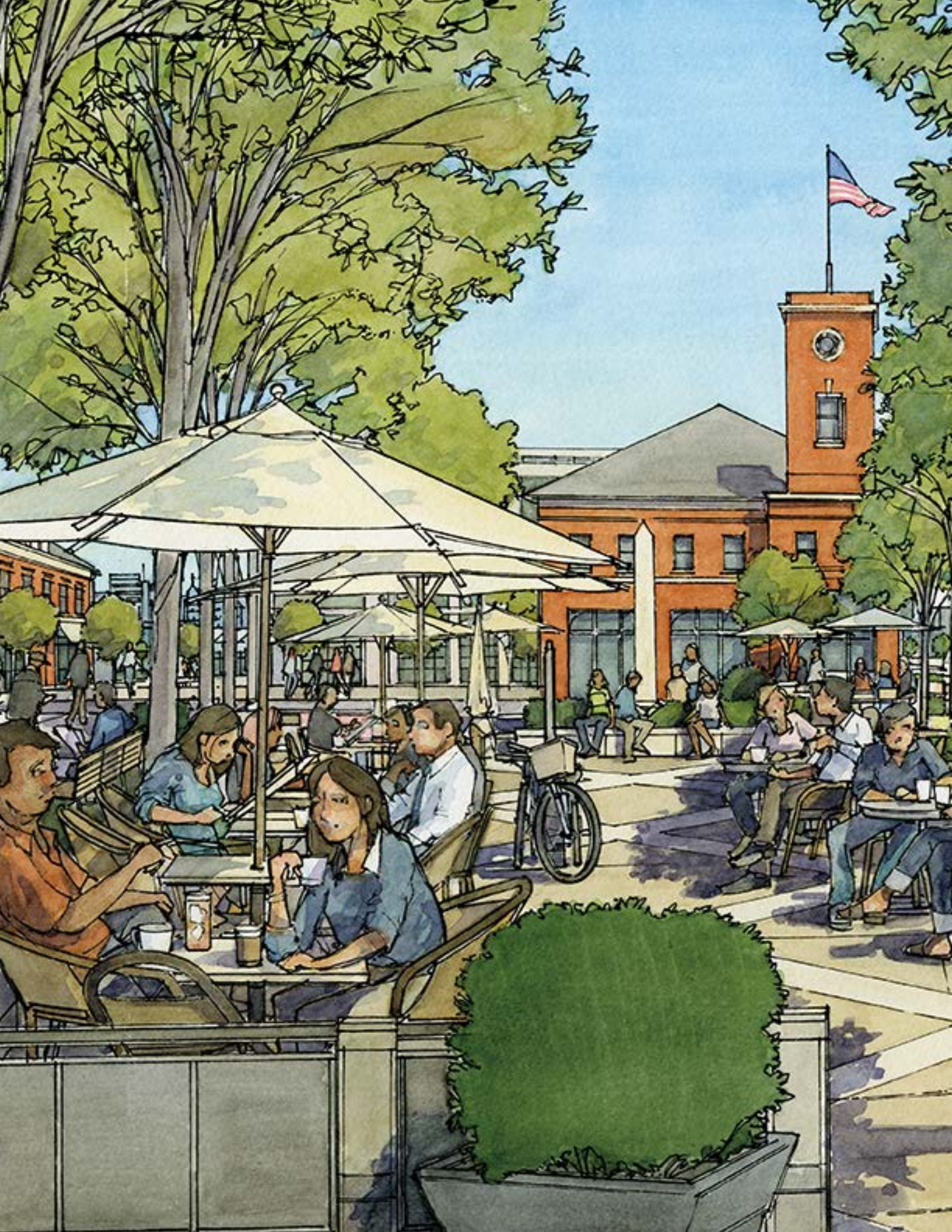
Any redesign should prioritize the use of the space by people. With Somerville Avenue realigned, the plaza can be extended and 'filled in' in areas currently devoted to vehicular traffic. New materials and landscaping in the existing plaza can increase the usability. Paving materials should be seamlessly transitioned and landscaped areas should be flush with the plaza level. This will be more inviting for users and they might actually sit and enjoy the area under the trees.

The parking spaces that are currently accessed from Washington Street don't need to be removed, but the parking area needs to be rethought of as a public space that is parked on when it isn't being used for events. Seen this way, it becomes a part of the plaza. This mindset has already started with The Independent's dining deck. To make this change, the parking area would be elevated to the same height as the existing plaza with similar materials. The plaza area and parking area could then be delineated by bollards or similar penetrable barriers to protect the pedestrians when cars are in the parking area. This allows the area to be flexible and meet the needs of both uses.



ABOVE: The Union Square Plaza is mostly parking. Users are pinned into the remaining space and squeezed onto a narrow sidewalk where the plaza ends.

BELOW: This concept illustrates the possibilities. All of the uses and activities that happen on the plaza today remain, but a more efficient layout and uniform design can make the plaza more flexible to meet different needs throughout the day



Re-imagining Existing Spaces

Bow Street Shared Space, Concord Triangle, Sanborn Courtyard, and More

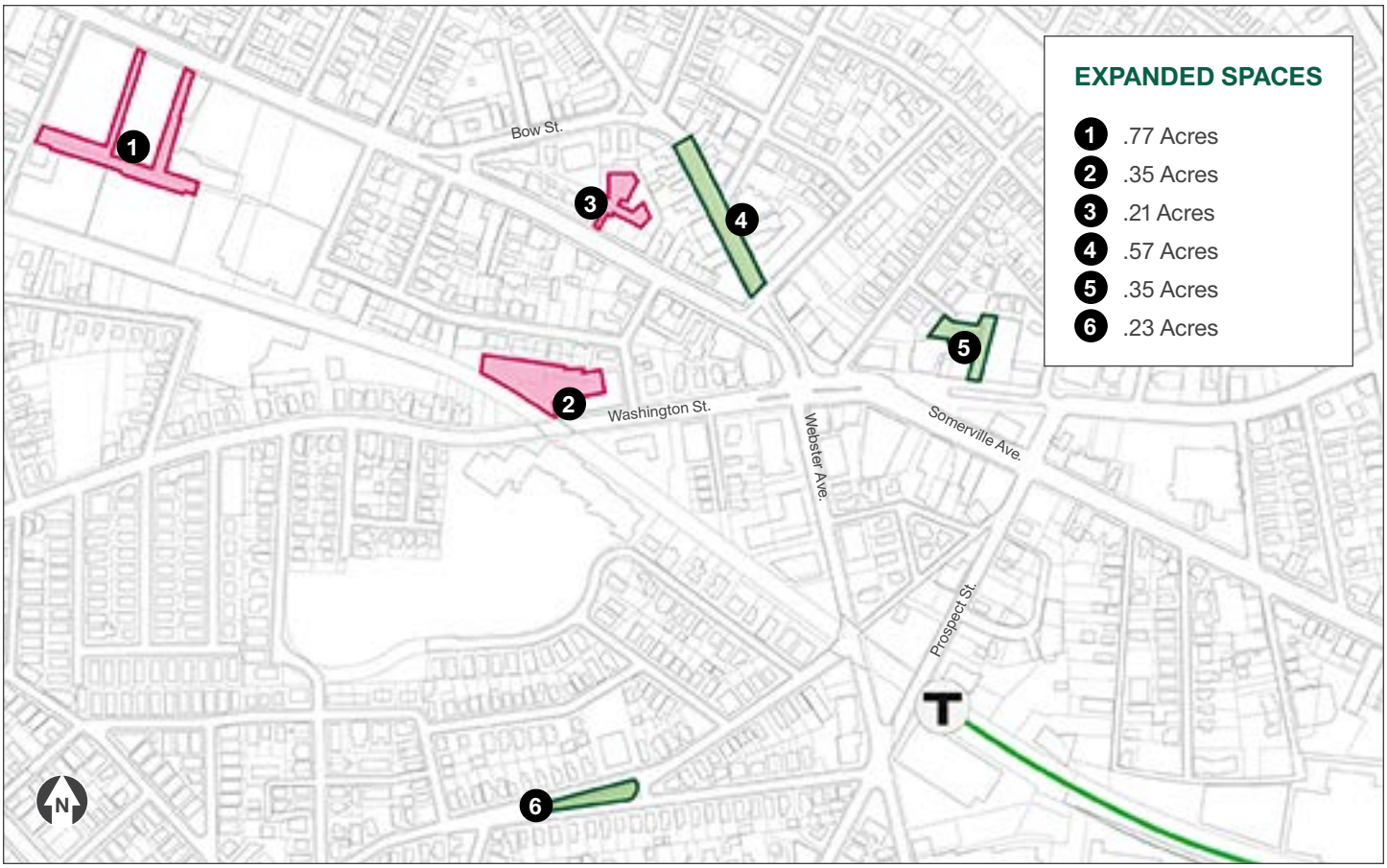
People gather in places that welcome people. The spaces do not have to be permanent, formal, or expensive. Temporary, informal, and cheap work just fine. To maximize Union Square's public space, we need to reconsider existing spaces that aren't welcoming to people. These existing spaces take a variety of forms: streets, alleys, courtyards, and even parking lots.

There are numerous examples from other cities around the world leading the way. Oakland, CA is converting alleys into pedestrian-oriented, mini-retail streets.

Melbourne, Australia, repurposed their laneways (Australian for alleys). The laneways wind behind ordered streets. New discoveries are around each corner – shopping, art, food and beverage are all offered. Reclaimed alleys defy the reputation of most alleys – they are not seedy, dirty, or dangerous. They welcome people.

Harvard Square has a good example of a repurposed street. A shared street minimizes the separation of uses to increase safety and usability by all modes. Winthrop Street between JFK and Eliot Street has been converted to a shared street. Prior to the renovation, the street had high pedestrian volumes and few car trips. Each mode had designated space which made it cramped. Cambridge constructed the shared street in 2007 to formalize what was already happening naturally.

Small gestures of new open space are appreciated but go unused. They can be retrofitted to welcome people and be more useful spaces. There are a number of opportunities in Union Square including Bow Street, the spaces associated with old industrial buildings, Sanborn Court, and Concord Square. These spaces offer an opportunity to create additional public space by adding better lighting, paving, and outdoor amenities such as seating and seasonal events.



RIGHT TOP: Argyle Street in Halifax, Nova Scotia gets a placemaking makeover that honors its name to reclaim the space as a shared street

RIGHT MIDDLE: NoHo Plaza, a former underutilized alley in the heart of the North Hollywood Arts District in Los Angeles, CA was completely reclaimed as a public space

LEFT MIDDLE: Empty space between two former industrial warehouses repurposed as a public plaza space at Industry City in Brooklyn, NY

BOTTOM: Restaurants spill their seating out onto the street each summer when Montreal annually closes Saint Catherine's Street to cars and opens it to people

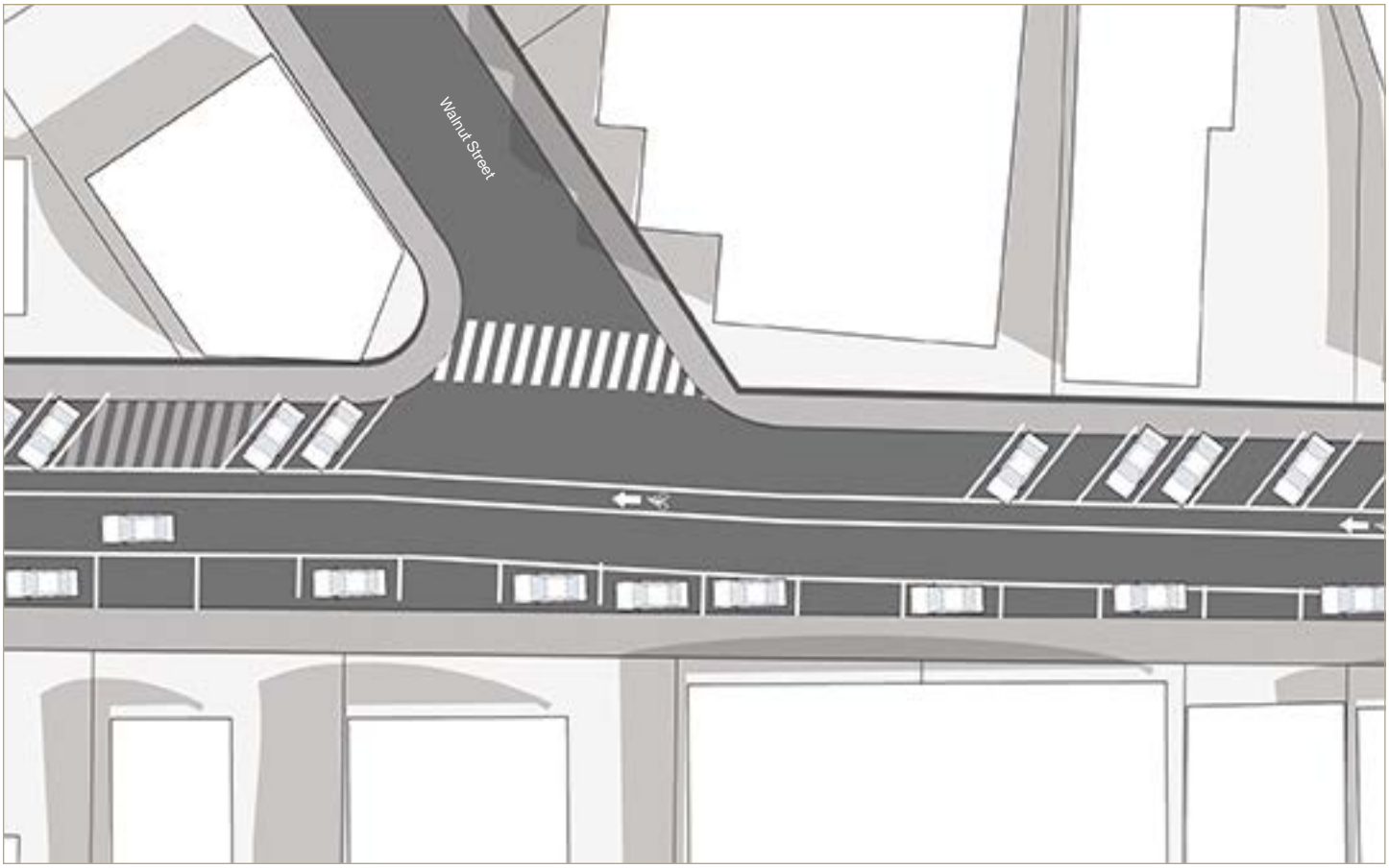
BOW STREET

Bow Street was originally part of Somerville Avenue at a time when it was still called Milk Street. It is now part of a one way pair with Somerville Avenue. Cars, headed westbound, use Bow Street to connect to Walnut, Summer, or Somerville Avenue (whether connecting to the one-way or two-way section). In 2012, the city restriped Bow Street to be safer for all users. Improvements included reverse angle parking which added about 20 spaces and a bike lane.

Bow Street is a local historic district that has some of Union Square's most beautiful buildings. Many of them have been successfully repurposed. The current mix of local business has evolved organically into one of the neighborhood's hip destinations. Stops are frequent and pedestrians hop from one side of the street to another – coffee from Bloc 11, donuts from Union Square Donuts – finish cream of wheat at Neighborhood Restaurant, buy dinner items at Capone's. Cars sometimes drive too fast and tailgate people trying to park. However, most people report that the parking has made the street better.

The redesign of the street should finish the transformation started in 2012 to a truly equal space for all modes that reflects the destination it's become. A shared space could make it one of Somerville's most unique public places. Shared streets provide a variety of benefits. They can increase the amount of space available to gather whether formally or informally. They can adapt seasonally. For instance, there can be more outdoor seating in the summertime that's converted to parking spaces in wintertime. They can also adapt to different public and private needs for the public realm like café seating, space for a line to queue, or public seating to name a few.

BELOW: A shared street in Copenhagen, Denmark



ABOVE: Bow Street is primarily dedicated to the movement and storage of vehicles. The bike lane and reverse angle parking striping in 2012 were good additions but did not improve the pedestrian experience.

BELOW: This concept shows a shared street where motorists, pedestrians, and cyclists all have equal access to the space. The street and sidewalk are on one level, street trees and bollards define the edges, and there is a variety of public seating, restaurant seating, bike parking, and vehicle parking.


Post Office

CONCORD SQUARE

Concord Square, or Praça de Portuguésa is an honorary/ memorial square, an intersection dedicated to honor/ memorialize a resident or group of residents. Concord Square honors the contributions of the Portuguese immigrant community to Somerville. The Square functions as a landscaped median with several mature trees and two benches.

The priority for the redesign of Concord Square is to truly honor the dedication of Somerville's Portuguese community by making the Square more enjoyable for users. There's opportunity to increase the size of the square by converting the fronting segments to one-way pairs. This basically doubles the size of the square, preserves the existing trees, and activates the space for more opportunities to relax, rest on comfortable seating, play catch, or sunbathe.

ABOVE: Concord Square is abused by the neighborhood's four-legged friends.

ABOVE: Concord Square is currently not much an event.

BELOW: To better honor the contributions of the Portugese community in Somerville, Concord Square can expand into existing right-of-way. By doing so, the Square is more usable and practically twice the size of the current space.

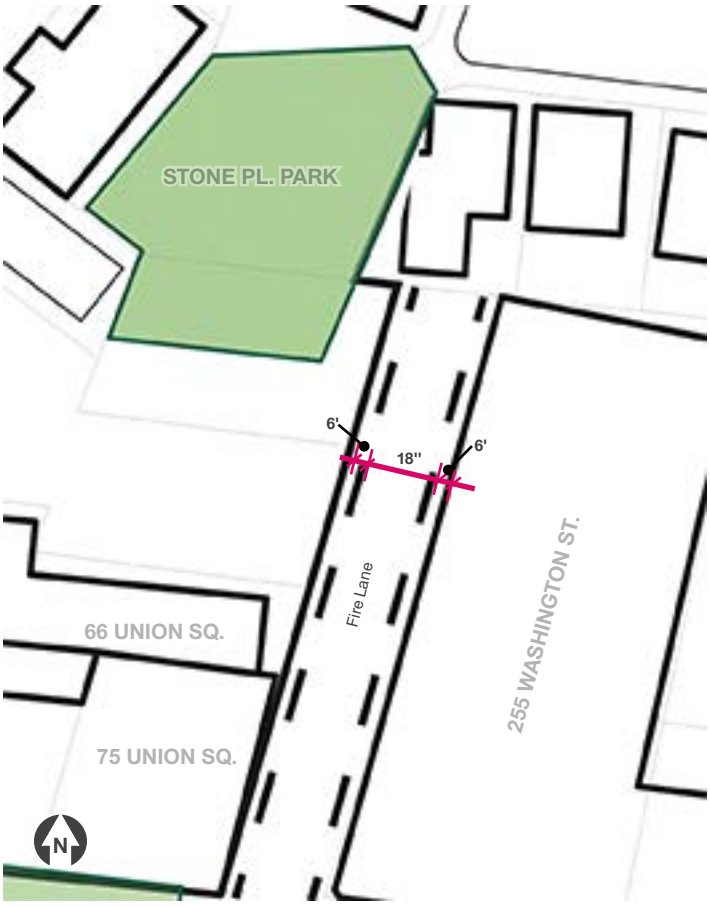
SANBORN COURTYARD

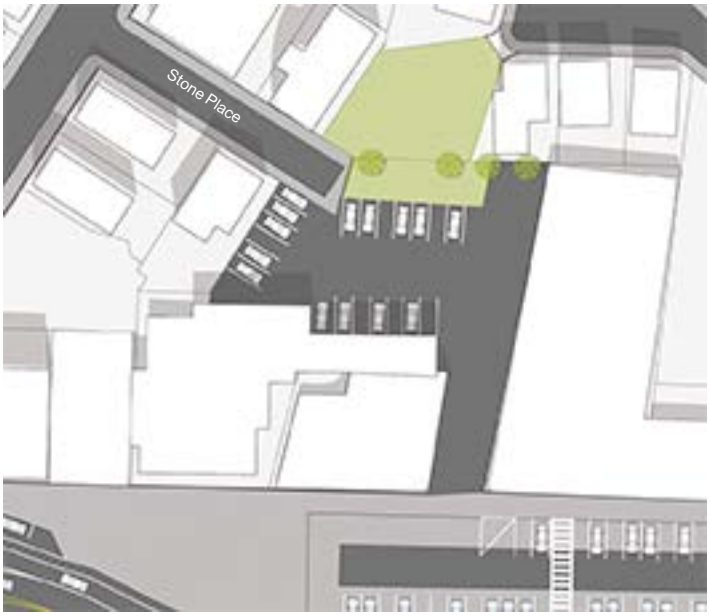
Sanborn Courtyard is made up of two parts, Sanborn Court, a private way, and the parking area for 66 Bow Street (the former police station). A private way is owned by the properties that front the private way. Each abutter owns their frontage to the centerline of the street but all owners are subject to the right of the private way. The right of private way also assures public access. For Sanborn Court, each owner has six feet along their frontage for private use. An 18-foot wide fire lane has to be maintained.

Sanborn Court has blossomed into one of the treasures in Union Square. Unique retailers and restaurants attract people down the court. After dark, it's a little mysterious too. At the end of Sanborn Court is Stone Place Park. The park is a true urban respite.

Union Square Main Streets studied improvement options to Sanborn Court in 2013. Despite the success, Sanborn Court struggles with parking, paving and drainage, landscaping and maintenance, deliveries and loading/unloading, lighting, and snow storage. These issues can be address in a two-pronged approach – physical design and management planning.

A reimaging of this space has to address the issues presented in the 2013 report and reward the wanderer.

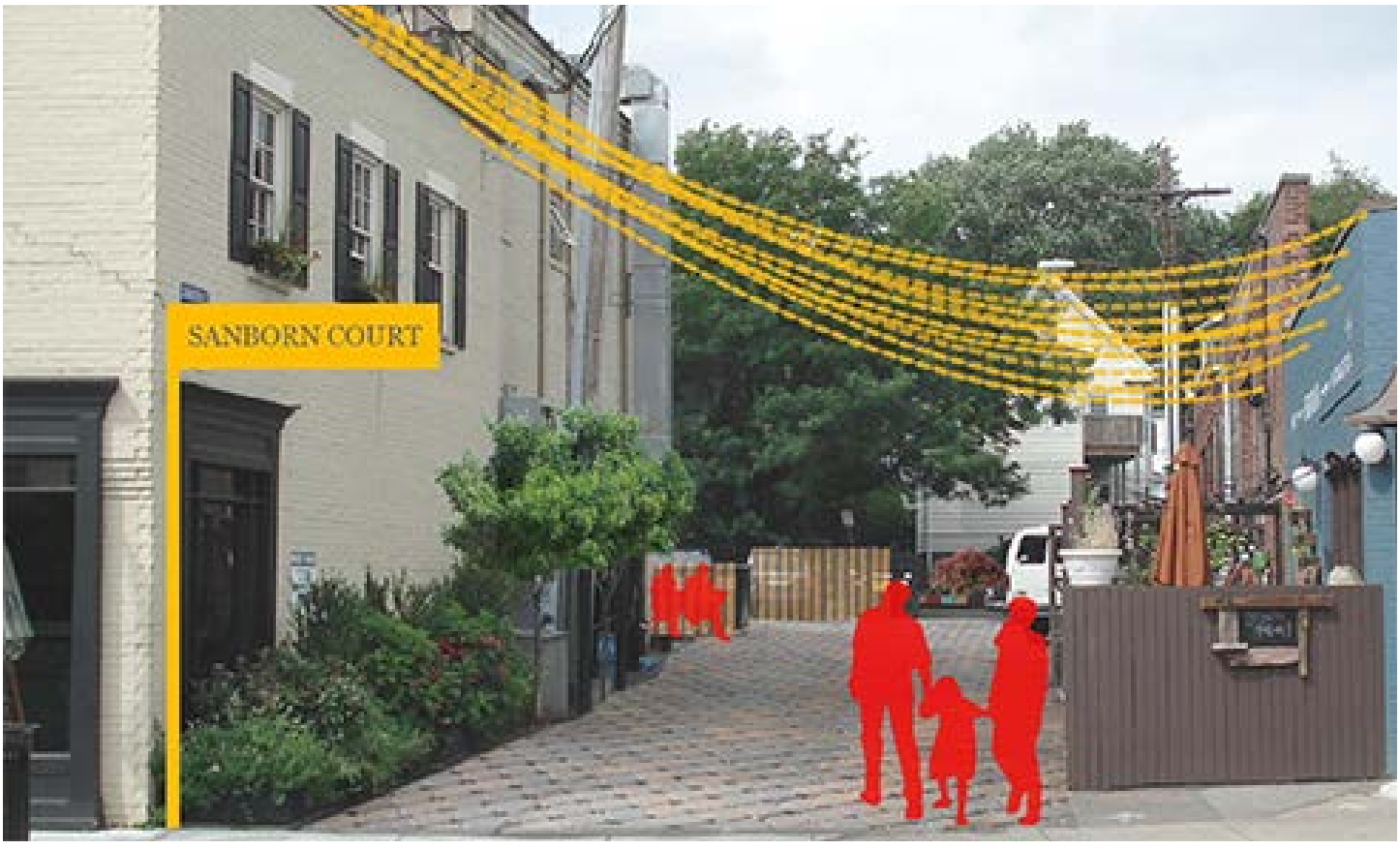




ABOVE: Sanborn Court has an air of mystery to some but innovative uses have started to beckon patrons into the court.

ABOVE: Sanborn Court can connect Union Square Plaza to Stone Place Park. With a change of paving material, the parking lot can be an expansion of space instead of a demarcation. The functionality of a connection to Stone Place will be determined through further community process.

FACING (Bottom Right): Interpreted graphic from 2013 Union Square Main Streets, Sanborn Court Improvement Project showing how ownership and access on Sanborn Court works.
BELOW: An idea to capitalize on assets of Sanborn Court from the 2013 Union Square Main Streets, Sanborn Court Improvement Project.



A FAB-ULOUS OPPORTUNITY

Union Square is known as being the arts hub of Somerville. People come to create, tinker, distort, extract, and explore. Businesses and coworking spaces like Artisan's Asylum, Greentown Labs, and Fringe Union, among others, and the supportive and participatory residents of Union Square have made this area of Somerville what it is today.

The old industrial buildings that remain in Somerville are good for the arts and creative economy because they have high ceilings and concrete floors among other design features. This is something the creative economy figured out a long time ago. In addition, different creative economy uses tend to be clustered, frequently sharing resources and equipment.

Due to the fact that these buildings were originally built to be heavy industrial uses, they have alleys, delivery access, and service courtyards. This is an opportunity to show the creative thinking happening on the inside of the building on the outside. All of the spaces shown to the right are privately held. However, this might be a great way for Union Square to wear its heart on its sleeve.

These spaces can take any form; we leave it up to the property owners and artists. One could be a place for people to gather and mingle. Another could be an outdoor gallery. The next could be a temporary installation. There's also a flexibility in these spaces since they are not right-of-way. They can change and adapt as the users of the buildings come and go. Undoubtedly, if given the opportunity, they would all create something memorable.

OLIVE SQUARE

Olive Square is the backyard to 285 Washington Street currently occupied by Fringe Union and other makers. The space is secretive, accessed off of Lake Street and practically invisible from Washington Street because of the bridge over the railroad tracks. The area is currently used for parking and loading. Although, it's occasionally activated with events like the Red Fire Farm farm share pick-up. At one point there were some chickens running around too.

New owners are planning to formalize the space as a parking area and improve landscaping. That doesn't mean that it can't be used for other events during non-peak times.

347 SOMERVILLE AVE. FABRICATION COURTYARD

When Somerville Avenue was straighted, it created the distinctive street pattern with Bow Street that's recognizable to even novice map users. The space in the middle was filled in with two-story concrete block storage buildings and is currently vacant.

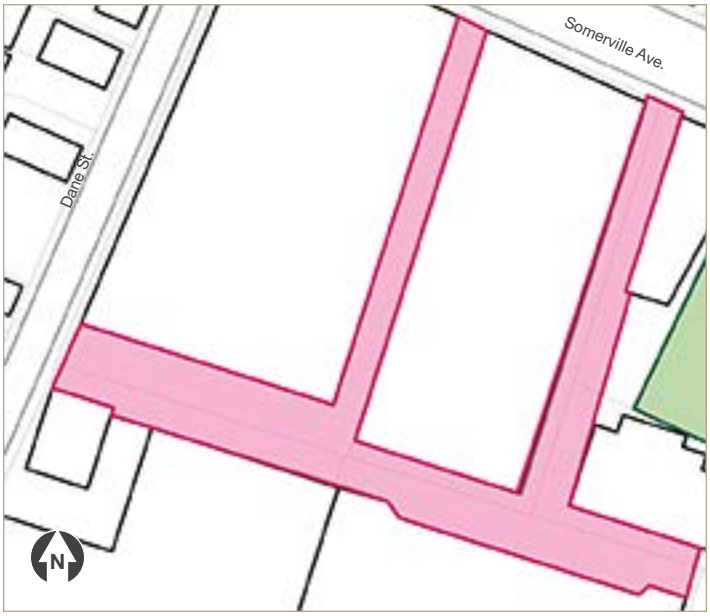
Re-imagine this space as a cluster of artist stalls that spill out onto the courtyard during the day and lit at night by string lights hanging from roofline to roofline. It will invite individuals to explore and find their new favorites almost anytime of day. This area is protected from the wind so it can stretch the spring and fall seasons.

AMERICAN TUBE WORKS

The American Tube Works Complex was founded in 1851 originally produced tubing for steam engines and then later domestic plumbing fixtures. It stayed in business until 1933 when the Great Depression halted construction.

The buildings now are home to many creative uses including Be Yoga, P.irateship, and Greentown Labs. Greentown is expanding from their current space to across the alley into 444 Somerville Avenue (the current Maaco body shop) soon.

There's potential to connect the uses by more than asphalt. Imagine a maintained shared passage where products being developed in Greentown Labs are being tested and people are encourage to peek into the windows and see what's going on inside.



Giving Shape to the D Parcels

Building on the Revitalization Plan

In the summer of 2012, the City of Somerville signed a Memorandum of Agreement with the Massachusetts Bay Transportation Authority (MBTA) and Massachusetts Department of Transportation (MassDOT) to acquire land in Union Square that was needed by the MBTA to build the Union Square terminus station for an extension of the Green Line. In return, the Commonwealth of Massachusetts made a firm commitment to fund and build the Green Line Extension (GLX). Later that same year, the Somerville Redevelopment Authority (SRA), Somerville Board of Aldermen, and the Massachusetts Department of Housing and Community Development (DHCD) approved a Revitalization Plan for Union Square that provided the City with the tools needed to help the MBTA, but also provided the authority needed to coordinate the redevelopment of other underutilized parcels within walking distance to the future transit station.

Gaining access to these tools from the State was paramount to ensure that any new development or redevelopment that occurred around the new transit station fully captured the value that new transit service can bring to the neighborhood. Previous City-led efforts, including designation of Union Square as a federal Neighborhood Revitalization Strategy Area (NRSA) and a major rezoning in the core of the Square, failed to spur private investment at a scale sufficient to transform underutilized properties in Union Square, the surrounding industrial areas of Boynton Yards, and the McGrath/Medford Street corridor. It had become clear that the City needed to become an active participant in the revitalization of key parcels in Union Square. Private interests were not going to do it alone.

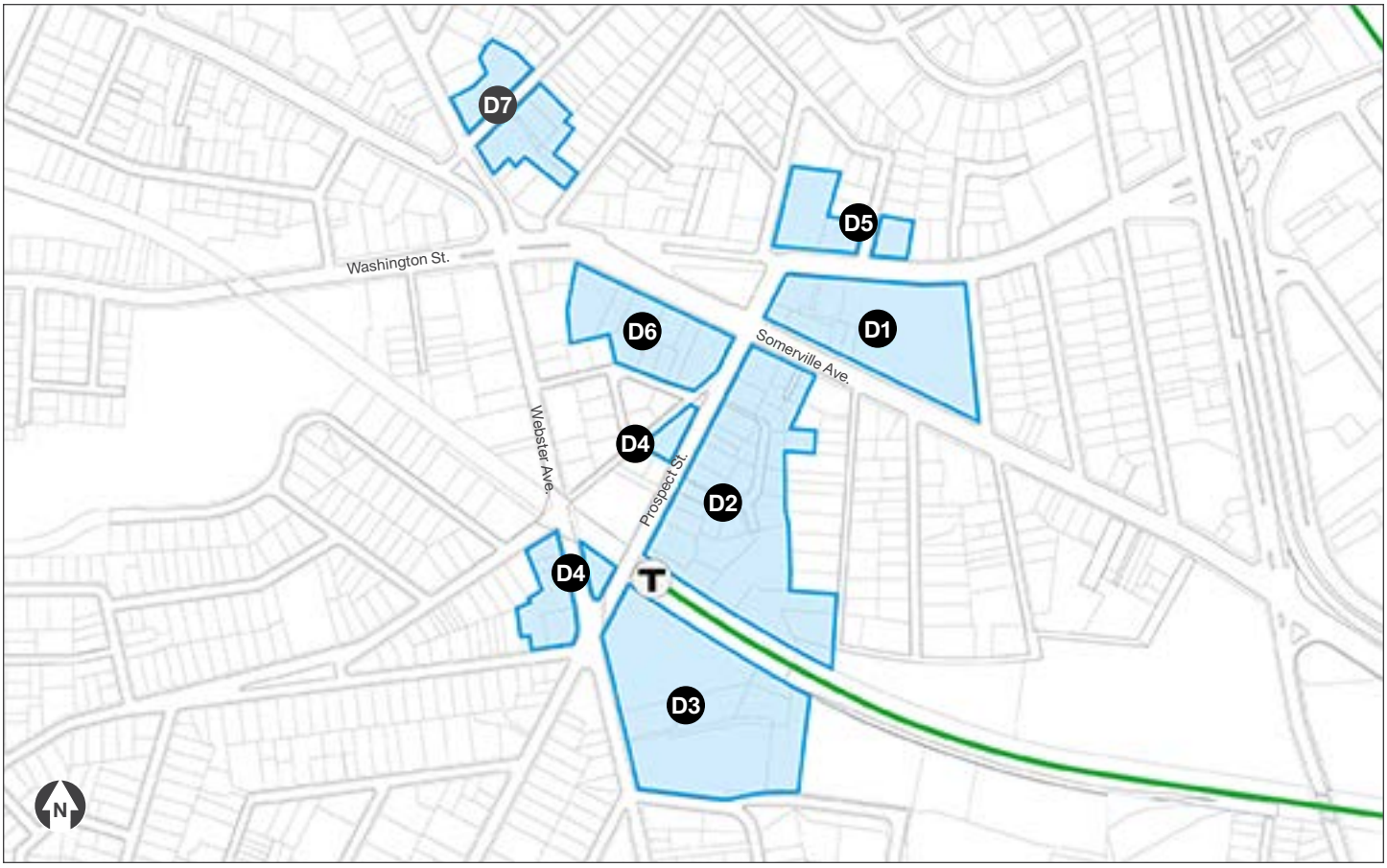
The Union Square Revitalization Plan identifies seven development parcels (the D Parcels) and initiated a process to select a capable development partner (a Master Developer) that could guide redevelopment of those parcels (see following pages and 248 for more information). Each D Parcel is made up of one or more lots. A lot, by definition, is a bounded area of land owned and intended for the purpose of sale, legacy, or development at any time. Some of the D Parcels are an assemblage of non-contiguous lots (meaning they don't touch), such as D4, D5, and D7, and all of the D Parcels have multiple owners. To date, the Somerville Redevelopment Authority has only acquired D2 from its previous owners and is not expected to use its authority to do the same for the remaining D Parcels unless absolutely necessary. D Parcel owners are encouraged to work with the City's master developer.

ABOVE: Somerville Mayor Curtatone with former Governor Deval Patrick and Secretary of Transportation Richard Davey at the ground breaking of the Green Line Extension

The following pages present a vision for each of the seven D Parcels. During the Union Square neighborhood planning Process, designs for each of the D Parcels was presented, critiqued, and updated through numerous feedback loops. Each parcel contributes to the targets of SomerVision through the creation of jobs, housing, and/or open space.

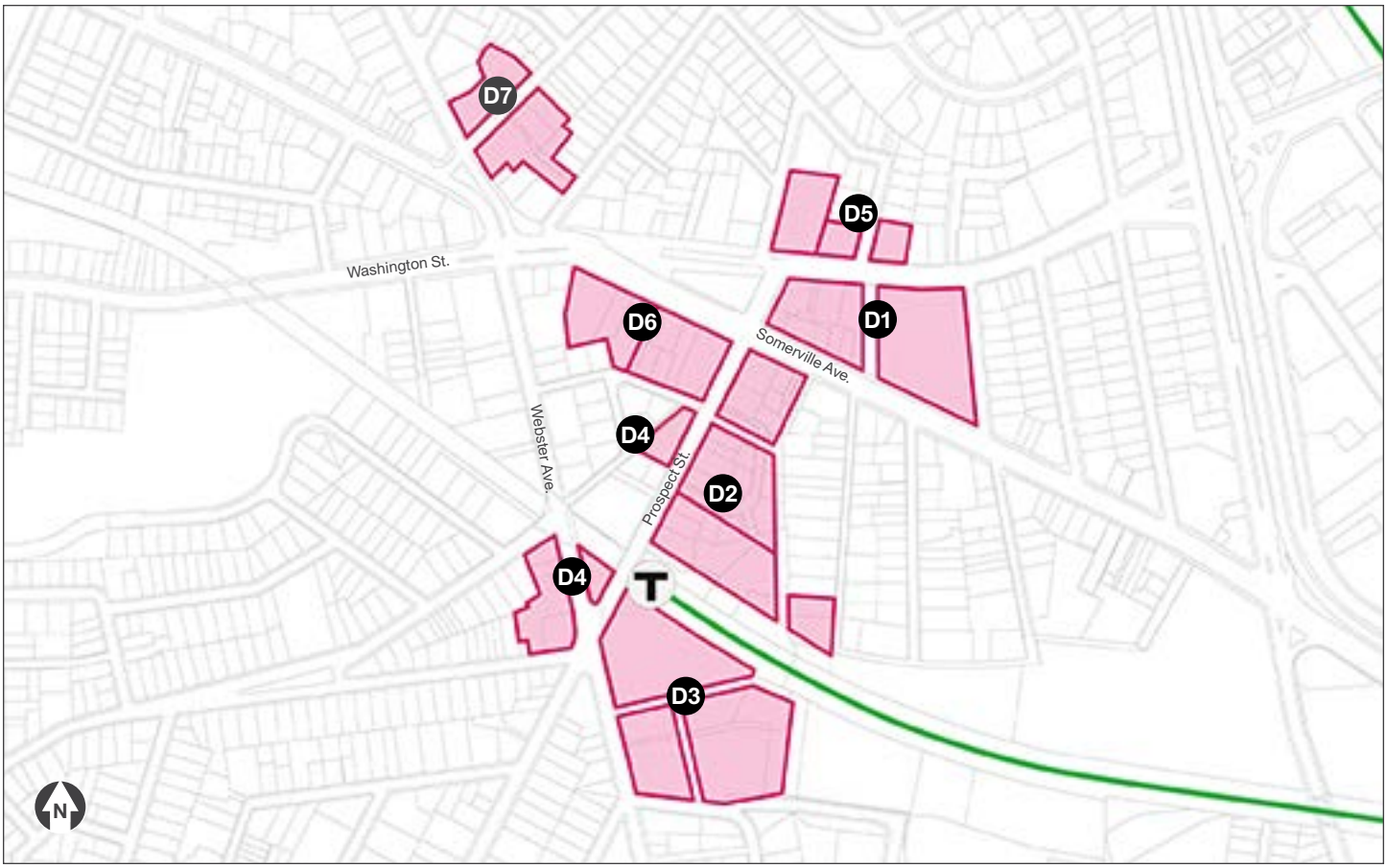
Each section starts with a photo showing existing conditions. At the bottom of the same page there's a graphic representing the extents of each D Parcel and how each should be subdivided into a number of smaller lots for redevelopment. The accompanying narrative explains character of development envisioned for each site and is followed by a list of development objectives. Development objectives are details for each parcel that will inform updated zoning that will need to be adopted to regulate development activities according to expectations determined during the neighborhood planning process.

The architectural design of each building is not prescribed in this document, as the massing models on the following pages simply show form and scale appropriate for each site. Any watercolor illustrations shown depict a possible version of what development could look like and show an iteration of how the design objectives can be achieved. They provide us with a better reflection of how Union Square might look after development is finished, but it is only an example. During the permitting processes, the community will have the opportunity to provide feedback on the design for each new building.



ABOVE: The D Parcels as identified in the 2012 Union Square Revitalization Plan.

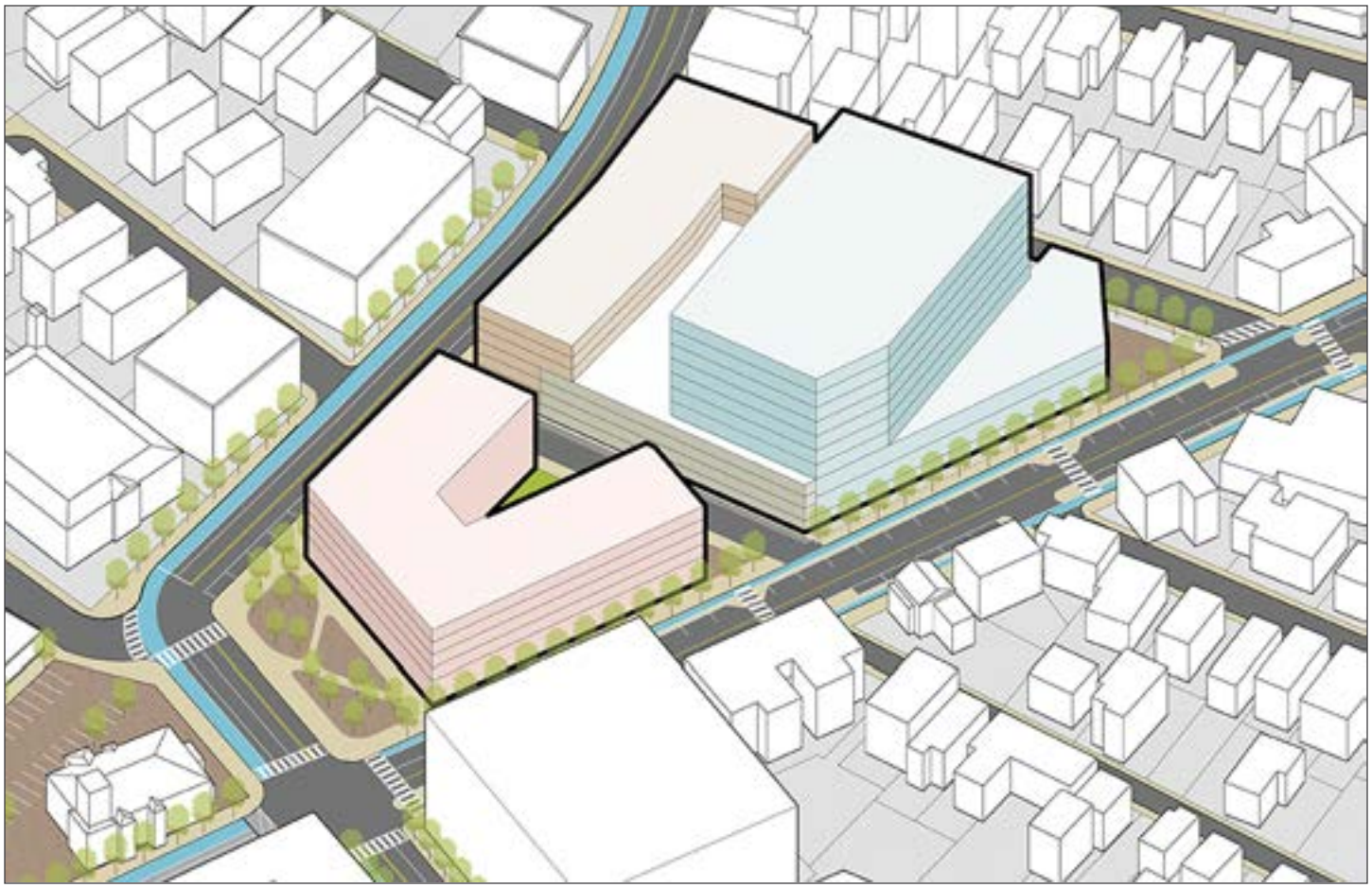
BELOW: Many of the D Parcels will benefit from subdivision. This will make the blocks a human scale, provide for alleys and access, and guide a more nuanced development pattern.



PARCEL D1

The D1 Parcel is currently the site of Ricky's Flower Market, the Somerville Public Safety Building (Police & Fire Departments), Fred M. Susan & Sons Auto Painting and one house. The City is currently working with the Somerville Police and Fire Departments to determine proper locations for these stations. The City has undertaken a needs study to determine the best location for a new fire station because the current site is not ideal for fire response. The Police Department can be relocated to any suitable location in Somerville.

When redeveloped, the D1 Parcel should be subdivided into at least two lots: D1.1 and D1.2 (see below). Civic uses should remain a significant feature of the D1 block, such as a public library or community center. The D1 block could also host a new SCATV studio, freeing up the historic fire station on Union Square Plaza for a more active ground floor use. The community has expressed a strong preference to retain Ricky's Flower Market within Union Square and the owner of the market, the master developer, and the City continue to work together to determine a proper location.



Regardless of that decision, a portion of the D1 Parcel closest to Washington Street can be designed as a public space, reinforcing the view of the historic post office from the Union Square Green Line Station and Prospect Street.

Lot D1.1 should be a 5-story commercial building and is suitable for a hotel or office uses. The site can fit an almost 21,000 s.f. floorplate within setbacks. Lot D1.2 can fit over 60,000 s.f. of building within setbacks, but should be developed as a 'lined block' building type where a central parking garage is disguised by other building types along the frontage. The site can be developed as heavily commercial with some residential space. An estimated 525 parking spaces could be built on-site within the parking structure. However, this site is located within 1/4 mile of the future Union Square station and should not have any minimum parking requirement because of its close proximity to transit.

DEVELOPMENT OBJECTIVES

Parcel Divisions

- The D1 Parcel should be platted into two or more lots
- A pedestrian passage and/or alley should be provided from Washington Street to Somerville Avenue between D1.1 and D1.2, generally aligning between Columbus Avenue and Allen Street.

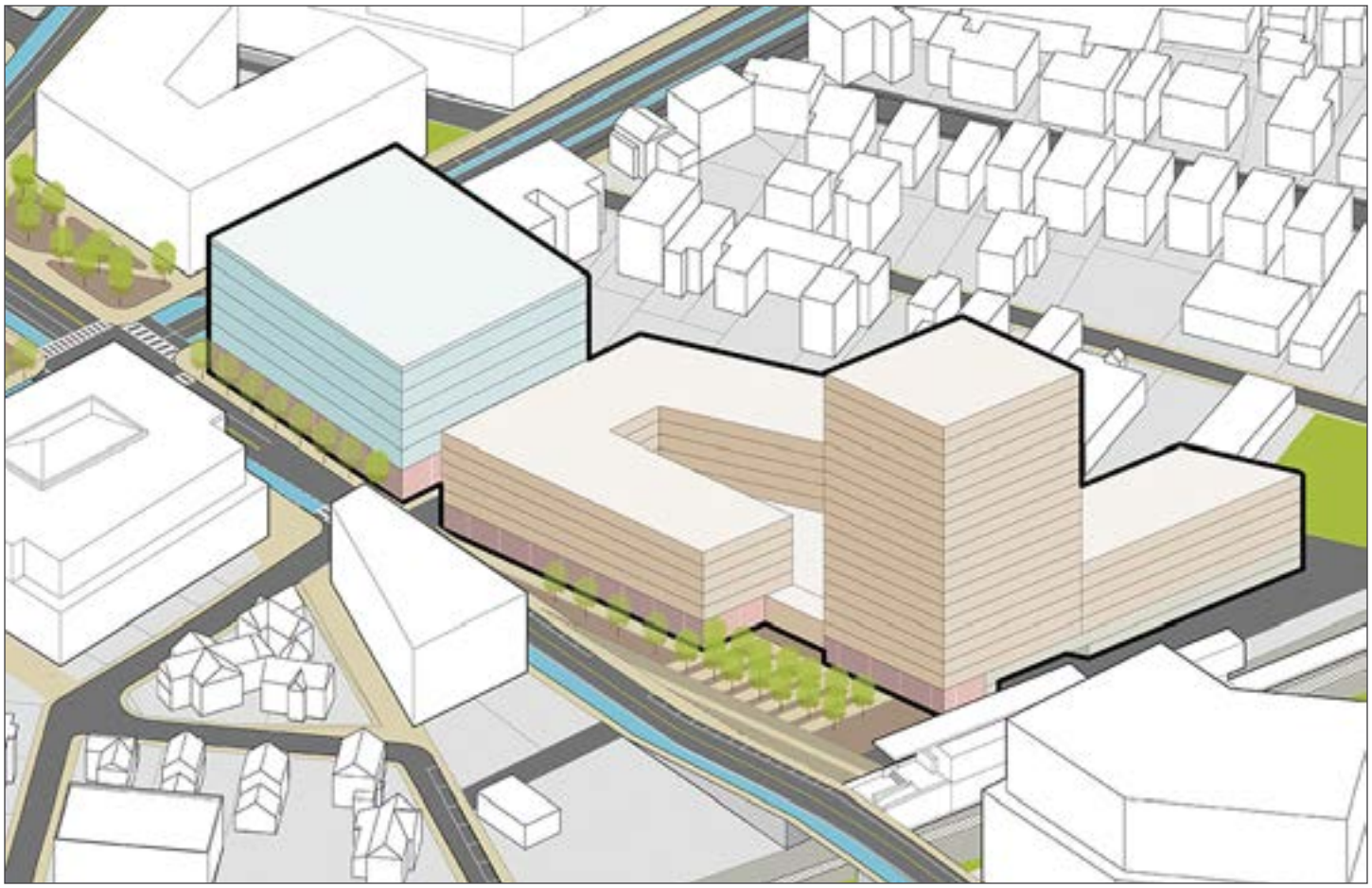
Lot Development

- At least 15% of the D1 Parcel should be provided as useable open space unless aggregated offsite.
- Lot D1.1 should be developed as a 5-story commercial building.
- Lot D1.2 should be developed as a lined block building type, where above ground structured parking is lined by other building types.
- Liner buildings should be 5-story commercial buildings, row houses, or 6-story general (mixed-use) buildings with ground floor retail and upper story residential. A 10-story commercial building could be located at the core of the lined block.
- Front setbacks should be increased abutting Somerville Avenue and Washington Street to accommodate sidewalks that are at least 12 feet in width.
- Off-street parking for D1.1 should be located underground or located off-site (such as on D1.2 or D2) and can serve be shared between multiple on-site or off-site buildings.

PARCEL D2

The D2 Parcel is currently owned by the Somerville Redevelopment Authority (SRA) and is located between the Fitchburg commuter rail right-of-way and Somerville Avenue, along the east side of Prospect Street. This parcel, called the "North Prospect Block" in the Union Square Revitalization Plan, previously included a number of industrial uses for many years, including the former scrap yards of Prospect Iron and Steel as well as the former Kiley Barrel company. D2 was acquired by the SRA to not only facilitate construction of the future Union Square station, but also ensure that when the station opened it would be surrounded by transit oriented development instead of industrial uses.

When redeveloped, the D2 Parcel should be subdivided into at least four lots: D2.1, D2.2, D2.3, and D2.4 (see below). The D2.1 lot was identified early as a site that could accommodate an office or laboratory type of commercial building. The site can fit an estimated 150,000 s.f. of commercial space, with ground floor retail. D2.2 and D2.3 could also be commercial



buildings, but these lots will need to provide parking for a number of other buildings. This parking will most likely be built above ground because the site has a number of environmental challenges due to previous uses. As a result, D2.2 and D2.3 are more likely to be developed as a lined garage or podium tower building types because residential uses have more flexibility to hide parking.

D2.2 can fit a 29,750 s.f. floorplate within setbacks and can accommodate dwelling units on upper floors with at least 8,750 s.f. of ground-floor retail. D2.3 can fit a 18,300 s.f. floorplate within setbacks and can accommodate residential on upper floors with an estimated 4,500 s.f. of ground-floor retail. An estimated 345 space parking structure could be built on-site across D2.2 and D2.3. However, this site is located adjacent to the future Union Square station and should not have any minimum parking requirement because of its close proximity to transit. D2.4 is a small lot at the rear of the site and should be a smaller scale infill buildings or open space because is more a part of Allen Street than D2.

DEVELOPMENT OBJECTIVES

Parcel Divisions

- The D2 site should be platted into four or more lots.
- An alley should be introduced into the D2 block to provide rear access and loading for any future development, including for lots fronting Allen Street.

Lot Development

- At least 15% of the D2 Parcel should be provided as useable open space unless aggregated offsite. A plaza providing in front of Lot D2.3 providing access to the Union Square Green Line Station is preferred.
- Lot D2.1 should be developed as 7-story commercial buildings (office or laboratory) with first-floor retail.
- Lot D2.2 should be developed as a 6 story general (mixed-use) building with residential over retail.
- Lot D2.3 should be developed as a podium tower building. The podium could be up to 6-stories of residential with ground-level retail and the tower could be up to 20 stories in total.
- Off-street parking should be located underground or in structures lined by other uses.
- Front setbacks should be increased abutting Prospect Street to accommodate sidewalks that are at least 12 feet in width.
- D2.4 should be a small infill building or open space.

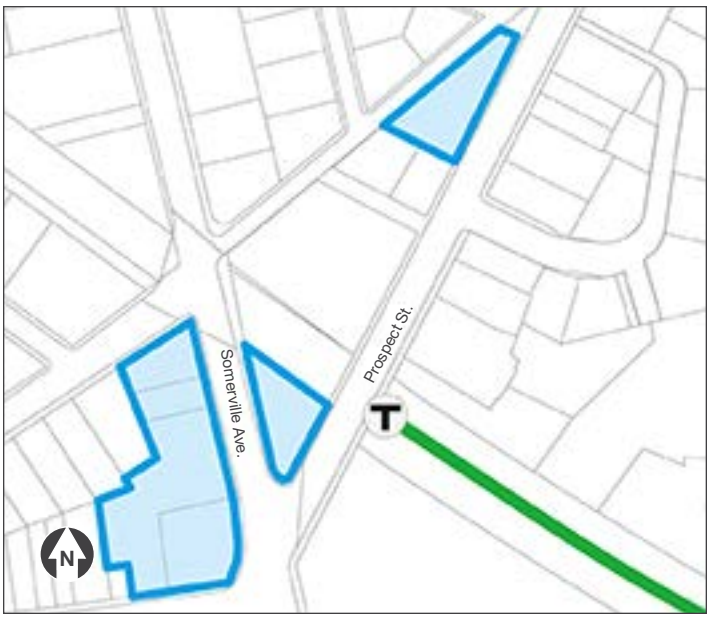

COSTA
COSTA

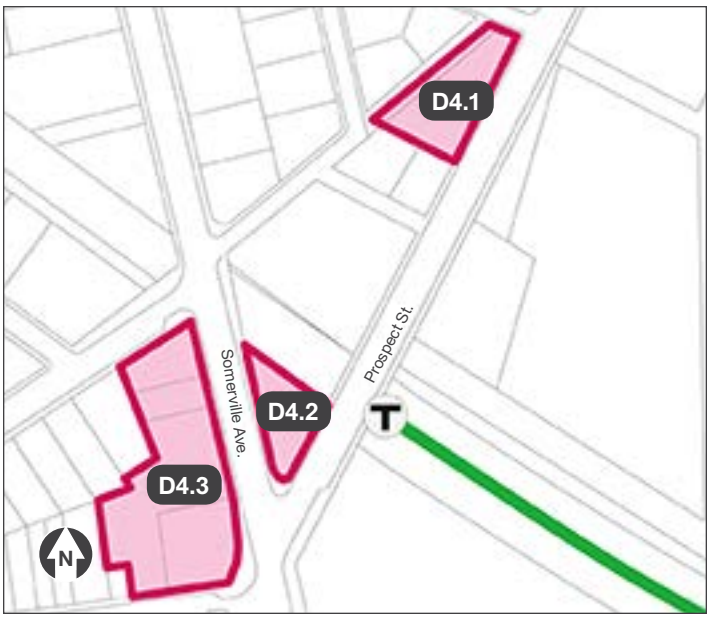
PARCEL D4

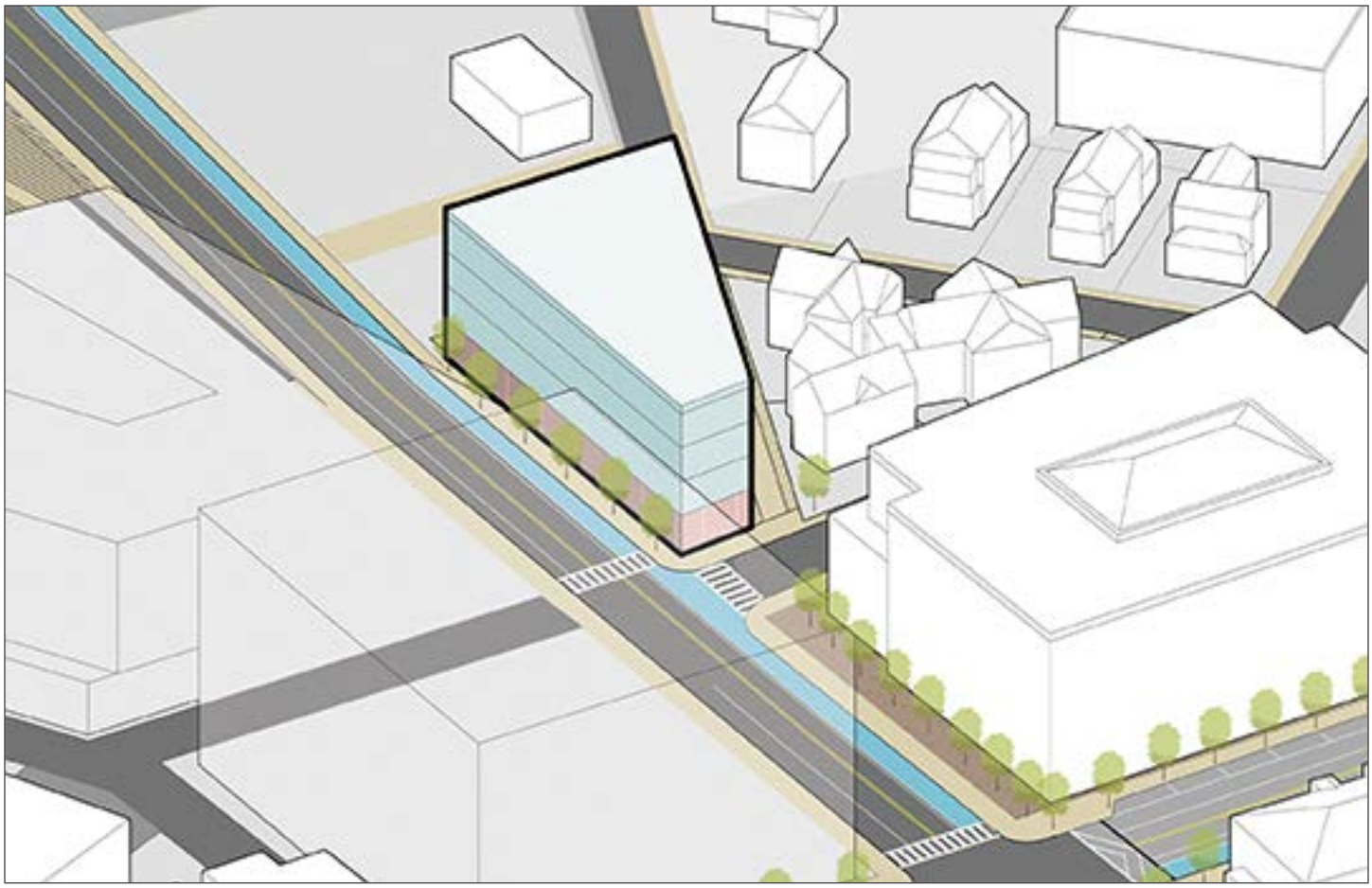
The D4 Parcel is actually a group of noncontiguous lots and currently includes CrossFit Somerville at 35 Prospect Street along with Webster Auto Sales, JN Phillips Auto Glass, and DM Auto Service, which are clustered on both sides of Webster Avenue between Prospect Street and Newton Street. Together, these lots D4.1, D4.2 and D4.3 serve to frame the street space opposite redevelopment on the D2 Parcel.

Key to the redevelopment of this area is a redesign of the streets surrounding D4.1, where Everett is extended to provide a more regularly angled intersection with Prospect and a portion absorbed into the D6 Parcel. Additionally, Newton Street between Emerson and Everett should be decommissioned and redesigned as a pedestrian passage and small expansion in width of the D4.1 lot.

Lot D4.1 has a close relationship to D2 across Prospect Street and should be redeveloped to create a iconic 4-story "flat iron" commercial building that will also provide a transition in scale from the existing residential homes to the west and







the dense, transit oriented development on D2. The site can accommodate over 25,000 s.f. of commercial space on upper floors and about 5,500 s.f. of ground floor retail. Including active ground floor uses in D4.1 will help create a two-sided retail street along Prospect.

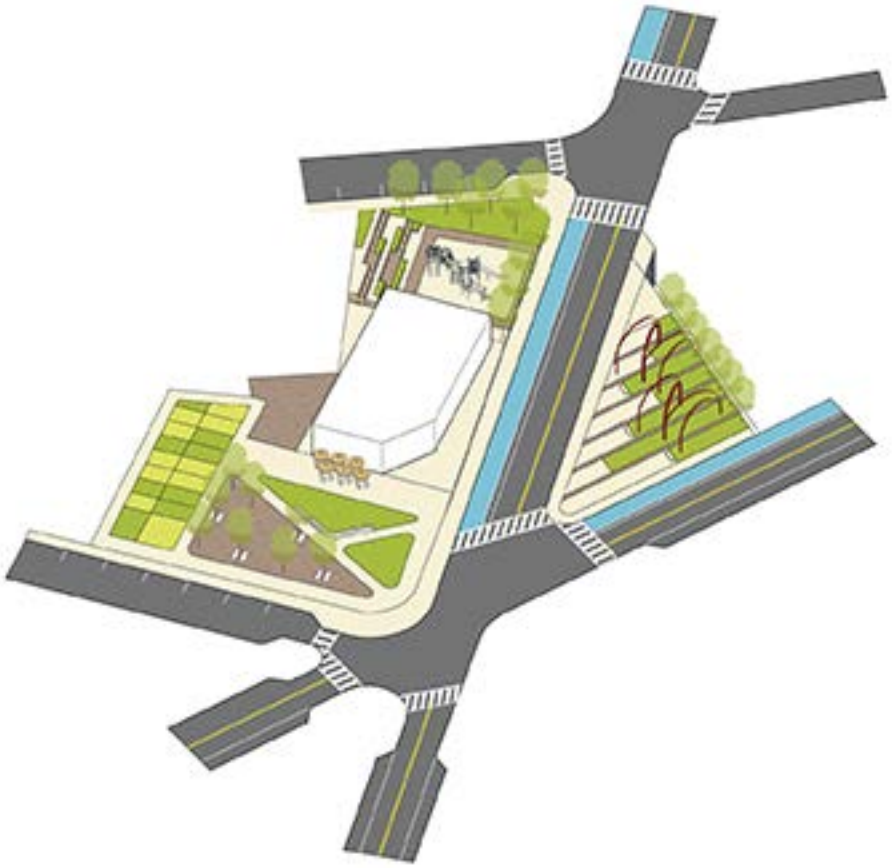
Parking for D4.1 will also most likely be provided on D2. However, this site is located across the street from the future Union Square station and should not have any minimum parking requirement because of its close proximity to transit.

This plan envisions D4.2 and D4.3 as an expanded version of the Concord Ave Community Space created by local community members behind JN Phillips Auto Glass. The current, but de-facto, public space is well loved by many in the community and could be transformed into a real neighborhood park. This would be made possible by allowing D4.2 and D4.3 to function as 'receiving lots' for any required useable open space that must be provided by other D Parcels ('sending lots').

DEVELOPMENT OBJECTIVES

Lot Development

- At least 15% of the D4 Parcel should be provided as useable open space unless aggregated offsite.
- Lot D4.1 should be developed as a 4-story mixed-use or commercial building.
- Lot D4.2 and D4.3 should be designed as a new public space.
- The design of D4.2's portion of the new public space is encourage to accommodate the various transportation modes that cross paths in this location, such as providing bike parking.
- The D4.3 portion of the new public space should retain or even expand the existing community gardens. A Neighborhood Park type of public space is recommended for this site.
- Front setbacks should be increased abutting Prospect Street to accommodate sidewalks that are at least 12 feet in width.



ABOVE: A new neighborhood park expands upon the Concord Avenue Community Space. This design includes community gardens, a plaza, a community building, and playground. Any design will be vetted through the permitting process.

BELOW: A new neighborhood park expands upon the Concord Avenue Community Space. This design includes community gardens, a playground, and a large lawn. Any design will be vetted through the permitting process.

BELOW: D4 includes 4 noncontiguous parcels including JN Phillips Auto Glass and DM Auto Service. One of these buildings could be incorporated into the design of a D4 park.

ABOVE: The Concord Avenue Community Space is an informal garden started by residents of Union Square on a vacant space at the back of D4.

PARCEL D5

The D5 Parcel includes three lots, the former Union Square Post Office, the adjacent Gulf Station, and nearby Monro Muffler Break & Service: D5.1, D5.2, and D5.3 (see below). Lot D5.2 and 6 Columbus Avenue, the residential lot to the rear, are under common ownership and considered one site for the purposes of this plan.

The former Post Office building at D.1.1 is envisioned to remain as a key historic feature of Union Square and could potentially be occupied by a mix of uses that can serve as an anchor for the core of the square, including a marketplace, food and retail vendors, performing arts space, and/or office and co-working space in the very near future.

When redeveloped, D5.2 and D5.3 should be modest, 4-story general (mixed-use) buildings with ground-floor retail and upper story residential. An 8,000 s.f. building can fit on each lot and can accommodate housing on upper floors and 5,600

s.f. of ground-floor retail.

Parking for all of the D5 lots will most likely be provided on D1. However, this site is located 1/4 mile from the future Union Square station and should not have any minimum parking requirement because of its close proximity to transit.

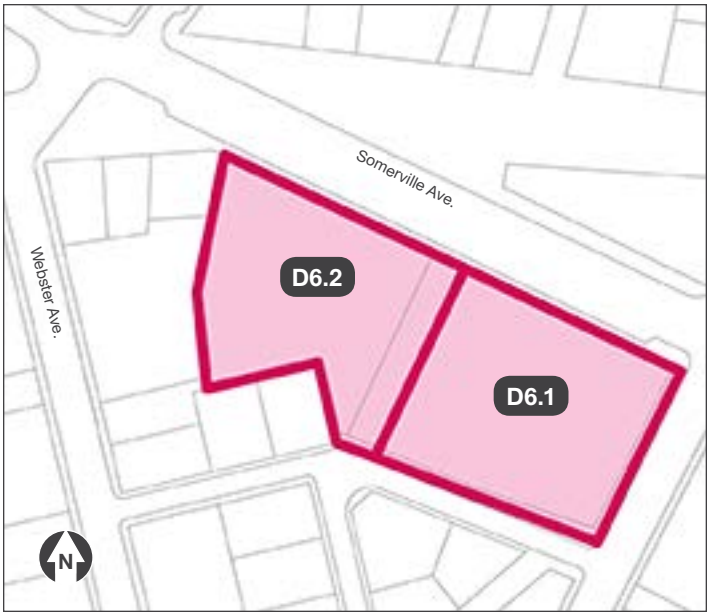
DEVELOPMENT OBJECTIVES

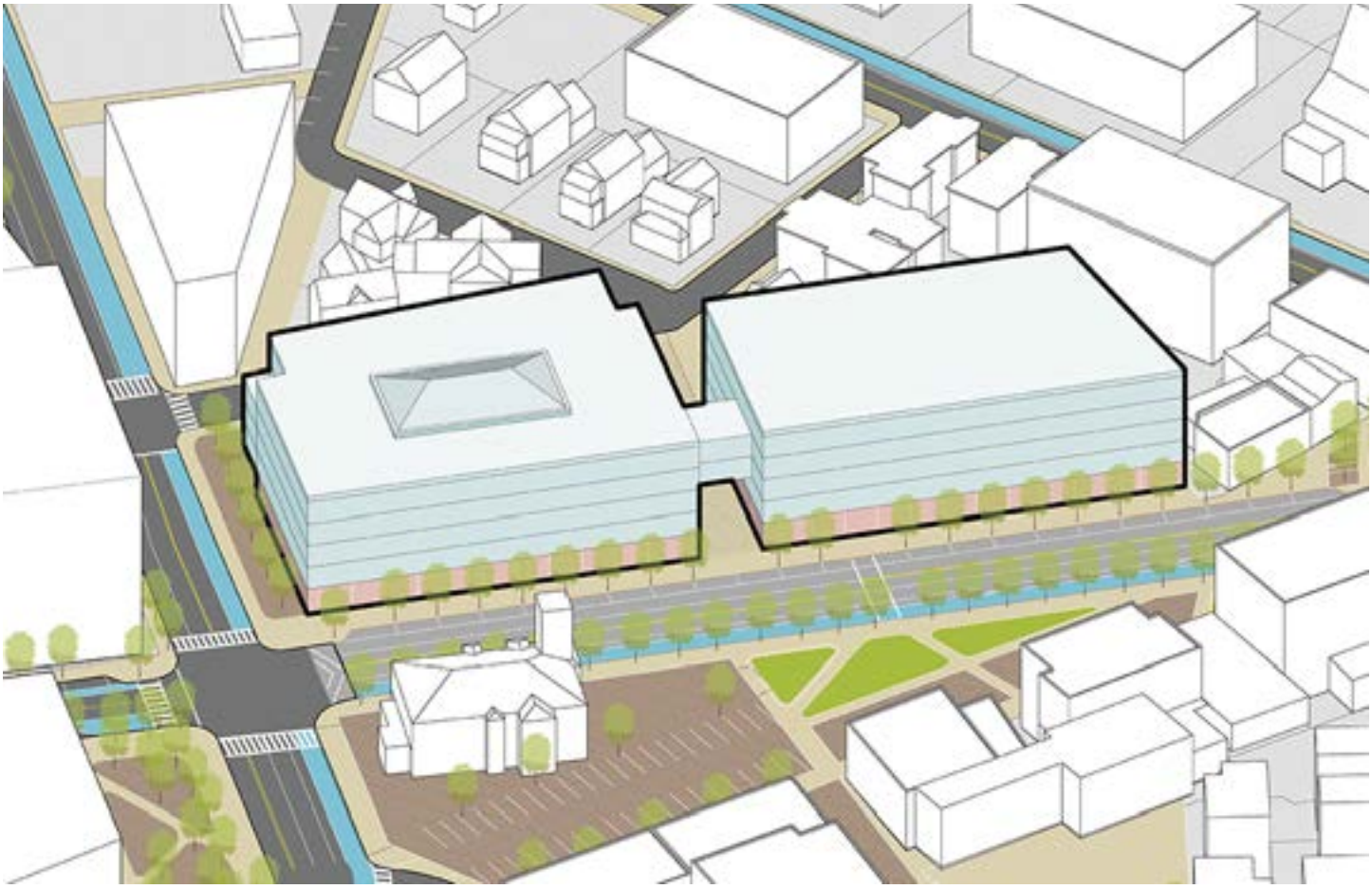
Lot Development

- At least 15% of the D5 Parcel should be provided as useable open space unless aggregated offsite.
- The historic former post office (Lot D5.1) should be renovated into a mix of uses that serve the community. Possible uses could include performance arts space, retail and food vendor stalls, office uses, and co-working space.
- 6 Columbus Avenue, a residential lot at the rear of D5.2, should be incorporated into the site and rezoned to match the zone of Lot D5.2, and combined with Lot D5.2 (both lots are under common ownership).
- Lot D5.2 and D5.3 should be developed with 4-story mixed-use or commercial buildings.
- Parking should be underground or (more likely) located off site.
- Front setbacks should be increased abutting Washington Street to accommodate sidewalks that are at least 12 feet in width.
- The front setback of lot D5.2 should be angled to align with the orientation of the post office facade.
- Side setbacks for both D.5.2 and D5.3 should be increased to 10 feet in respect to the abutting properties in a Local Historic District.

PARCEL D6

The D6 Parcel includes all of the lots along the south side of Somerville Avenue facing the core of Union Square, between Prospect Street at the east to the Buk Kyung Restaurant to the west. Ebi Sushi is a notable business on D6. When redeveloped, the D6 Parcel should be subdivided into two or more lots: D6.1 and D6.2 (see below). Both of the D6 lots were identified early in the Union Square neighborhood planning process as sites that could accommodate an office or laboratory type of commercial building. This site is also an ideal location for a hotel overlooking the main plaza. A pedestrian passage is desired between the two D6 buildings to connect Somerville Avenue to Everett Street. To further improve pedestrian circulation, a crosswalk is planned to connect the middle of the main plaza with the pedestrian passage of D6. If a hotel does decide to locate here, this passage can also serve as the vehicular access point and drop-off for guests.





On Lot D6.1, an estimated 125,000 s.f. of office space on upper floors and at least 15,000 s.f. of ground floor retail. Lot D6.2 can accommodate a building almost equal in size and at least 15,000 s.f. of ground floor retail. These lots can fit the typical depths that office buildings are looking for, but limitations on the total floor area available may cause a need for a 'skywalk' like the one that connects the buildings on either side of Palmer Street in Harvard Square (at the back side of the COOP).

Although this site is large enough to build parking underground, parking for both D6 lots will most likely be provided on D2 or D1. However, this site is located within 1/4 mile of the future Union Square station and should not have any minimum parking requirement because of its close proximity to transit.

DEVELOPMENT OBJECTIVES

Parcel Divisions

- The D6 Parcel should be platted into two or more lots (D6.1 and D6.2).
- A pedestrian passage should connect Somerville Avenue to Everett Street between D6.1 and D6.2, generally aligning at the center of the block.

Lot Development

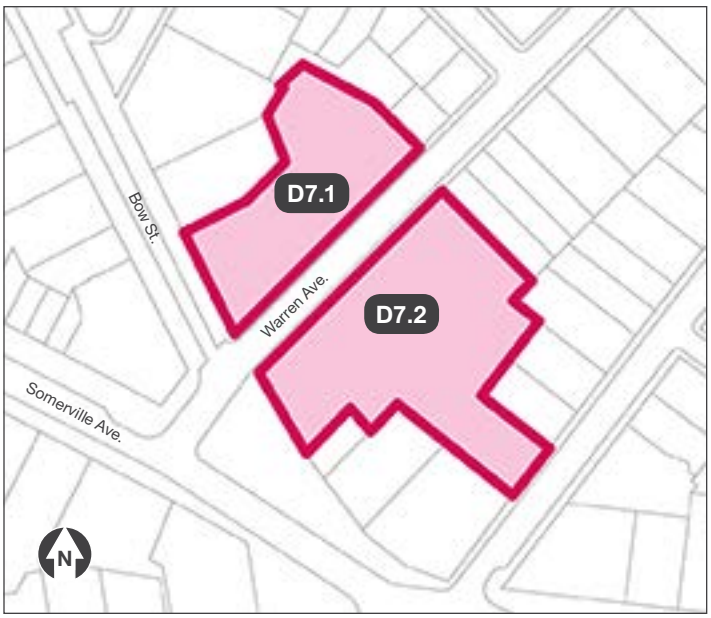
- At least 15% of the D6 Parcel should be provided as useable open space unless aggregated offsite.
- All D6 lots should be developed as 5-story commercial buildings with ground floor retail.
- Development on D6.1 should be set back from Prospect Street to increase views of the Union Square T Station and provide an advantageous location for outdoor seating. This space could be expanded into a proper plaza by reducing the width of the D6 buildings.
- Off-street parking should be underground or located off-site (for example, at D1 or D2).
- If either D6.1 or D6.2 is developed as a hotel, the pedestrian passage should serve as the vehicular access point and drop-off for the hotel.
- Front setbacks should be increased abutting Somerville Avenue and Prospect Street to accommodate sidewalks that are at least 12 feet in width.
- The rear of the D6 buildings should parallel to Everett Street and include an additional setback to provide visual relief for properties behind the development site.


L'OCCITANE

PARCEL D7

The D7 Parcel includes two sites on either side of Warren Avenue, currently the locations of Goodyear Tire and Citizens Bank. Although D7 currently contains single-story buildings, there were tall four-story structures here even until the end of World War II. When redeveloped, each site could be a single building. However, both might look best if designed to look like two buildings that recreate the smaller context of neighboring properties because they may be over 200 feet wide. Both D7 lots are particularly well-suited for residential development targeted toward families due to their close proximity to a number of public spaces, the Argenziano School, and various local businesses. D7 also fronts on a neighborhood street.

Lot D7.1 can fit a 12,500 s.f. floorplate fits within setbacks and can accommodate residential on the upper floors and at least 4,750 s.f. of retail fronting onto Bow Street. A portion of this building could step back on the courtyard side of Bloc 11 cafe to increase the duration of sunlight into the space. Lot D7.2 can fit a 11,750 s.f. floorplate within setbacks and can



accommodate some dwelling units on the upper floors and at least 4,750 s.f. of retail fronting onto Somerville Avenue. This site has the potential to redevelop alongside 45-56 Union Square, the current site of Reliable Market and other small businesses. Potential redevelopment on that 'scattered site' is explored on page 200. If both were redeveloped together, circulation and parking could be solved for the entire block face in an easier manner.

DEVELOPMENT OBJECTIVES

Parcel Divisions

- An alley should be introduced into the D7.2 block to provide rear access for properties fronting onto Somerville Ave. any new development on D7.2.
- The new alley should align behind buildings to create an 'end cap' block or may have off-set entrances to a 'common block' with a surface parking area shared between multiple lots.

Lot Development

- At least 15% of the D7 Parcel should be provided as useable open space unless aggregated offsite.
- Lot D7.1 should be developed as a 4-story general (mixed-use) building with upper story residential and ground floor retail fronting onto Bow Street.
- Lot D7.2 should be developed as a 5-story general (mixed-use) building with upper story residential and ground floor retail fronting onto Bow/ Somerville Avenue.
- Any building on 7.1 or 7.2 that is over 200 feet in width along Warren Avenue should be designed to look like two buildings that recreate the smaller context of neighboring properties.
- Front setbacks should be increased abutting Bow Street and Somerville Avenue to accommodate sidewalks that are at least 12 feet in width.
- Off-street parking could be provided at grade if common block parking is created. If a continuous alley is not plausible, alley access should be introduced to create a 'common block' with a parking area shared between multiple lots.

Exploring Scattered Sites

Opportunities for Smaller Scale Infill Development

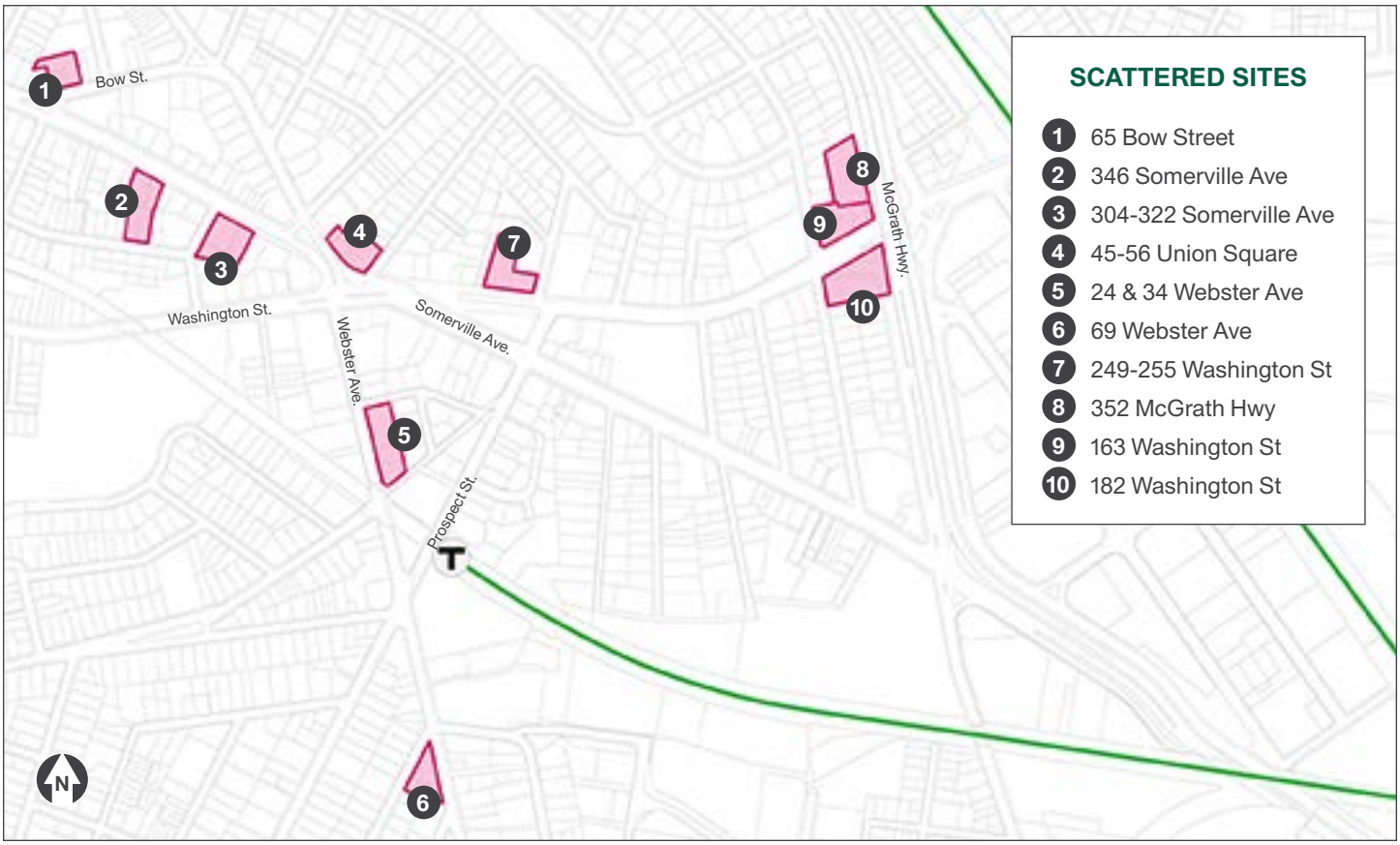
Redevelopment of the D-Parcels will go a long way to achieving SomerVision and the development targets for this plan, but they are not the only opportunities. During the Union Square neighborhood planning process, community members asked the Mayor's Office of Strategic Planning and Community Development (OSPCD) to look for sites outside of the seven D-Parcels that might also have something to offer through redevelopment. This section explores ten such sites.

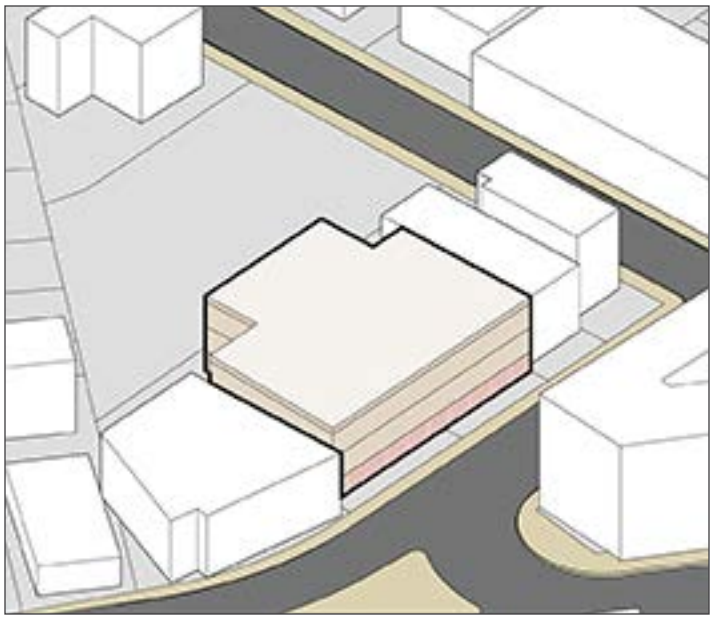
FINDING SMALLER SCALE INFILL

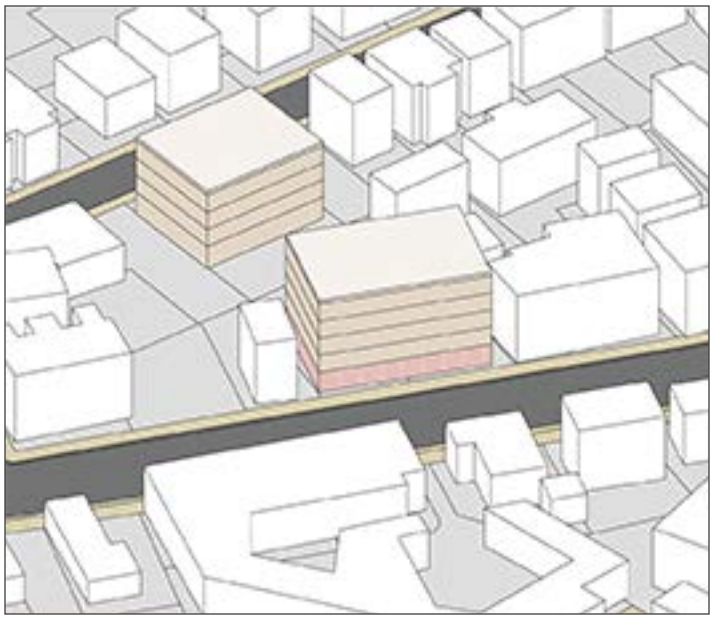
In 2015, OSPCD hired RCLCO, a national real estate advisory firm, to examine how a newly proposed zoning ordinance may impact economic activity within the City. To conduct their analysis, RCLCO surveyed properties across the city to determine if they meet specific criteria that would make them probable for development or redevelopment.

To conduct their analysis, RCLCO began with a database of every property within the city outside of the existing RA and RB (residential) zoning districts. Properties that had circumstances making them significantly less likely to be redeveloped, including things such as historic buildings, civic uses, public spaces, recent construction, buildings with residential condos, and apartment buildings with more than eight units, were removed. A field survey of the remaining parcels determined the condition of existing structures and site characteristics and also gathered information about development plans, anticipated constraints, and likely timelines. From this survey, RCLCO gave each parcel a qualitative rating from low to high probability for redevelopment. Additionally, the potential square footage and the assessed value for each parcel once redeveloped was estimated. RCLCO then took the potential square footage and assessed value of each lot and subtracted from it the existing building area and existing assessed value. The resulting difference in square footage and value indicates how much upside there would be if each parcel were to be redeveloped. By combining these two metrics, RCLCO identified a total of 221 underutilized parcels across the city. OSPCD used this list of parcels to explore development on the scatted sites of this section.

The architectural design of each building is not prescribed in this document, as the massing models on the following pages simply show form and scale appropriate for each site. During the permitting processes, the community will have the opportunity to provide feedback on the design for each new building.





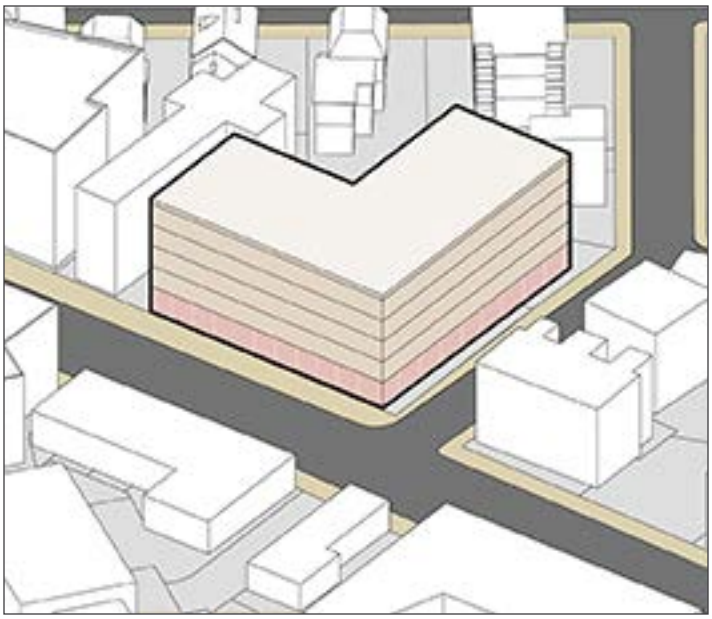


65 BOW STREET

If redeveloped, this site should be a 3-story, general (mixed-use) building with residential over retail. A 7,500 s.f. floor plate fits within setbacks. This site is located within 1/2 mile of the future Union Square Station and should not have any minimum parking requirement because of its close proximity to transit. Any parking must be accessed from the rear of the property, via Bow St. Place and all curb cuts should be removed along Bow Street. Access will need to be maintained to the Eversource substation on the accessory lot at the rear of the property. The site includes a 12′x12′, one-story Colonial Revival historic building with white-painted brick walls and a slate hip roof with a square cupola. This tiny building was one of Somerville's first gas stations operated by Cities Service Refining Co. If redevelopment occurs, CPA funding should be used to help relocate and preserve this structure as a civic building in one of Union Square's new public spaces.

346 SOMERVILLE AVE

This site has frontage onto two streets, Somerville Avenue to the north and Lake Street to the south, so the parcel should be split to create two separate lots with individual frontage on each street. If redeveloped, the northern lot should be a 5-story general (mixed-use) building with residential over retail while the southern lot is more appropriate for an apartment building. The southern lot is suitable for family housing units because of its quiet residential street and close proximity to Argenziano School. A 5,500 s.f. floor plate fits within setbacks for the northern lot while a 4,300 s.f. floor plate fits well within setbacks for the southern apartment building. This site is located within 1/2 mile of the future Union Square Station and should not have any residential minimum parking requirement because of its close proximity to transit. Parking for both buildings should continue to be accessed from Lake Street, as it is today.

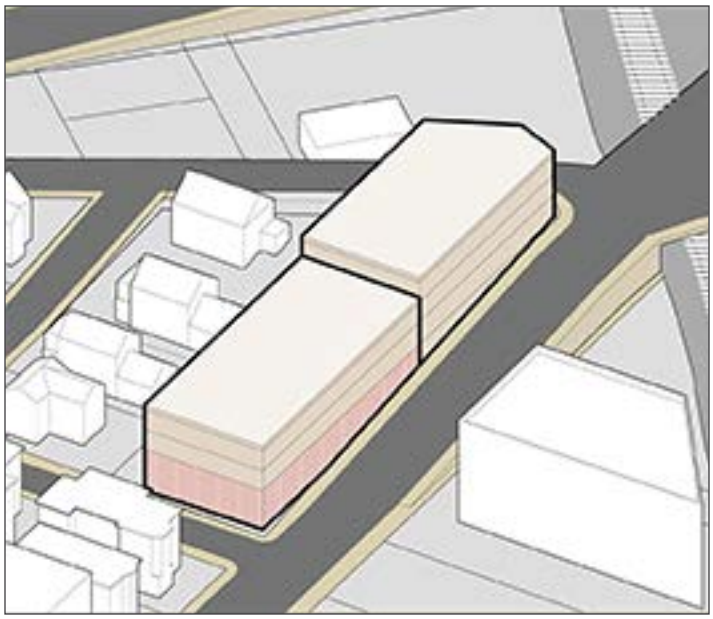


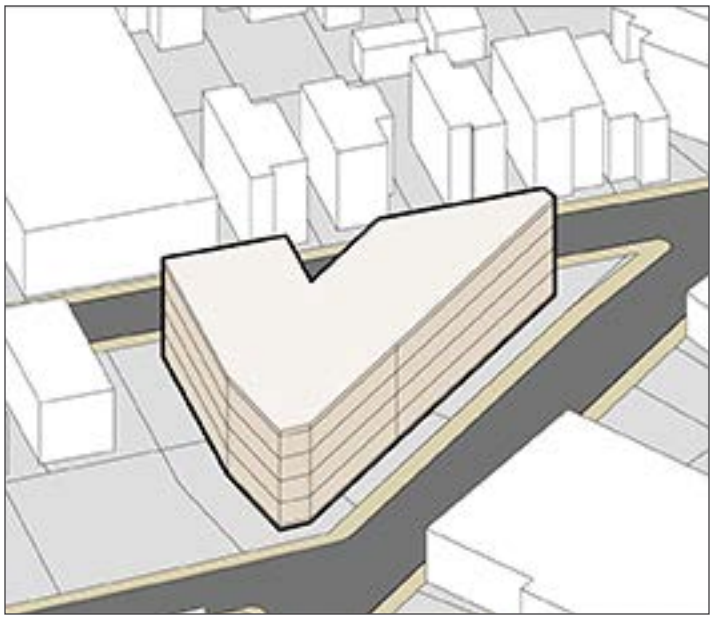
304-322 SOMERVILLE AVE

This site includes three lots and frontage on both Somerville Avenue and Hawkins Street. This site has an approved Special Permit to add two floors, each with one new dwelling unit, onto the single-story commercial structure at 314-316 Somerville Avenue and retain the 3-story general (mixed-use) building at the corner of Somerville Avenue and Hawkins Street. If fully redeveloped, this site could be a 5-story general (mixed-use) building with residential over retail. Using the land area from all three of the lots allows 11,725 s.f. to fit within setbacks. The building should include a minimum of two ground-floor retail tenant spaces, with both oriented toward Somerville Avenue. A high level of ground floor transparency should be included on the Somerville Avenus facades and the lobby entrance to the residential should be located on the Hawkins Street frontage.

45-56 UNION SQUARE (BOW STREET)

This site includes all lots fronting onto Bow Street along this block face that are not part of D7. The parcel has frontage on both Bow Street and Stone Avenue. If redeveloped, this site should be a 5-story commercial building or 5-story general (mixed-use) building with residential over retail. A 11,000 s.f. floor plate fits well within setbacks, but this site is ideally designed as two smaller buildings. The building can accommodate residential units on the upper floors, but upper floor commercial is preferred because it can provide non 'Class-A' office space that is affordable. A minimum of two ground-floor tenant spaces is ideal, with one oriented toward Bow Street and a corner space with frontage on both streets. A high level of ground floor transparency should be included on the Bow Street and Stone Avenue facades. If provided, off-street parking must be located underground or in structures and accessed from an alley at the rear of the property. No curb cuts are permitted on Bow Street.



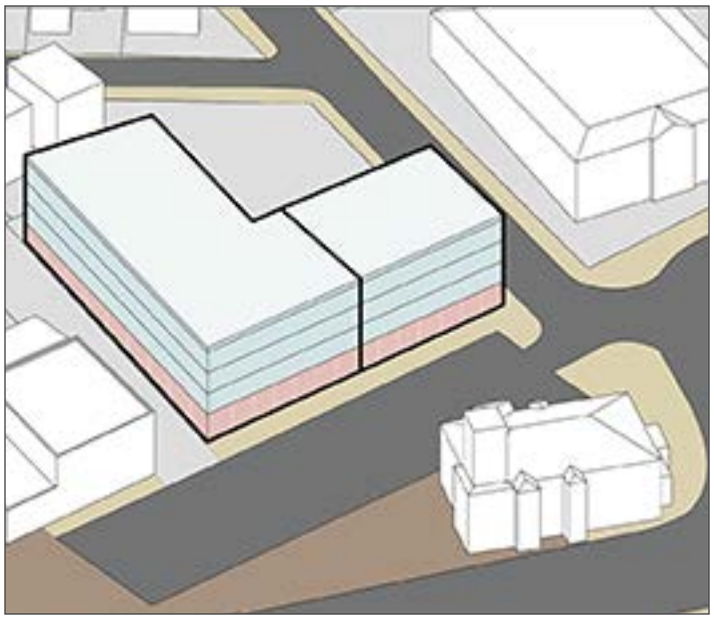


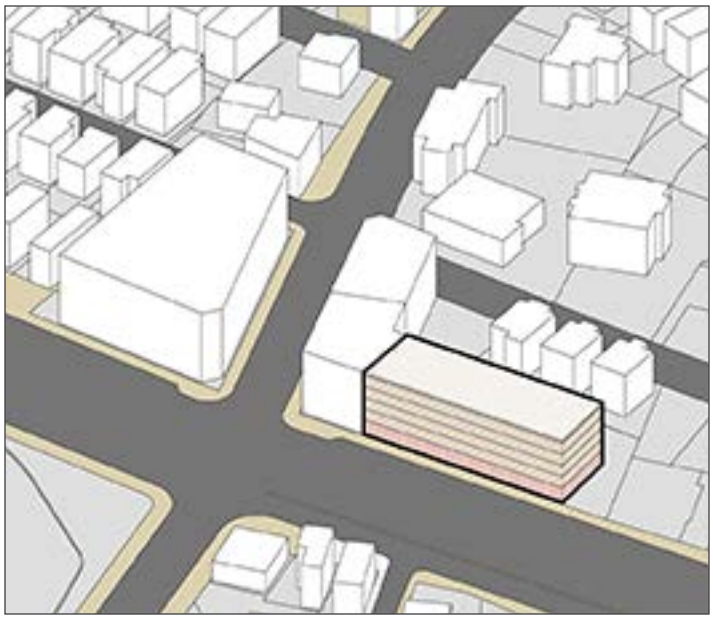
24-32 WEBSTER AVE

This site includes three lots. First, the existing single-story commercial building at 24 Webster Avenue. If redeveloped, this lot should be a 3-story general building with residential over retail. A 7,500 s.f. floor plate fits well within setbacks and can accommodate housing on two upper floors and retail on the ground floor. Second is the currently vacant house at 32 Webster Avenue and an adjacent empty lot. If redeveloped, these two lots should be used together for a 3-story general building with residential over retail. A 6,750 s.f. floor plate fits well within setbacks. Both buildings would help create less expensive, 'off-main street' retail spaces. This site is located within 1/4 mile of the future Union Square Station and should not have any minimum parking requirement because of its close proximity to transit.

69 WEBSTER AVE

This site has frontage on two streets, Webster and Tremont Streets, and is an oddly shaped triangle that will make construction more difficult. If redeveloped, this lot should be a 4-story building. A general (mixed-use) building with ground floor retail and upper story residential or even a commercial building of non 'Class-A' office space is possible, but the site might be most appropriate as an apartment due to the context of neighboring higher-density residential properties. A 10,500 s.f. floor plate fits within setbacks. This site is located within 1/2 mile of the future Union Square Station and should not have any residential minimum parking requirement because of its close proximity to transit.



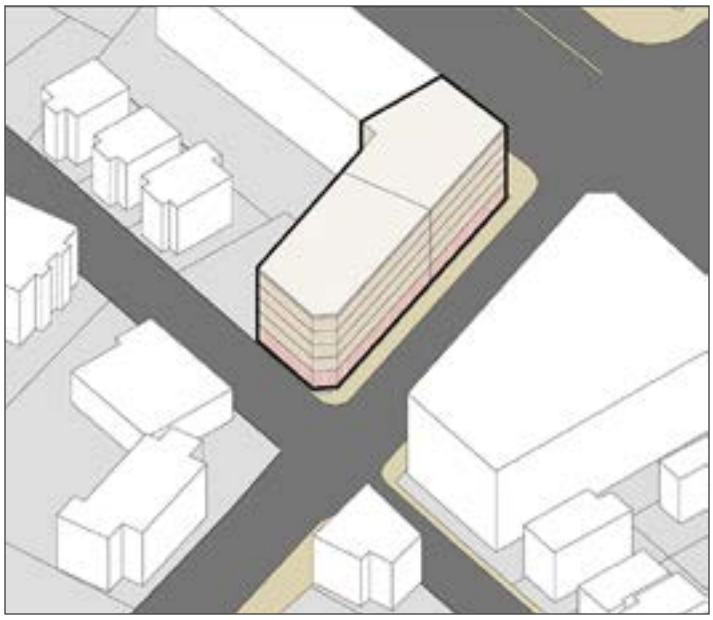


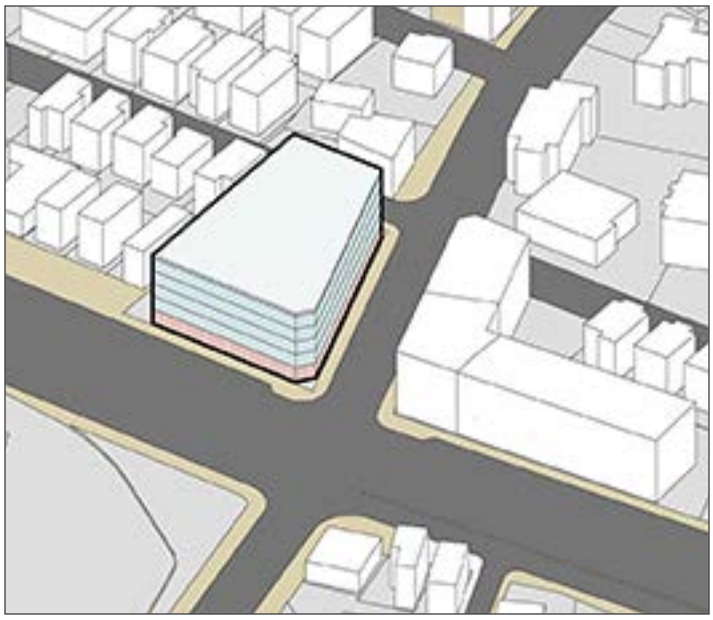
249-255 WASHINGTON ST

This site includes two lots fronting onto the public parking lot of Union Square Plaza. If redeveloped, this site should be a 4-story commercial building with ground-floor retail. A 10,685 s.f. floor plate building fits within setbacks. A minimum of two ground-floor tenants for retail space is ideal, but the site can accommodate a number of ground-floor spaces as evidenced by the existing building. A high level of ground-floor transparency should be included on the facades fronting onto Union Square Plaza. Non 'Class-A' office space can be accommodated on the upper floors. If provided, off-street parking must be located underground or within the building and accessed from an alley at the rear of the property. If any portion of the parking area currently owned by the Homer Square property at the rear was acquired as part of the redevelopment of this site, even more commercial space could be created.

352 McGRATH

New land area created from the reconstruction of McGrath Boulevard should be incorporated into this parcel to incentivize redevelopment. The site is slightly over 200 feet wide and might best be designed at two separate buildings that recreate the smaller context of neighboring properties. If redeveloped, the site should be a 5-story general (mixed-use) building with residential over retail. A 10,670 s.f. floor plate fits within setbacks with residential units over retail. A minimum of two ground-floor tenant spaces is ideal, with both oriented toward the future McGrath Boulevard. This site is located within 1/2 mile of two of the future transit stations of the Green Line and should not have any minimum parking requirement because of its close proximity to transit.





163 WASHINGTON ST & 12 BOSTON AVE

New land area created from the reconstruction of McGrath Boulevard should be incorporated into this parcel to incentivize redevelopment. If redeveloped, this site should be a 5-story general (mixed-use) building with residential over retail. At just about 200 feet wide, the site might best be designed as two separate buildings that recreate the smaller context of neighboring properties. An 11,650 s.f. floor plate fits within setbacks with residential over retail uses. A minimum of two ground-floor tenant spaces is ideal, with both oriented toward Washington Street. A high level of ground-floor transparency should be included on the Washington Street facades. This site is located within 1/2 mile of two of the future transit stations of the Green Line and should not have any minimum parking requirement because of its close proximity to transit.

182 WASHINGTON ST

New land area created from the reconstruction of McGrath Boulevard should be incorporated into this parcel to incentivize redevelopment. If redeveloped, the site should be a 5-story commercial building or 5-story general (mixed-use) building with residential over retail. A 22,500 s.f. floor plate fits within setbacks. The building should include a significant architectural element at the McGrath and Washington Street corner to signify arrival to the Union Square neighborhood. A minimum of two ground-floor tenant spaces is ideal, with one space oriented toward Washington Street and another corner space with frontage on both streets. A high level of ground floor transparency should be included on the McGrath and Washington Street facades. If provided, off-street parking must be located underground or within the building and accessed from an alley at the rear of the property. This site is located within 1/2 mile of two of the future transit stations of the Green Line and should not have any minimum parking requirement because of its close proximity to transit.

Redeveloping Greyfields

Retrofitting Existing Parking Lots into a New Square

The SomerVision Map establishes a plan for growth in certain areas of the city and conservation of existing neighborhoods in others. The map illustrates a shared vision to "conserve Somerville's great residential neighborhoods, enhance our funky squares and commercial corridors, and transform opportunity areas on the eastern and southern edges of Somerville."

The cluster of lots around the intersection of Somerville Avenue and McGrath Highway is identified in SomerVision and the Union Square Revitalization plan as an Area to Transform. The site is currently a Target store (with a Starbucks and CVS Pharmacy inside), Fallas department store, Advanced Auto Parts, and, across the street, a Burger King and used car lot. The term greyfield is commonly used in planning to reference underutilized real estate assets or land, but we use it here to call attention to the 'sea' of parking that accompanies these sites. This greyfield area is about 10 acres in total, with about 41% of this area is dedicated to parking. Even at peak times these parking lots have ample parking space available.

Target is the largest landholder in this area, and has the largest parking lot. Advanced Auto Parts site on the parking lots western edge. This site was originally built as a Stop and Shop, but the grocery store relocated to East Somerville on the former Somerville Lumber site. Target leased the store from Stop and Shop after it became available and acquired the property in 2007. On the north side of Somerville Avenue, across from Target, are two lots under separate ownership. John's Auto Sales is a used car lot. The larger site is currently a Burger King - with 39 parking spaces! The building only takes up 11.5% of the land area available. The types of uses on these lots and the nature of their current auto-centric design provides potential for redevelopment.

Target is in the business of building mixed-use urban stores when the neighborhood conditions support that type of design. One was just opened in the Fenway neighborhood of Boston. With the commitment by MassDOT to redesign McGrath Highway as an urban boulevard, this area could provide the opportunity for redeveloped at the scale of a whole new square.


TARGET


BURGER KING
DRIVE THRU
ONE WAY
TRY OUT NEW ANGRIEST WHOPPER


Advance Auto Parts

Laying Out New Streets

Establishing a Walkable Block Structure

The Greyfield Redevelopment Area doesn't have much of an existing street grid. From the main streets of Somerville Avenue and Medford Streets, motorists enter the parking lots dotted with cart corrals and landscaping islands.

MassDOT's interim improvements on McGrath Highway are close to completion. In April 2016, MassDOT opened the 'punch through' to allow Somerville Avenue and Medford Street users to access the northbound direction of McGrath prior to Washington Street.

PROPOSED NETWORK

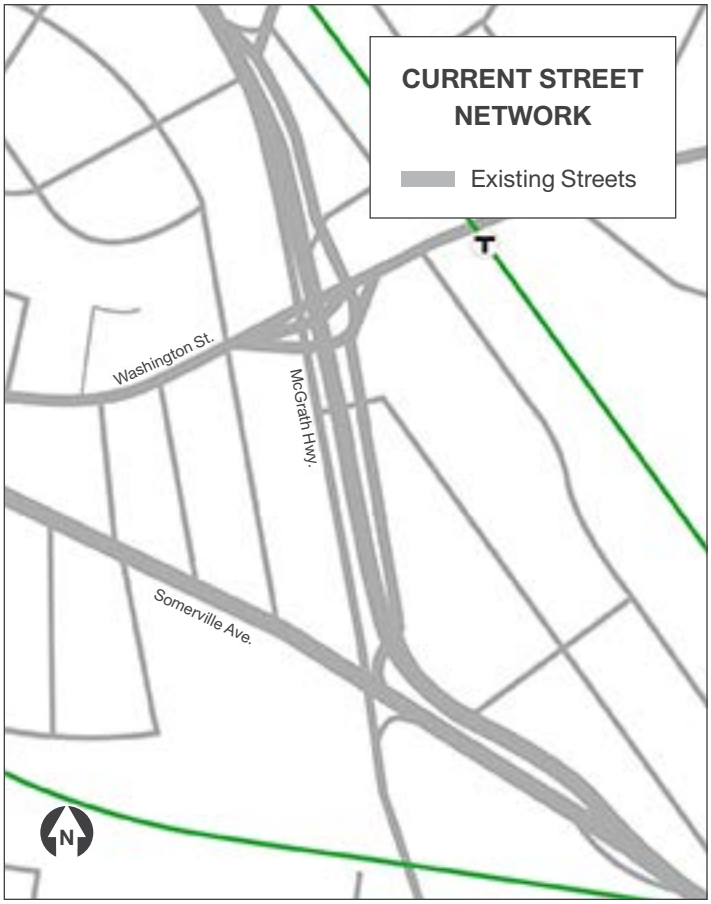
It's silly (but not unheard of) to name a place Milk Square without a square. Fortunately, a new street network can improve upon an existing intersection, create open space, and a square for this neighborhood.

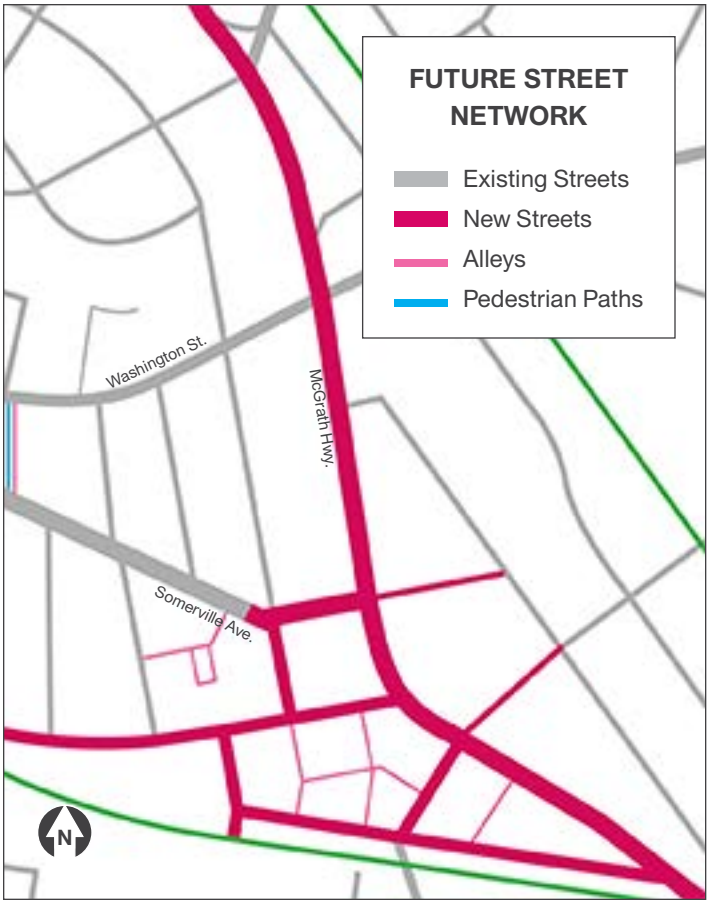
To connect across McGrath, a boulevard including wider sidewalks and a separated bikeway is proposed instead of the elevated highway. Connections can be made at new alignments, Medford to Poplar Streets, and at the termination of Somerville Avenue to a smaller neighborhood street. Charlestown Street now connects Allen, Linden, and Merriam Streets to McGrath Boulevard. Charlestown Street will be enjoyable for pedestrians because it will front two public spaces and development with first-floor retail is likely.

New to Somerville, alleys are an integral piece of the proposed street network in the Greyfield Redevelopment Area. They provide a multitude of benefits like providing vehicular access to parking and loading from behind development, which provides a better pedestrian and cycling experience on the main street.

In Milk Square, the opportunity is to build a new street network where parking lots currently exist. Providing a street network that prioritizes connectivity and makes urban blocks will allow development that prioritizes the people in the neighborhood.

BELOW: The existing context of Merriam Street. Apartment buildings face the back of Advanced Auto Parts and Target's loading dock.

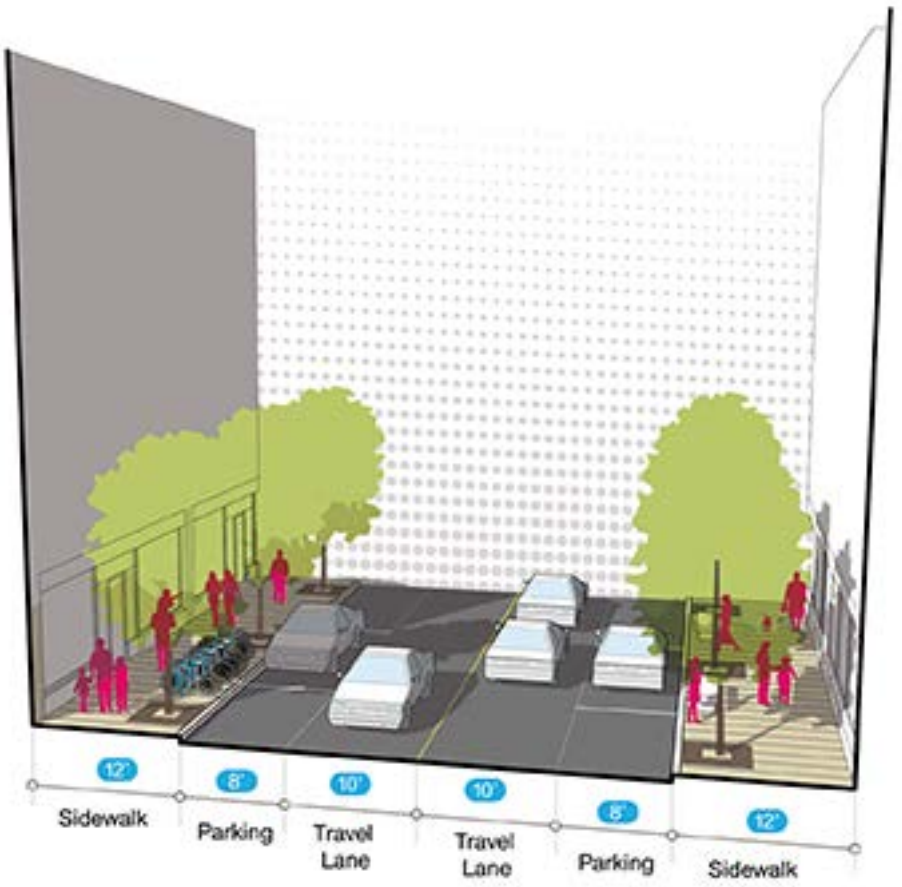




ABOVE: Existing and proposed street network in Union Square.

CONVENTIONAL NEIGHBORHOOD STREET

A conventional neighborhood street will function as a typical main street, with two-way traffic, raised sidewalks with curbs and marked parking lanes. Wide sidewalks are still provided to support pedestrian activity on the street. The friction created by narrow vehicular travel lanes and parking movements will create a condition where cars move slowly enough that bicycles can safely share the lane. It is envisioned that this conventional street design will also support the delivery traffic that will service the neighborhood.



Grounding McGrath Highway

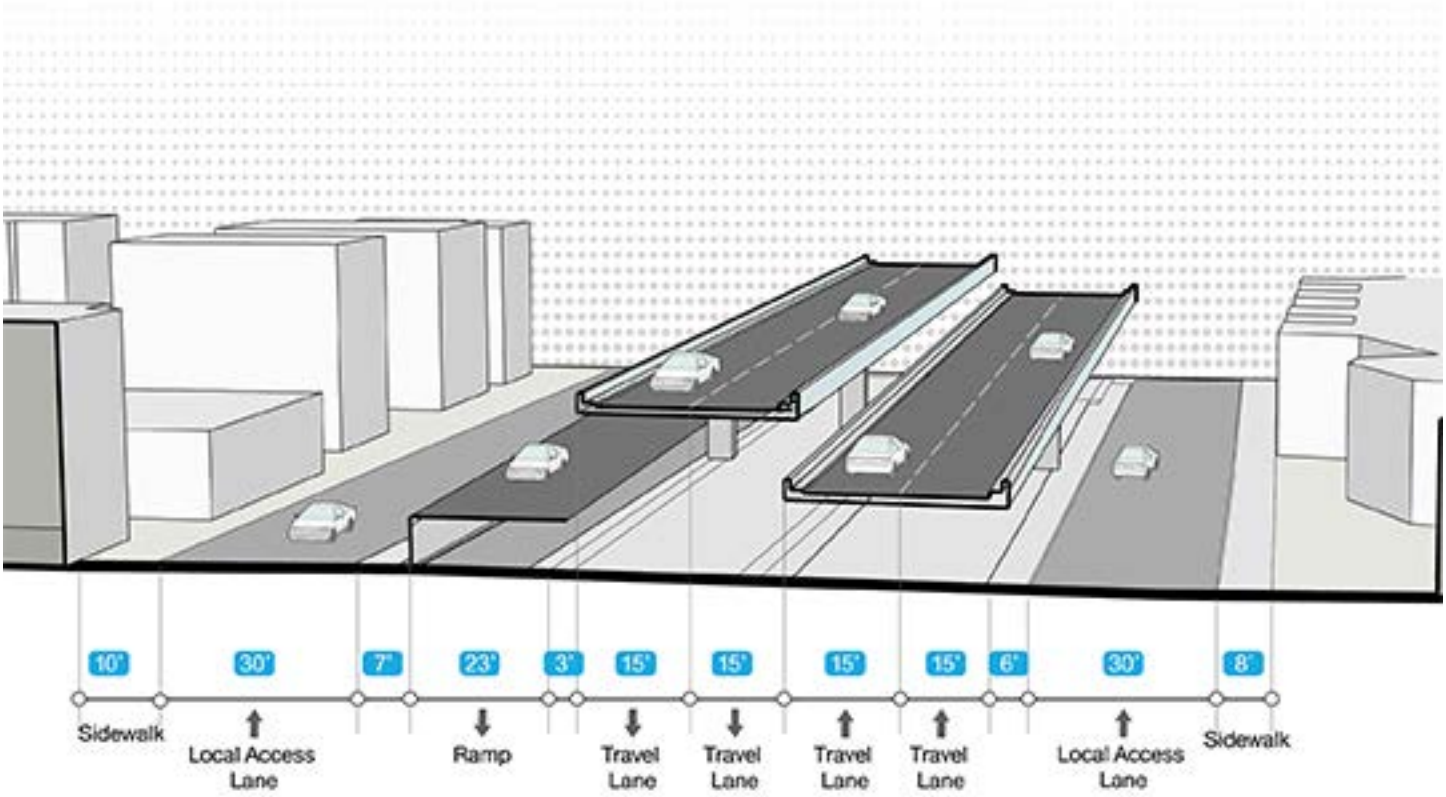
Reconnecting Neighborhoods with a Boulevard

State Route 28, known as McGrath Highway in Somerville and O'Brien Highway in Cambridge, is a way for suburbanites to get to employment centers in Cambridge and Boston. The elevated section between Washington Street and Somerville Avenue, known as the McCarthy Overpass, was constructed in the mid 1950's. It creates a towering wall that separates Union Square from East Somerville and the Brickbottom neighborhood. Until recently, Washington Street was the only connecting point under the overpass for pedestrians. The interim improvements for McGrath Highway created a signalized pedestrian crossing at Somerville Avenue as well.

Community members have been advocating for years to have the elevated portion of McGrath taken down. In May 2013, the "Grounding McGrath" study team, after a two-year community process, shared its recommendations with the public, calling for removal of the elevated McCarthy Overpass and replacement with an at-grade roadway that better serves all users.

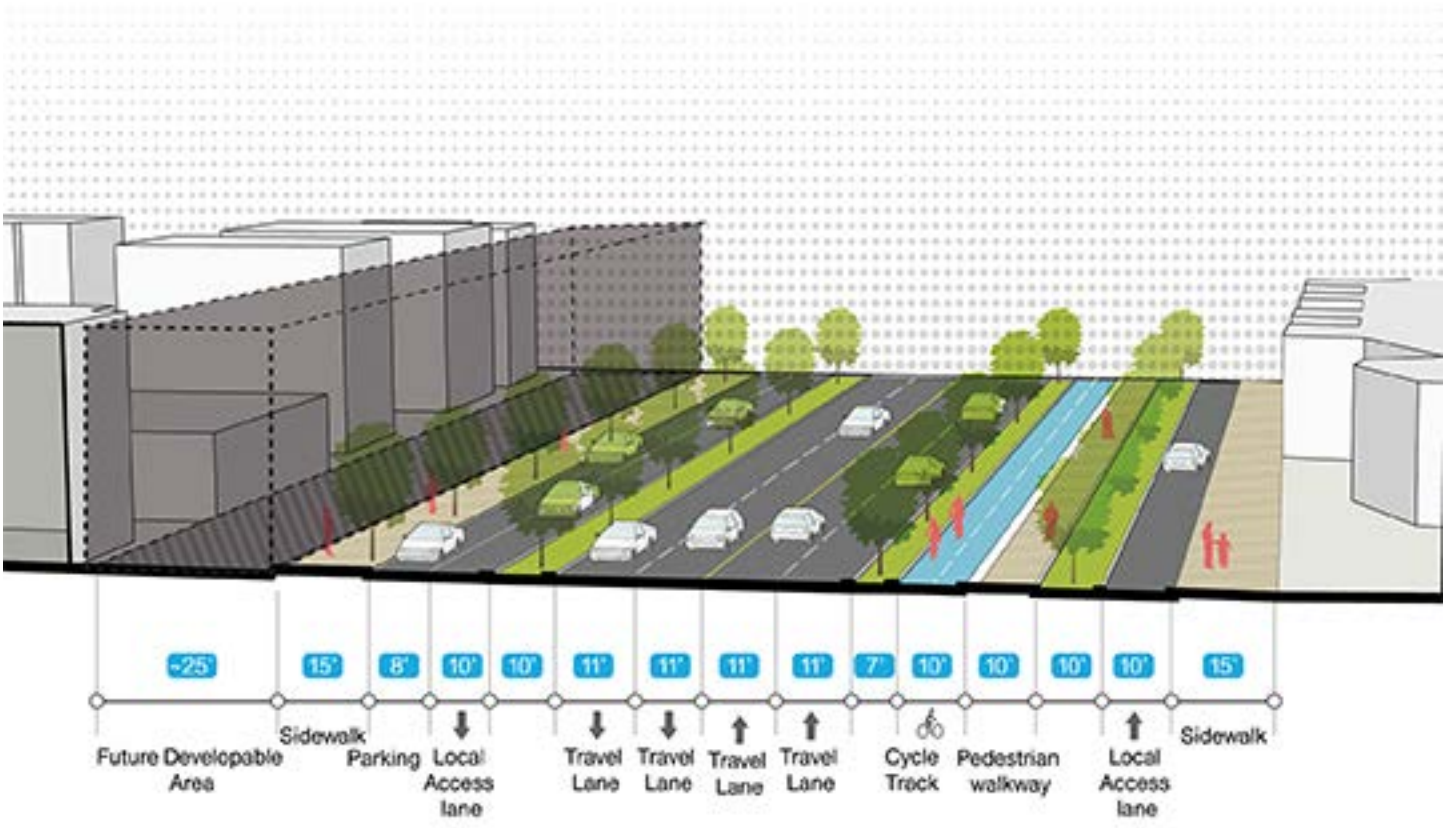
The concept demonstrates how the plans in the Grounding McGrath study can be taken further. The McGrath right-of-way is so wide that there is opportunity for two-way travel lanes for through traffic, carriageways for local travel, a mixed-use path, a separated bicycle lane, and sidewalks. The design is modeled after a boulevard so there are ample opportunities for canopy trees and under plantings.

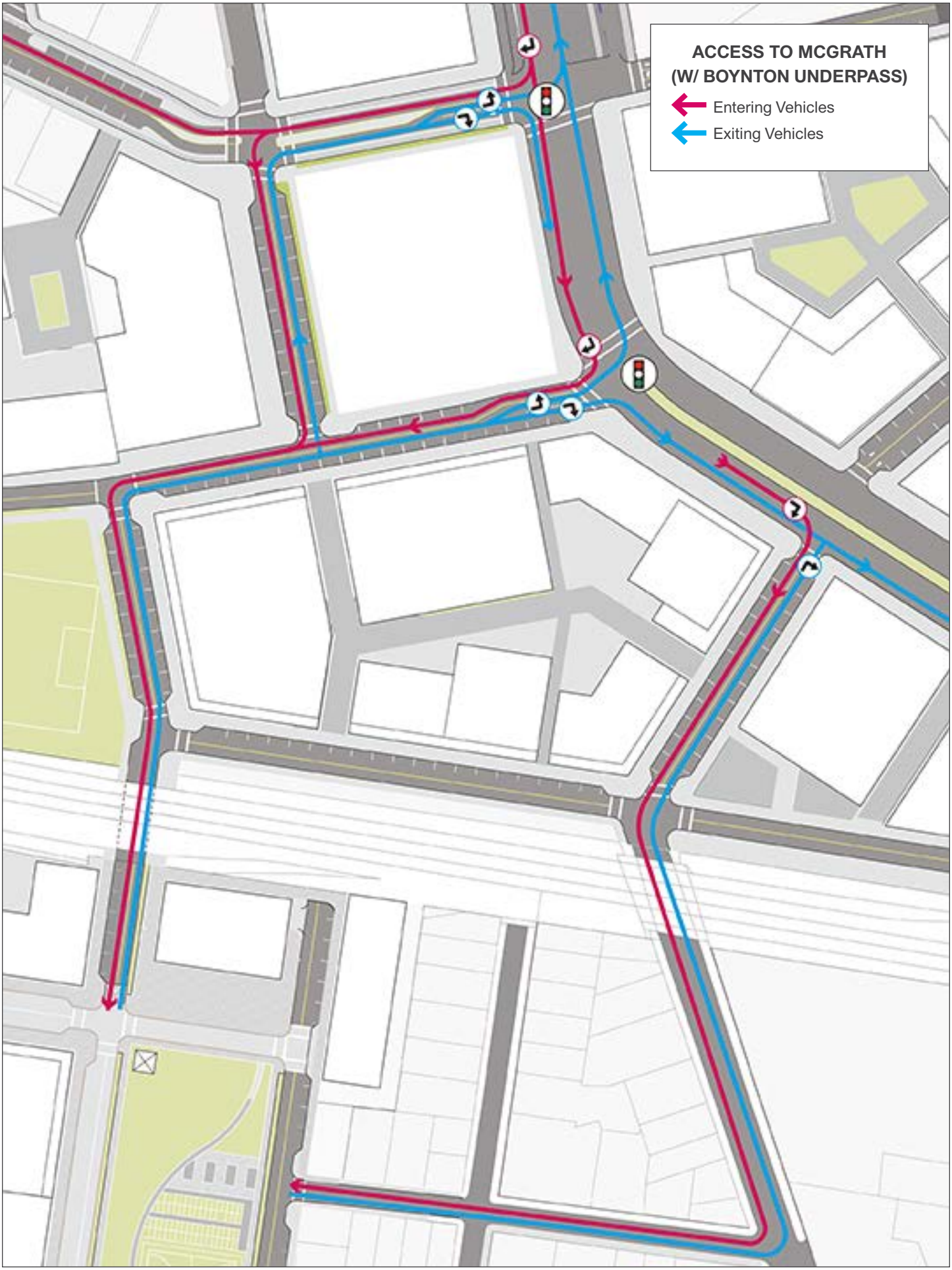
Even with maximizing the opportunities for all modes there is still more right-of-way available. These are opportunity areas for a range of activities from development to civic space. As the City works with MassDOT on grounding McGrath Highway, a corridor plan determining a more specific community vision outside of the right-of-way along this 1.5 miles section is needed. These spaces are the innovative ways that all of the SomerVision targets will be met.

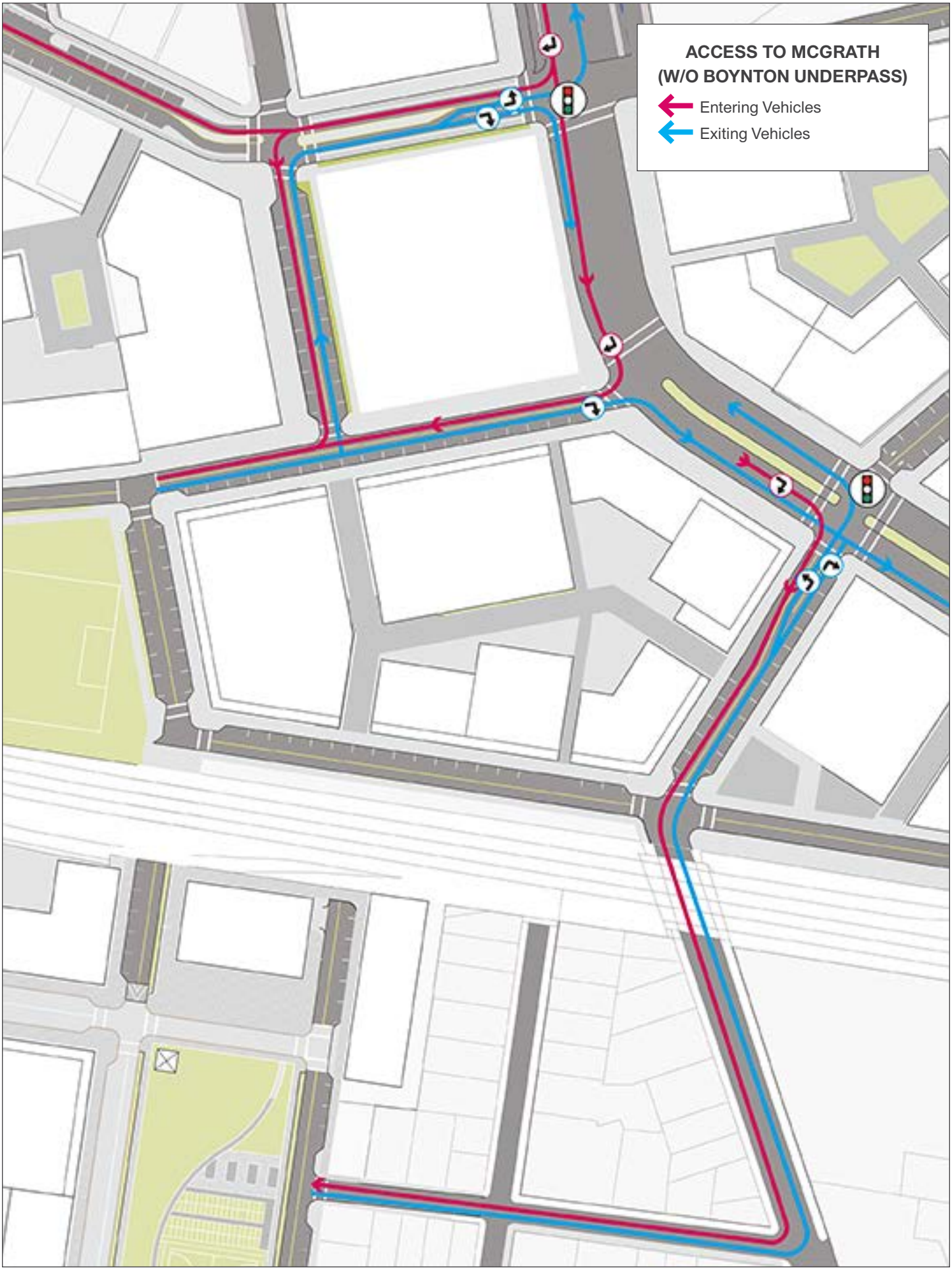


ABOVE: MassDOT, the City, and the community agree that McGrath Overpass needs be de-elevated. Existing conditions only accommodate cars.

BELOW: The right-of-way is so wide there is ample opportunity for all modes of transit after it is de-elevated.




ACCESS TO MCGRATH
(W/ BOYNTON UNDERPASS)
Entering Vehicles
Exiting Vehicles


ACCESS TO MCGRATH
(W/O BOYNTON UNDERPASS)
Entering Vehicles
Exiting Vehicles

Creating New Public Space

Where There's Currently None

There is no public space in the Greyfield Redevelopment Area but it also doesn't have any residents. However, if you look beyond the immediate boundary, the streets of Allen, Linden, Merriam, Rossmore, and Mansfield Streets have very little access to public space. Allen Street Community Garden is the only public space in the area. In 2016, the Community Preservation Committee funded the design of a playground addition to the community garden.

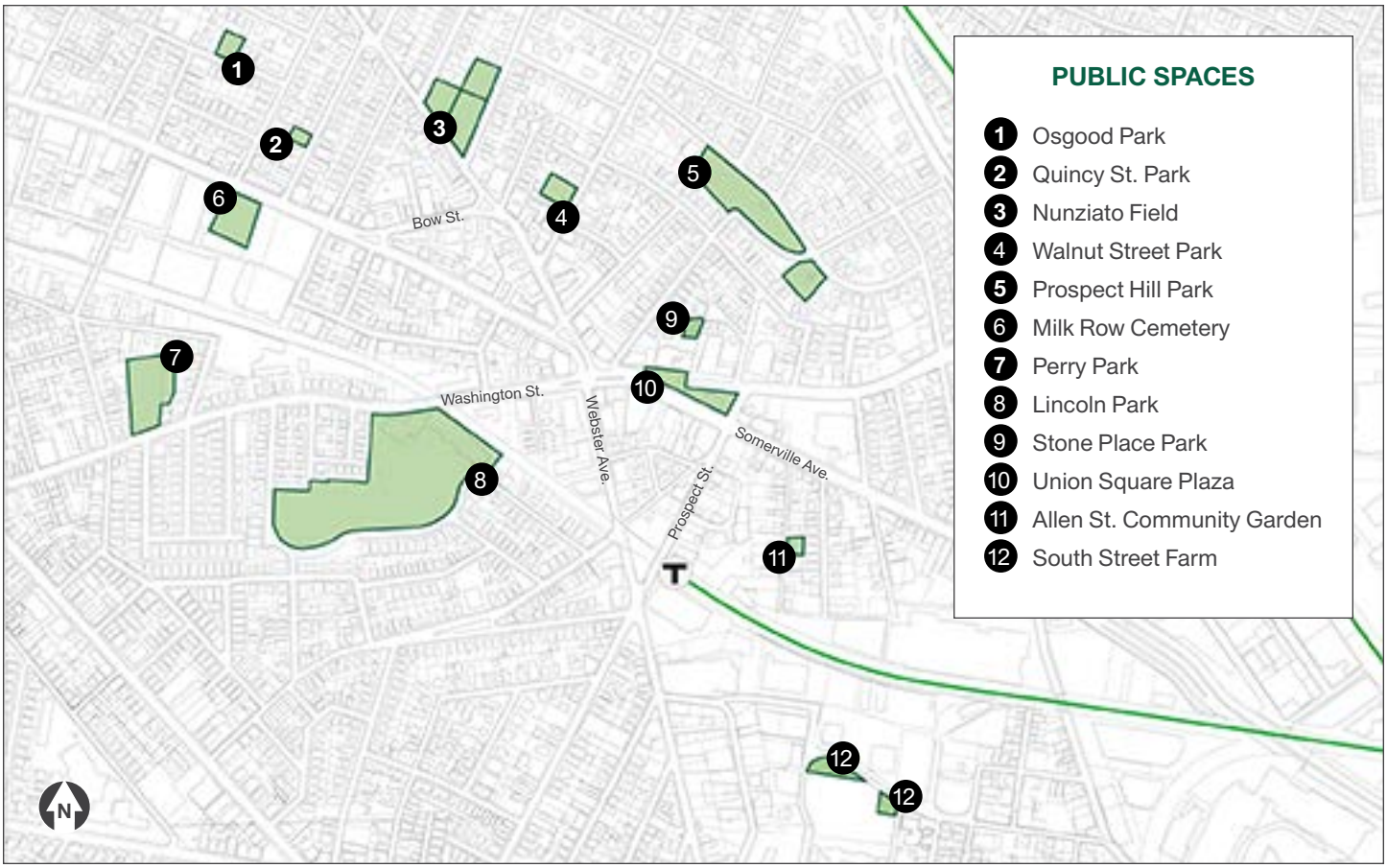
MORE PUBLIC SPACE NEEDED

Milk Square's immediate neighborhood and surrounding neighborhood streets deserve access to public space. The expectation is for public space amenities to be added to the area for the use of existing residents, new residents, and workers. To meet the goals of SomerVision, the Greyfield Redevelopment area needs 2-3 acres of public space (see page 47).

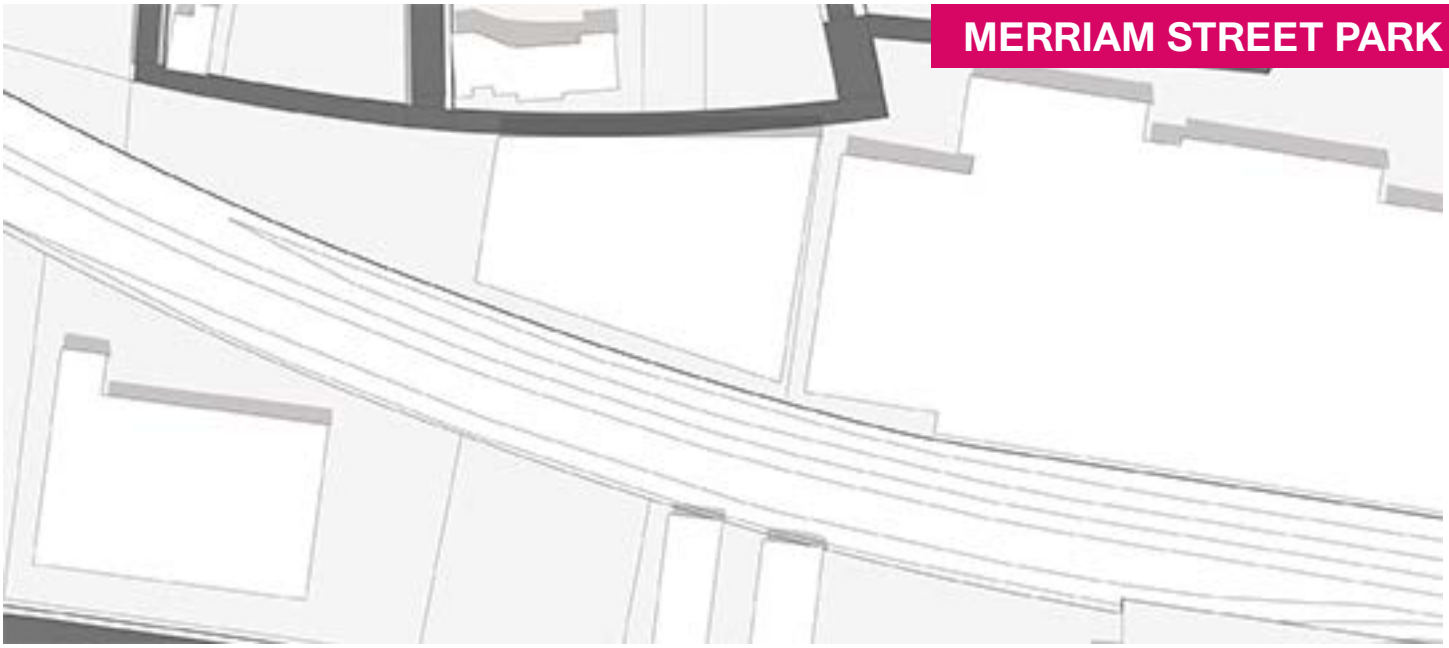
There are two significant public spaces proposed for the neighborhood. The first is Merriam Street Park. The MBTA recently purchased the Walnut Street Center for a staging area during construction of the Green Line Extension. After construction is complete, they will only need a small area for storage and maintenance vehicles. This park will serve as a community resource and will be large enough for playing fields.

The second space is Milk Square. The design teamed named it so to honor the original name of Somerville Avenue, Milk Street. The Square will serve civic and social purposes including hardscapes for people to gather and lawns for lounging. There's also an architectural element to the park that will serve as a terminating vista down Somerville Avenut and also a landmark for people using McGrath Boulevard.

In additional to a small neighborhood playground, the area will have 3.93 acres of public space. These spaces will fill a variety of needs, including places for people of all ages to play and gather.



MERRIAM STREET PARK



ABOVE: The area as it existing today with Walnut Street Center and Target.

BELOW: Merriam Street Park sits on the site of Walnut Street Center which the MBTA just acquired for storage and site offices during the GLX and a portion of the Target site.

Space should be set aside after the construction of the Green Line Extension and redevelopment of the site including Target to create a community park. The park is large enough for a variety of playing fields.

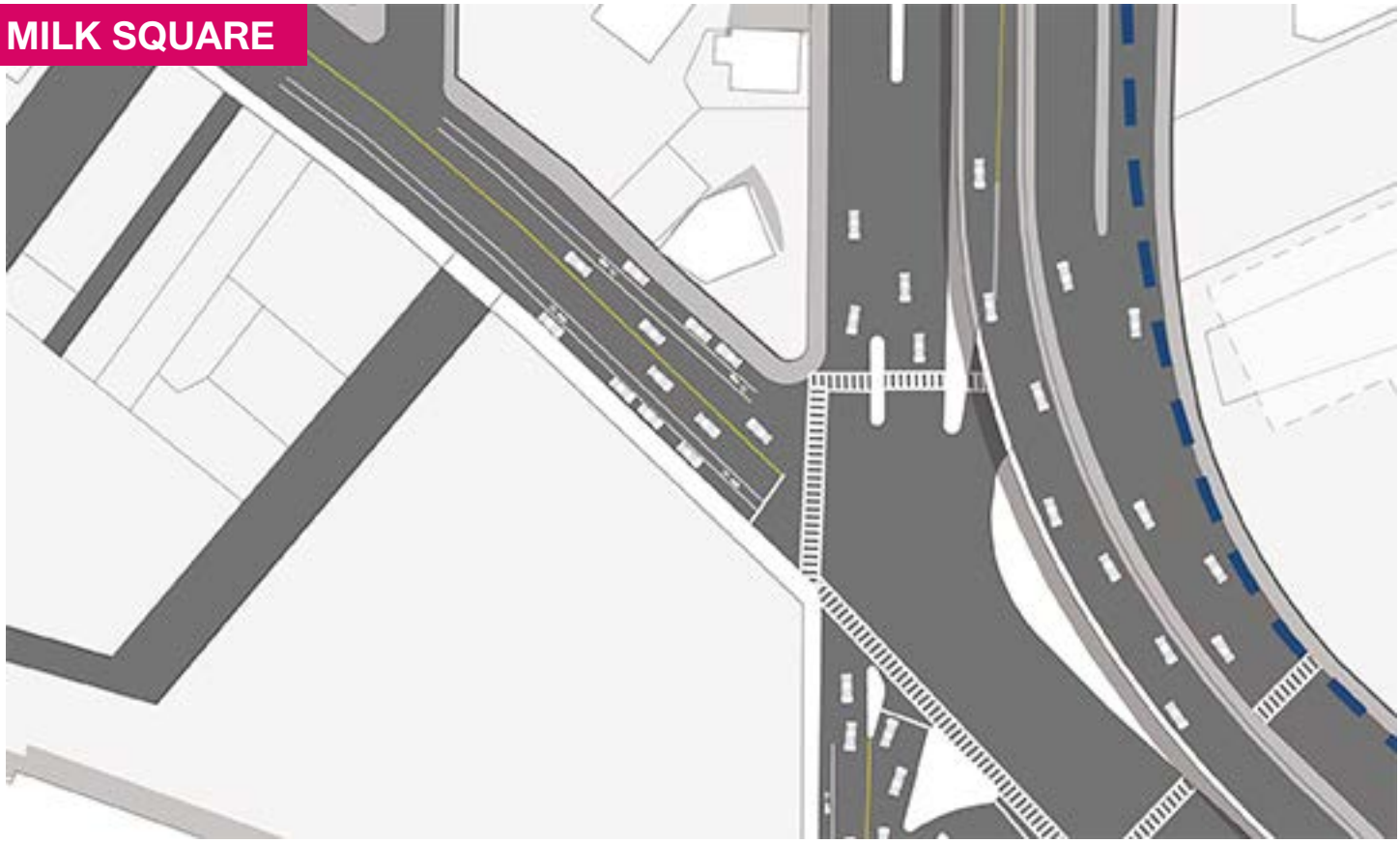
1. Playing fields are shown for scale. The exact programming of the site will be determined through a community process and an analysis of the open space needs in the City.

2. Earle Street underpass connecting the new street grids in Boynton Yards and Milk Square.

3. New sidewalks on the south side of Charlestown Street where there are currently none.

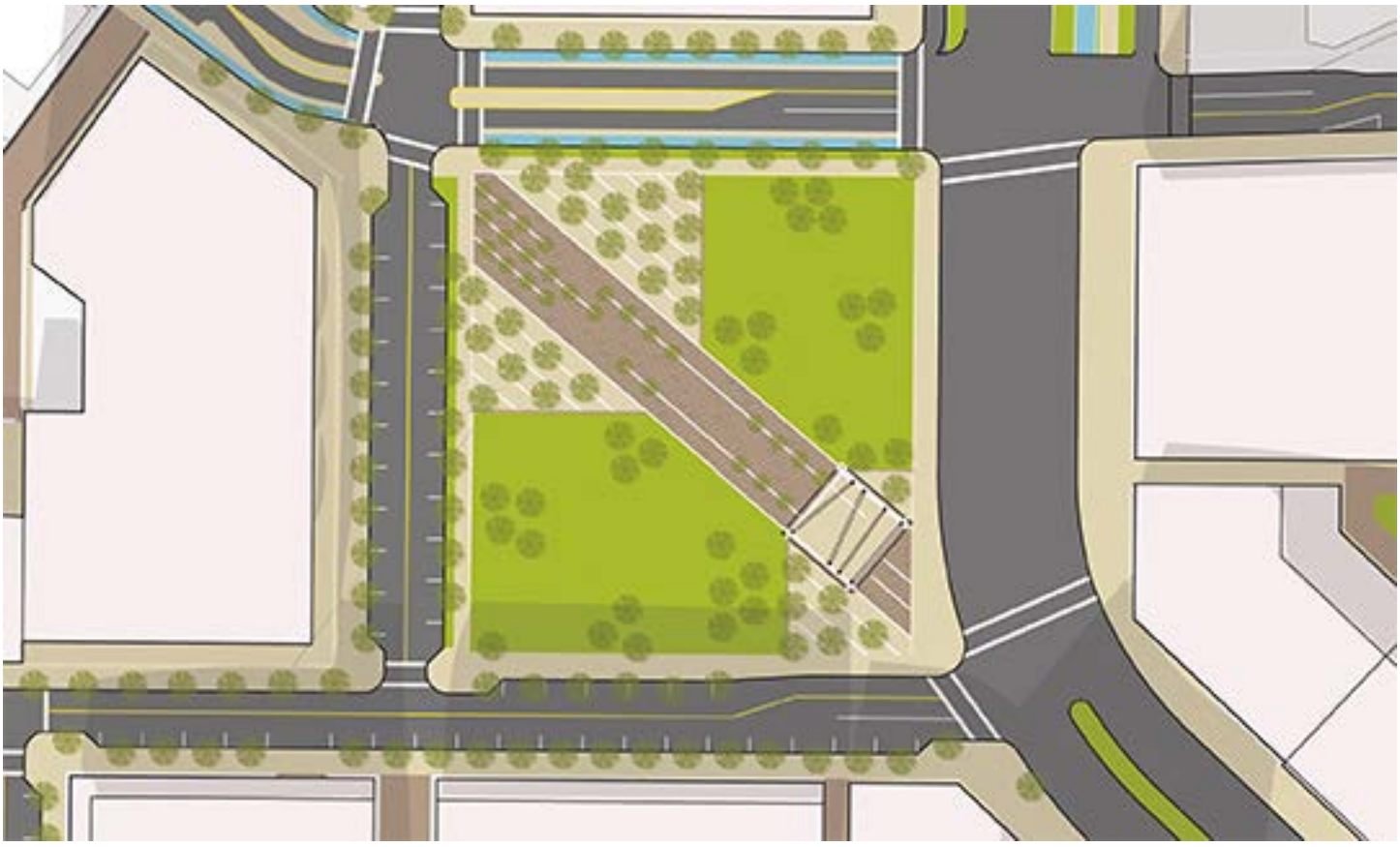
4. Trees and landscaping can buffer users of the park from the railroad tracks.

MILK SQUARE



ABOVE: The intersection of Somerville Avenue, Medford Street, and McGrath Highway.

BELOW: Somerville Avenue and Medford Street are realigned to connect to McGrath Boulevard at right angles. The space remaining is dedicate as a new square in Somerville.



The design of Milk Square was based off of other successful squares around the country including Pioneer Square in Portland, OR known as Portland's living room and Tompkins Square Park in New York City.

TOP: People gather at the Occupy Portland protest.

LEFT: The Moonpenny Opera in Tompkins Square Park.

RIGHT: People gather around the main plaza in Tompkins Square Park after dark in the summertime.

Building Out the Greyfield

Contributing to SomerVision's Development Goals

SomerVision includes a set of aspirational targets for job creation, housing development, and open space improvement, along with guidance on how people should travel and where development should occur within the city (see page 34 for more information). By the end of 2016, the City expects to have added 5,000 new jobs, almost 900 new dwelling units, and about 12.8 acres of new public space, with an additional 19.5 acres in the pipeline, as a result of new development.

In 2015, the Mayor's Office of Strategic Planning and Community Development (OSPCD) hired RCLCO, a national real estate advisory firm, to help identify properties in the Union Square plan area that met specific economic criteria that makes them probable for development or redevelopment. Using the lots identified by RCLCO, current zoning would permit development of an estimated 7 million square feet and up to 3,600 dwelling units. If those dwelling units are converted to floor space and subtracted from the potential buildout, this new development could result in about 11,350 new jobs. These numbers represent only a 3 to 1 ratio of jobs to housing. SomerVision calls for at least a 5 to 1 relationship to establish a closer balance between the number of jobs within the city and the size of Somerville's workforce.

Redevelopment efforts in Union Square and Boynton Yards are focused on positioning the area to become a new Urban Employment Center station area (see page 44). To determine a proper buildout that would also meet the objectives of SomerVision, OSPCD used development criteria provided by The Center for Transit-Oriented Development (CTOD), a non-profit funded by the U.S. Government that promotes best practices in transit-oriented development, to guide planning efforts. Chapter 2 contains a full description of the criteria recommended by COTD, but two metrics that align closely with SomerVision are a 60%/40% use mix ratio (commercial/residential) and a jobs-to-housing ratio of 6 to 1.

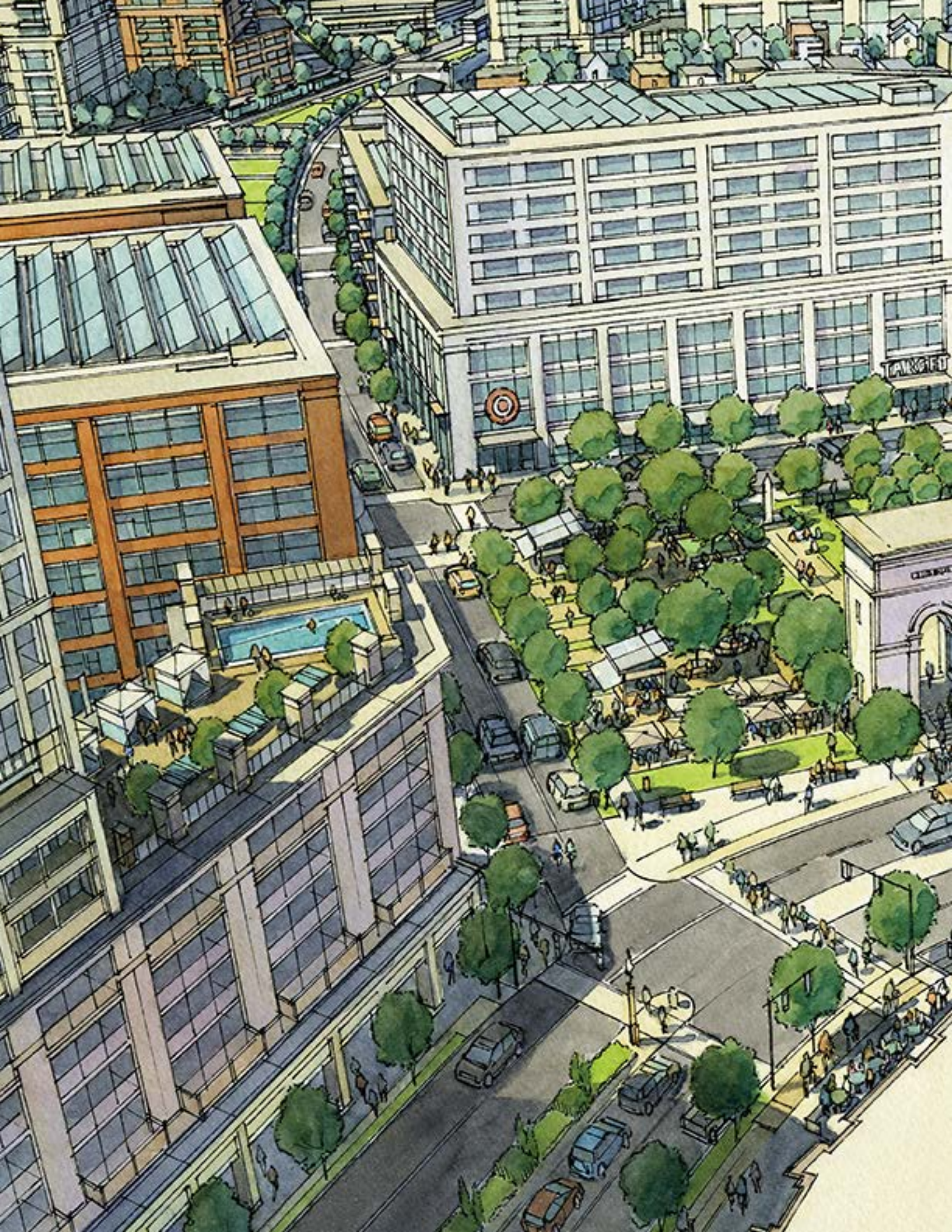
Each redevelopment site in the Union Square plan area

is an opportunity to achieve a portion of SomerVision's development goals. Development was first estimated for the seven D Parcels (starting on page 178) followed by the scattered sites (starting on page 198) that were selected with the help of RCLCO's analysis. Many of the sites have limited opportunities for commercial development because of a variety of sight constraints. As a result, these two areas combined are slightly under-performing if the use mix and jobs-to-housing ratios for the full plan area were used to check their performance. This is counterbalanced through redevelopment of the greyfield properties (around Target) and Boynton Yards.

Estimating development for the greyfields area was done using the six building types identified in Chapter 3. Creating hypothetical parcels for commercial or lab buildings and ensuring a there was a site that can accommodate the relocation of Target into a new multi-story space were prioritized. Available sites are somewhat determined by the design of the street network and allocation of new public space in the area. For example, part of the Target property was included with 35 Charlestown Street to create a larger park that can host an athletic field. The amount of commercial floor space created was used as a control to determine how much residential was appropriate, by making sure to never violate the use mix and jobs-to-housing ratios developed for the plan area as a whole. As a result, we only used the commercial building and podium tower building types. In total, redevelopment estimated for the greyfield area is 65% commercial and 7.59 jobs for each housing unit.

GREYFIELDS BUILD OUT ESTIMATE

Office Space	987,762 sf
Retail Space (max)	172,273 sf
Potential Jobs	4,295
Dwelling Units	566



DEVELOPMENT IN BOYNTON YARDS

TABLE OF CONTENTS

Boynton Yards Today

Stepping Out of its Industrial Roots

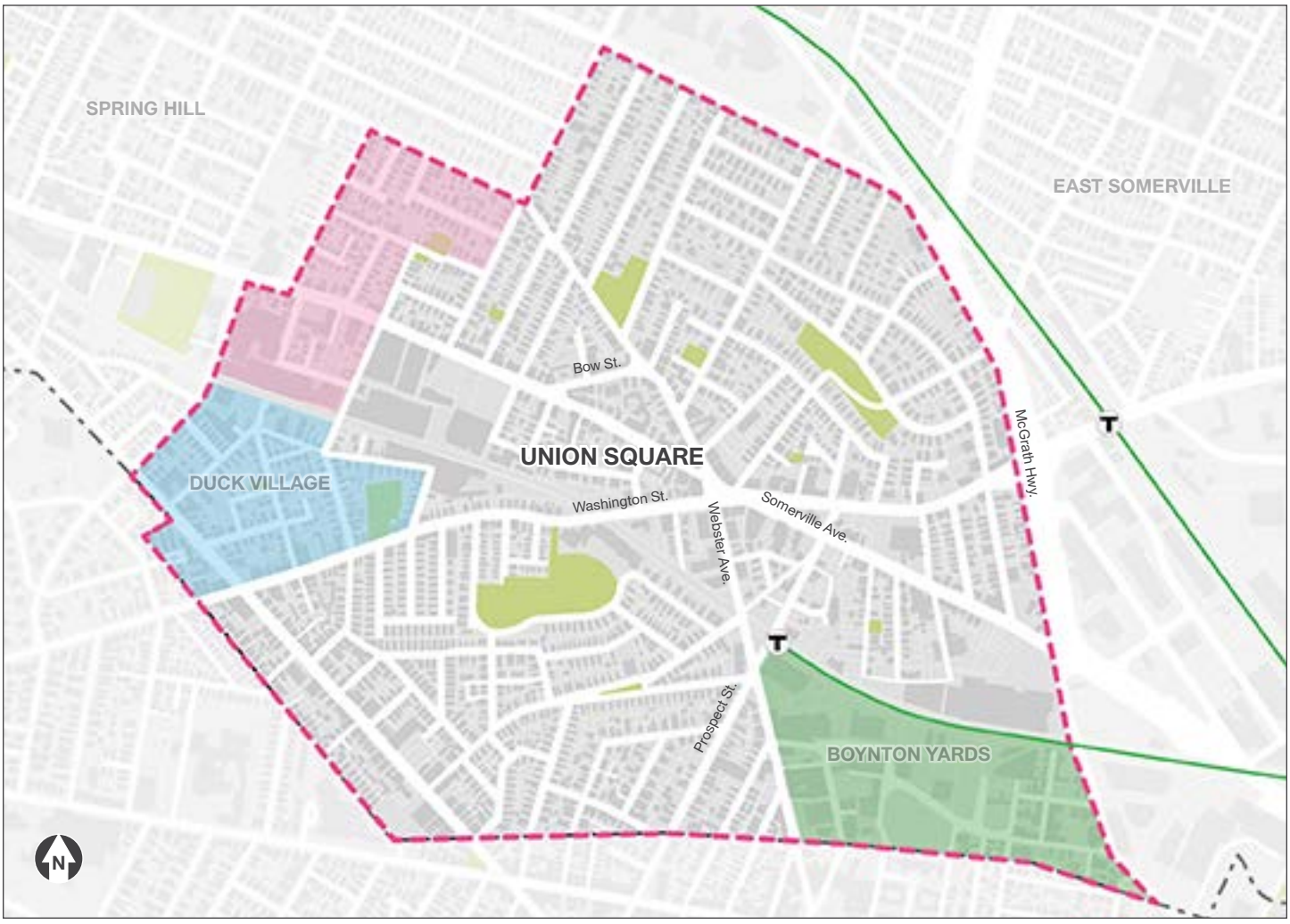
The Union Square plan area is 429 acres, or 16% of Somerville's land area. Within the plan area are four distinct areas: Union Square proper (the largest area), Boynton Yards, a portion of the Spring Hill neighborhood, and Duck Village. The neighborhoods shown below reflect a survey done by Bostonography, a website for visual representations of life and land in Greater Boston. Bostonography has invited visitors of the site to 'map your neighborhood.' When enough people fill out the map, it's a new data set that shows how we collectively see Somerville. This is the first-ever crowdsourced neighborhood map for Somerville.

The Spring Hill neighborhood is aptly named for the hill it sits upon. Duck Village has a more interesting story. During the Prohibition Era, the name Duck Village stuck because people would "duck" into the densely populated area to avoid arrest. The Boynton Yards district is an industrial area of Somerville that few residents of Somerville frequent.

BOYNTON YARDS

Boynton Yards is bounded by the train tracks to the north, Medford Street to the east, the Cambridge city line, and Prospect and Webster Streets. The sub-area is 34 acres. The majority of the land area is industrial including automotive uses, moving vehicle storage and dispatch, and commercial laundry services. The neighborhood is almost hidden by nature of access and edges. The street network doesn't really connect through Boynton Yards so people don't explore or even cut through. The east and west edges mask most of the industrial uses. Due to the grade leading up to the bridge over the railroad tracks, only pedestrians can see down into Beacon Sales.

La Hacienda restaurant has been a Somerville institution since 1939. In the last decade, a few notable businesses and developments have added interest in Boynton Yards. Taza Chocolate started in 2005. The store and factory at 561 Windsor Street is a great stop for locals and visitors.



Developer David Aposhian built Union Place condos on Webster and Norfolk Streets. Union Place's quality urban design and lush landscaping are often praised for their contrast from the surrounding industrial landscape. Recently, Somerville Brewing Company opened a brewery including tours and tastings on Ward Street.

The SomerVision map identified the vision for future development in Somerville: conserve, enhance, and transform areas. The entirety of Boynton Yards is in the transform area of SomerVision and is an opportunity area for redevelopment. The transform areas are anticipated to absorb 85% of new development in Somerville. Redevelopment Parcel D3 is the only redevelopment parcel in Boynton Yards.

There is an existing pocket neighborhood on the eastern edge of Boynton Yards. Boynton Yards East is a mix of one- to three-family structures, warehouse buildings, and parking lots. Similarly, the western edge has the 80 Webster condominium development and supporting parking garage.

FACING: Boynton Yards in context with the plan area.
BELOW: Boynton Yards neighborhood shown in green.


LA
HACIENDA
PIZZA
ITALIAN - AMERICAN
CUISINE


SOMERVILLE

FACING (L to R): South Street at the point of no return (a do not enter sign and two one-way signs pointing in the direction of arrival point). The La Hacienda Restaurant sign. The mural at South Street Farms. Horace Street homes with the MBTA sound barrier at the end of the street. Eighty Webster Street

ABOVE: Rooftop view of Boynton Yards taken from the roof of Millbrook Lofts, 561 Windsor (Taza Chocolate) is the tallest building in Boynton Yards

LEFT: Taza Chocolate storefront

BELOW: Front yard of Green City Growers

Challenges and Opportunities

The Realities of Building a New Neighborhood

Historically, Boynton Yards was a railyard along the Fitchburg rail right-of-way. The last major changes to the neighborhood were after the 1980's redevelopment plan. Its implementation assisted in construction of light industry buildings after environmental cleanup and the construction of South Street.

It wasn't until fairly recently that Boynton Yards was perceived of an opportunity area that could be redeveloped to meet community goals. The 2009 zoning that established the CCD and TOD districts followed by the SomerVision Map cemented Boynton Yards as a place that could fulfill goals for commercial development, housing, and open space.

The best way to describe the desired outcome of Boynton Yards is through typologies established by The Center for Transit Oriented Development (CTOD). The system provides a common language to compare station areas and helps governments establish development targets to ensure that investments made in transit are as efficient as possible by focusing growth around transit nodes. With the arrival of the Green Line Extension and both public and private investments in redevelopment, the eastern portions of Union Square and Boynton Yards are envisioned as an Urban Center focused primarily on employment.

CTOD defines Urban Centers as a station area with a dense mix of employment, residential, retail, and entertainment uses and destinations that attract residents from surrounding neighborhoods. Once Union Square station is built and light rail service begins, Union Square and Boynton Yards will include a full suite of transit options, like other Urban Centers around the country, and be positioned to attract employers seeking to benefit from locating their business within this type of station area.

NEIGHBORHOOD GOALS

Taking into consideration the Urban Center station area that's desired, the goals for redevelopment were established. The first is to create a new street network that provides access to development sites with appropriately sized blocks that fit commercial building types. Commercial development is not as flexible dimensionally as other types of development and needs to fulfill market need to make development viable (see page 105).

After a street network is established, the design of the streets is important to the public realm and eventual success of Boynton Yards. In Somerville, a Complete Street Ordinance ensures that new streets are safe and designed for all users giving priority to pedestrians, transit, cyclists, and then cars. Any design of Boynton Yards would follow this design priority.

SomerVision calls for 125 acres of open space development. A Boynton Square and relocation and possible expansion space for South Street Farm were part of the plan review draft. After feedback and further analysis, a goal of 2.59 acres of public space was set. This acreage meets the expectation of SomerVision.

The last goal for development in Boynton Yards was to create enough residential development to make a mixed-use 18-hour neighborhood. Thankfully, residential development is not as restricted dimensionally and can fit on lots undesirable for commercial development. Residential development activates streets at different times of day than commercial. Districts fail when they are one use. All commercial districts are desolate after hours. To create a mixed-use neighborhood, residential development is required.

The design goals for Boynton Yards are relatively simple: create a street network that gives access with blocks appropriately sized for commercial buildings, design complete streets, provide 2.59 acres of open space, and create enough residential development for a mixed-use neighborhood. However, the existing context of the neighborhood including land ownership patterns and infrastructure create hurdles to development in Boynton Yards.

NEIGHBORHOOD CHALLENGES

Development within an existing neighborhood is always more challenging than greenfield development. Boynton Yards is no exception to that rule. In particular, infrastructure and property ownership are two hurdles to development.

Many times, the successes and failures of neighborhood plans lie in the motivations and willingness of landowners to work with the City on implementation of the plan. To design a plan that lets owners redevelop without having to rely on other's actions is ideal. The draft of the Union Square Neighborhood Plan presented a plan for Boynton Yards that honored the existing ownership patterns.

One of the primary topics of feedback after the draft was a need for more open space, especially in Boynton Yards. This is when the goal of 2.5 acres of public space was added to the goals for Boynton Yards. The only way to achieve this new goal was to ignore existing property lines.

The other obstacle to development in Boynton Yards is that the only separated sewer is under the existing South Street. The sewer does not have enough capacity to support more than one development. This means that if the City were to permit construction of any building in Boynton Yards they would fill the remaining capacity. No further development

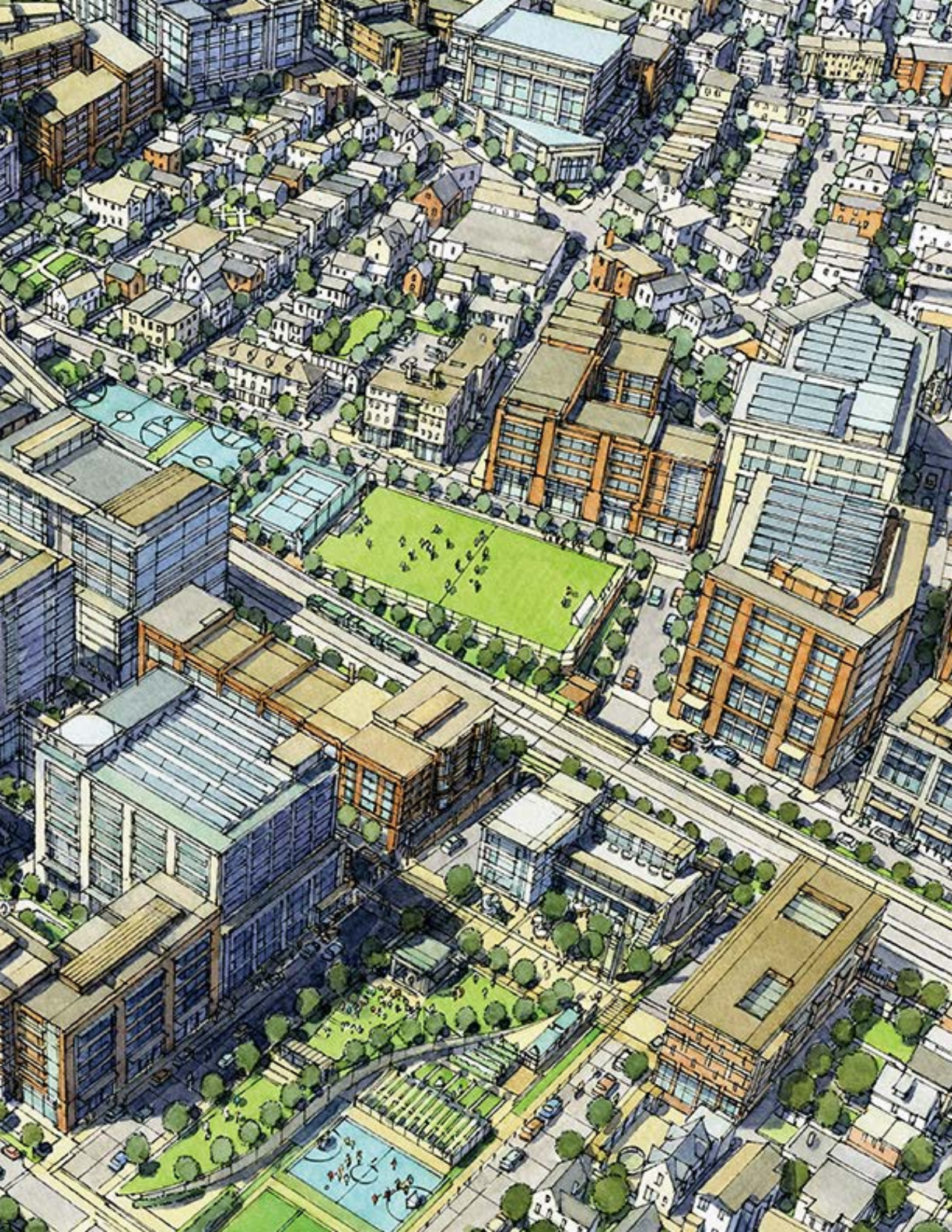
would be possible until more capacity was added to the system by adding another separated sewer. The City views an approval of one development without a solution for the infrastructure problem as unfair to adjacent landowners. Furthermore, the existing loction of South Street and its angle makes it undesirable in every redevelopment scheme.

IMPLEMENTATION

The infrastructure and ownership patterns paired with the design goals including a new street network make Boynton Yards a complex environment for development. Implementation strategies range from saddling the private market to solve each challenge and design goal to using a redevelopment authority to assemble land for a master developer. Each implementation solution has its own set of advantages and disadvantages. The first relies on the private market and does not take any city resources but could result in no development. The second allows orderly and coordinated development throughout the neighborhood and ensures that all of the neighborhood planning goals are met. However, it may be the likely solution to get Boynton Yards to redevelop.

The realistic solution is likely somewhere in between the two most extreme implementation strategies. The first step is convening property owners and development teams to explore realistic solutions for implementation coordinated with the City. To implement the goals will require teamwork of all players.

The development potential in Boynton Yards is too great to do nothing. Boynton Yards can help Somerville achieve the SomerVision goals of job creation, residential development, and open space.



Creating a New Street Network

Navigating Hurdles to a Walkable Block Structure

Boynton Yards barely has a street network. The existing streets are on the scale of the superblock and do not work together. South Street serves as the connector through Boynton Yards. It meanders around ownership patterns established by the 1980's redevelopment plan.

It is important to connect to the north/south routes that go over/under the railroad tracks, Webster Avenue to Prospect Street and Medford Street. However, when driving to the east, there is no way to connect because of one-way restrictions. A connection is possible when driving westward, as long as the motorist knows to turn right at Windsor Street and take the bend at Windsor Place.

DEVELOPMENT OBJECTIVES

To facilitate development in Boynton Yards, a street network needs to be created. Since virtually no network exists this opportunity to create one from scratch only comes once. To begin the process of designing a street network the existing conditions need to be evaluated. Through the community process, 561 Windsor Street was identified as a contributing building that should stay. In addition, the pocket neighborhood of Boynton Yards East was not considered for redevelopment. Boynton Yards East already has a functioning but limited street network. Ward and South Streets connect motorists to Medford Street. On the west side of Boynton Yards, the connection at Columbia Street is a good location because it works with the change in elevation at the bridge over the railroad tracks and aligns with Tremont Street. With existing assets identified, the constants were set.

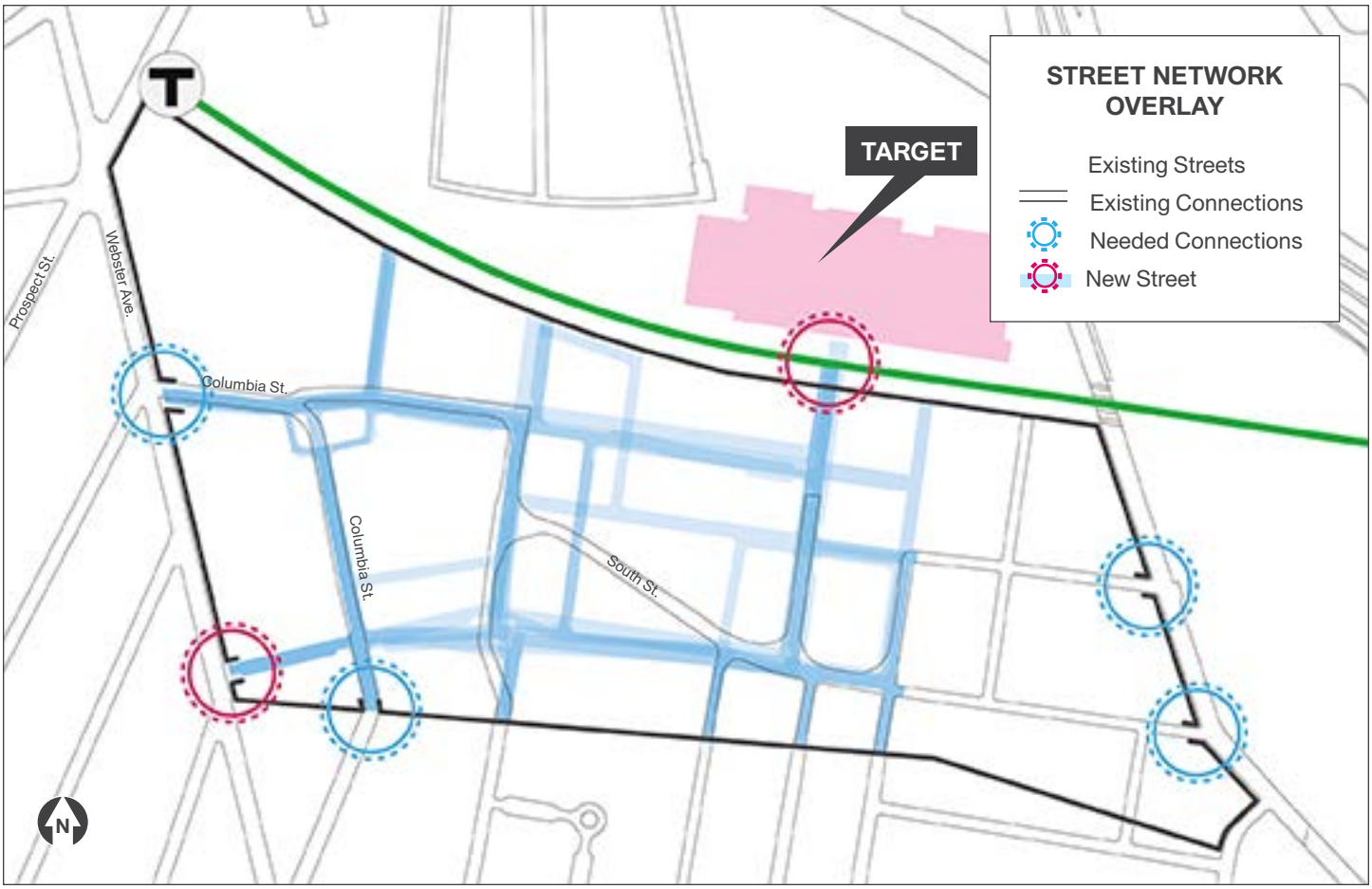
When designing a street network there are two main priorities. The first is that any new network in Boynton Yards connects to the larger system. For instance, an ideal street grid that doesn't have enough points of access is a failure. The other priority is that the street network creates access to lots of adequate size for mixed-use development.

Working with designers and engineers, the needs of the Boynton Yards street network were identified. Another access point from Webster Avenue was needed. The existing jog in South Street limited future options because it maintained an irregularly shaped lot that are too large for one development. The existing connections at Columbia Street and Ward Street did not connect but needed to to create a complete east-west network.

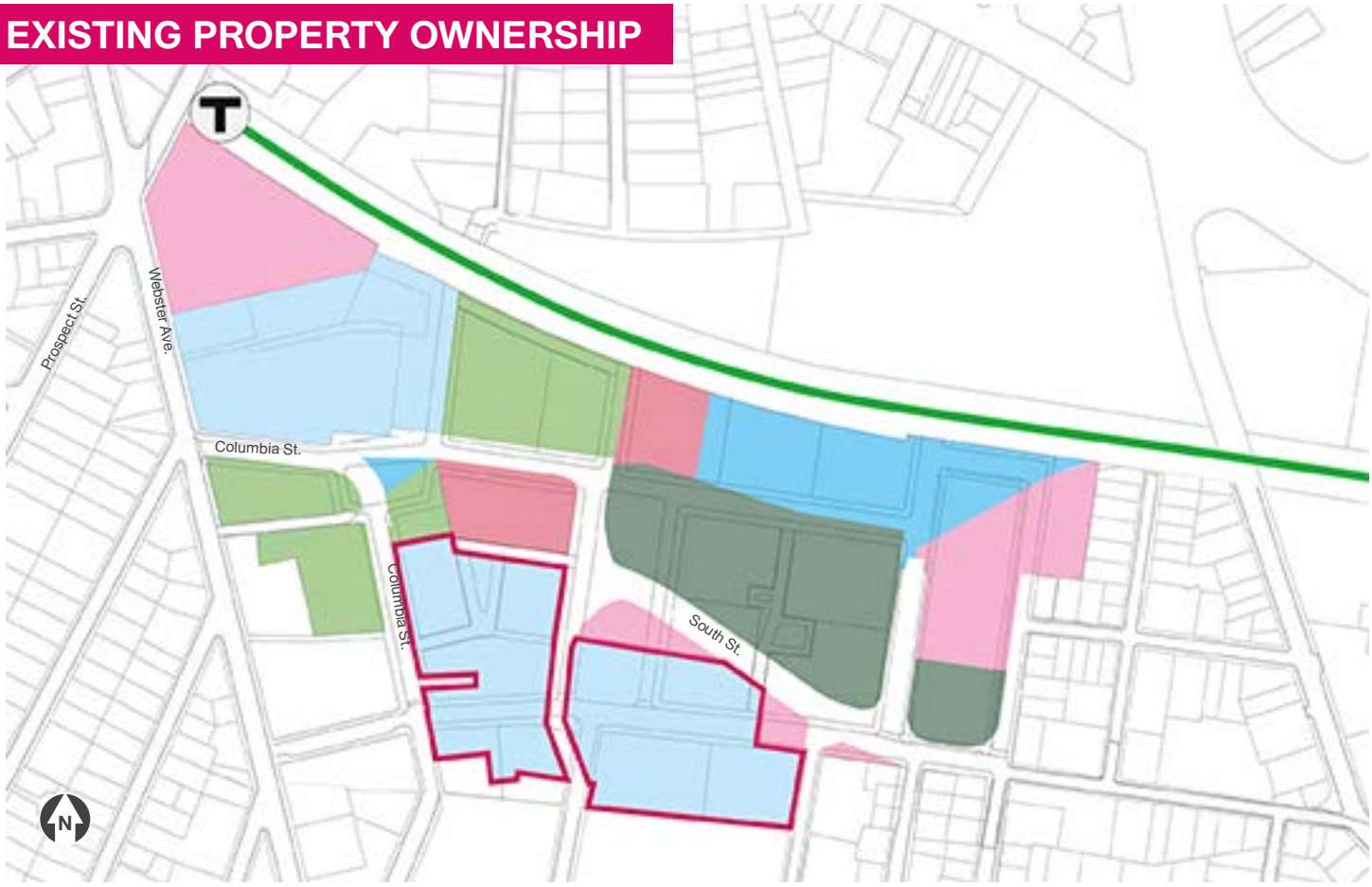
Lastly, a new north-south connection is ideal. Webster Avenue and Medford Streets are separated by approximately 1,800 feet. To provide a connected and walkable neighborhood, a new north-south connection is beneficial and possible when anticipating the development in both Boynton Yards and Milk Square (see below).

The graphic below is an overlay of four possible street network designs for Boynton Yards represented in this plan. Each design considers the constraints and needs described above. Existing connection points are circled in blue; new connections are circled in pink. The streets are represented with a transparent blue. As each option is stacked on top of one another, the dark blue represent where constraints have identified an ideal location for a street.

FACING: Boyton Yards as it exists today.
BELOW: An overlay plan showing four potential street networks for Boynton Yards. Dark blue represents likely locations due to design constraints.



EXISTING PROPERTY OWNERSHIP



Boynton Yards land ownership patterns can be described as interesting because the lots are large and irregularly shaped. These ownership patterns existed prior to and were then exasperated during the 1980's renewal plan.

In the neighborhood plan draft, the existing land ownership patterns were honored to the greatest extent possible. The beauty of the draft plan was that each landowner made almost an equal contribution to the plan. However, the draft plan only resulted in 1.8 acres of open space.

Stakeholders reiterated through their comments that meeting the open space goals of SomerVision should not be sacrificed. The goals for Boynton Yards were readjusted. The neighborhood needed a street network supportive of a commercial rich urban center and almost three acres of open space.

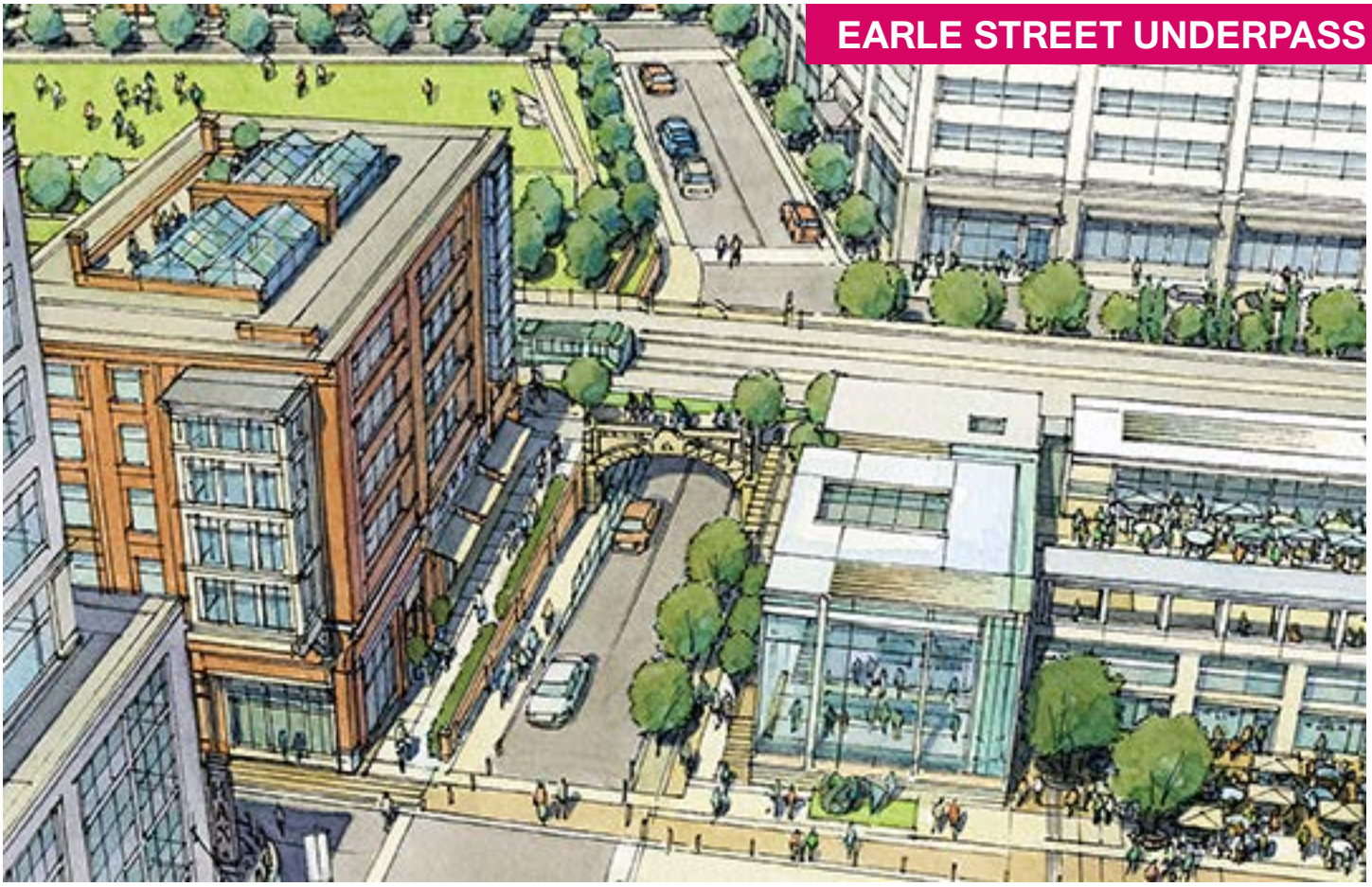
With the revised goals for Boynton Yards, the design team got back to the drawing board. They quickly discovered, to reach the open space goals of SomerVision, current land ownership patterns had to be ignored. By ignoring ownership patterns, the goals for Boynton Yards can be achieved through numerous designs. However, this makes the plan harder to implement.

The map above shows one design outcome for Boynton Yards that meets the open space goals with the existing ownership patterns colored underneath. Lots along the perimeter are relatively isolated from this problem. Lots within the center of Boynton Yards need major reconfigurations to implement any plan.

Take for instance the Nissenbaum ownership outined in pink (for more detail on ownership page 227). The South Street connection extends through their land and divides their ownership to the north and south sides of the street. The parcels that are the most northeast are contributing to a neighborhood square and development site. However, the development site is not large enough to be developed independently. The Nissenbaums would either need to partner or sell this piece of land to get development to happen.

The City is also a large landowner in Boynton Yards that will need to work with existing property owners. All of the streets in Boynton Yards are city-owned. The Somerville Redevelopment Authority also owns several small pieces of land adjacent to right-of-ways. The plans proposed for Boynton Yards that meet the open space are more difficult to achieve but not impossible.

EARLE STREET UNDERPASS



Boynton Yards is separated from Union Square by the Fitchburg rail right-of-way. The only connections for all modes are via Webster Avenue and Medford Street. The distance between the two existing connections is roughly 1,800 feet. Having another connection will increase connectivity between Union Square, in particular Milk Square, and Boynton Yards. More connections will also distribute all modes more efficiently to areas outside of the neighborhood. This will result in greater distribution of traffic during peak times.

The street network on both sides, from Milk Square to Boynton Yards must align to create a connection. In the street overlay study (see page 231), Earle Street was identified as an existing street most likely to remain and be extended to access development. Today, if Earle Street was extended to the railroad tracks, it would run into the back of the existing Target store. However, redevelopment envisioned in Milk Square has a street aligning with Earle Street on the edge of Merriam Street Park.

To create another connection, a bridge or underpass are the two options, both have existing context. Recently, the tracks at the Medford Street underpass were reworked as part of Phase I Green Line Extension work. The work allows for enough width to accommodate the commuter rail and Green Line Extension train cars. Webster Street rises until it meets the Prospect Street Bridge that goes over the railroad tracks.

After a visual survey, the railroad tracks are approximately 4’ above grade than adjacent land. That means that an underpass is more efficient than a bridge. In addition, due to accessibility requirements, the bridge would extend further down Earle Street than an underpass. The change of plane that separates development from the street is a difficult condition that is not ideal for retail. At this time, an underpass is the preferred condition.

Providing an additional connection between Union Square and Boynton Yards will increase synergy between the two districts and distribute all modes, especially during peak hours. The City will work with MassDOT on development of this idea since it requires collaboration amongst city and state level government.

CONNECTING SOUTH STREET

To make a viable street network in Boynton Yards, another two-way connection from Medford Street to Webster Avenue is needed. In the street network overlay exercise, extending South Street to Webster Avenue is the most viable option for an east-west connection. There are three segments of the street, an existing segment from Medford to Harding Street, an almost entirely new segment from Harding to Windsor Street, and private access to a parking garage from Windsor Street to Webster Avenue.

The first segment, South Street from Medford to Harding Streets, runs through the Boynton Yards East pocket neighborhood. There are five houses, three commercial buildings, and ancillary parking lots fronting the street. South Street is one-way heading west with one side of on-street parking.

The existing right-of-way is wide enough to change the street to two-way with no on-street parking. This can be done with little interruption since the segment isn't signalized. In addition, all properties currently have access to off-street parking.

There are two other options that provide wider sidewalks and/or on-street parking that are not illustrated in the neighborhood plan. The first slightly bends the street to extend sidewalk widths. By doing so, there's a conflict with the existing side addition on 7 South Street. The other option uses the same bend in the street to extend sidewalks and maintain 18 street parking spaces. However, there's conflict with the existing side addition on 7 South Street and 26 South Street. These designs can be further developed with more community input of adjacent land owners.

The segment from Harding to Windsor Street will be almost entirely new. The street will be designed as a neighborhood street for two-way traffic with wide sidewalks. Where South Street passes public space, shared streets are possible.

The existing block between Windsor Street and Webster Avenue is a mix of new residential development and automotive uses that are likely to redevelop. South Street would bisect these sites.

In 2000, The Somerville Housing Group permitted what was later named Union Place – a mixed use development with 102 residential units, a commercial building with first-floor retail, and a 250-space parking garage. The residential development is complete and has been converted to condos. The garage was built by the developer as part of a 100-year land lease from the land owner. The commercial building is the only building unbuilt and will be the liner to the parking garage.

To access the garage, there is a one-way brick driveway from Webster Avenue to Windsor Street. The driveway already serves as a right-of-way but accesses its only frontage, the

existing parking garage. The extension of South Street would make a new two-way street including sidewalks while maintaining the existing access to the garage.

The idea has more advantages than disadvantages because of the existing nature of the driveway. The benefit to the City is that there would be a new connection to Boynton Yards. The benefit to the owner is that the City would own and maintain (including plowing) the new street segment and therefore the owner would no longer pay taxes on that portion of the property. In addition, the City met with property owners of the 80 Webster Street condominium building during the planning process. They expressed that more signage was needed because users sometimes went the wrong way on the driveway.

The South Street connection from Medford Street to Webster Avenue is necessary for a functioning street network in Boynton Yards. In some cases, it will improve on existing conditions. There's also opportunity to create an entirely new street. South Street will serve as the primary east-west connection in Boynton Yards.

ABOVE: South Street in the existing segment from Medford Street to Harding Street is wide enough to change to a two-way street with no on-street parking. This can be done with little interruption since the segment isn't signalized.

Starting with Complete Streets

Balancing the Streets for All Modes of Travel

The Transportation & Infrastructure Division (T&I) of the Mayor's Office of Strategic Planning and Community Development (OSPCD), the Traffic & Parking Department (T&P), and the Engineering Office of the Department of Public Works (DPW) work collaboratively to improve quality of life in Somerville by ensuring the City's streets are safe and designed for all users. The Somerville Complete Streets Ordinance, the first of its kind in Massachusetts, states: "Complete Streets are designed and implemented to assure safety and accessibility for all the users of our streets, paths and transit systems, including pedestrians, bicyclists, transit riders, motorists, commercial vehicles, emergency vehicles and for people of all ages and of all abilities." By adopting this ordinance, the City is committed to incorporating Complete Streets planning and design "into public transportation projects in order to provide appropriate accommodation for bicyclists, pedestrians, transit users and persons of all abilities, while promoting safe operation for all users, in comprehensive and connected networks, in a manner consistent with, and supportive of, the surrounding community."

A PEDESTRIAN-FIRST HIERARCHY

To implement this Complete Streets policy, the City is advancing a pedestrian-first modal hierarchy. All transportation projects and programs, from scoping to maintenance, will favor pedestrians first, then transit riders, cyclists, and motor vehicles. This pedestrian-first modal hierarchy resets the default premise for transportation projects in Somerville by acknowledging that every trip begins and ends as a pedestrian.

IMPLEMENTATION

Adopting a complete streets ordinance is a good start in the effort to make the street of Somerville a more equitable environment for all users. This type of policy provides guidance to government departments, consultants, developers, and community groups for the planning, design, construction, and operation of our transportation system. An important thing to remember when thinking about the design of our streets is that mobility is a means to and end. Achieving our goals for environmental sustainability, improved public health & safety, social equity, economic activity, and vibrant public life won't happen without actually moving beyond an ordinance and actually building complete streets.

In Boynton Yards, there's a rare opportunity to create complete streets from scratch. This plan identifies street sections likely in the neighborhood including a typology for conventional neighborhood streets and shared streets. As the network of Boynton Yards is developed, there will be more detail on street design but the priority is complete streets throughout the district.

1 Pedestrians

2 Transit

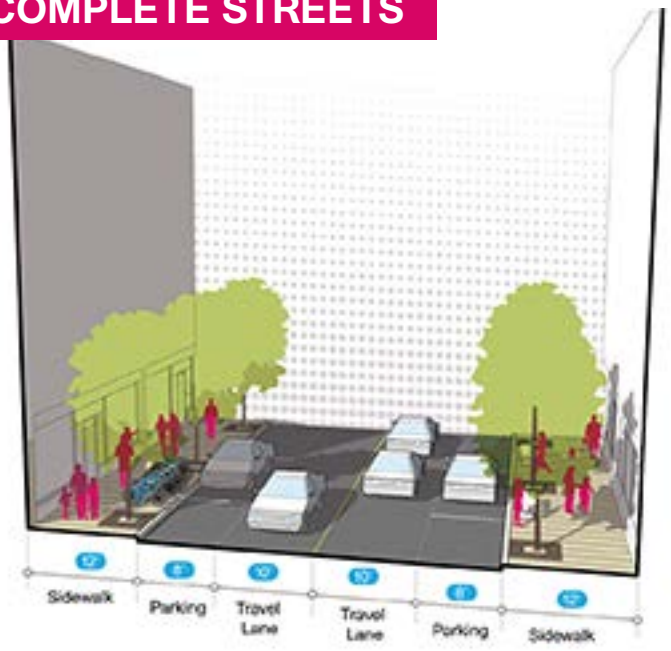
3 Bicycle

4 Motor Vehicle

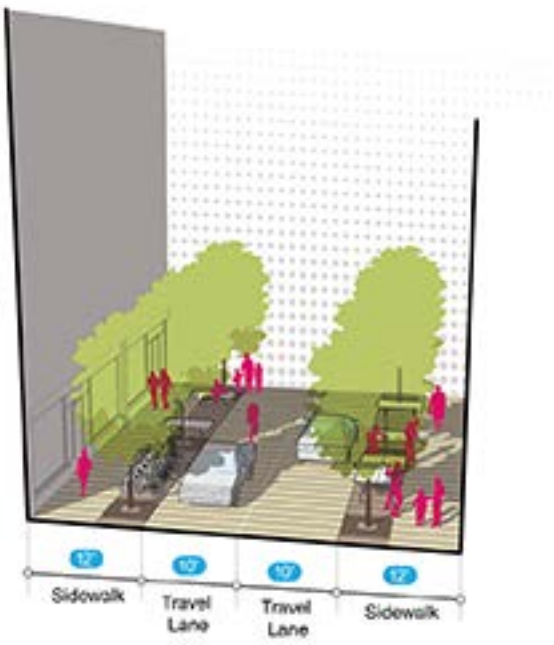
ABOVE: A graphic from the Boston Complete Streets Guidelines showing wide sidewalks, parking, a bike lane, and crosswalk including a bump out.

BELOW: Bell Street in the Belltown neighborhood of Seattle, WA was reconstructed as a shared street in 2014. The street is flush with the sidewalks. The only raised areas are landscaped planters.

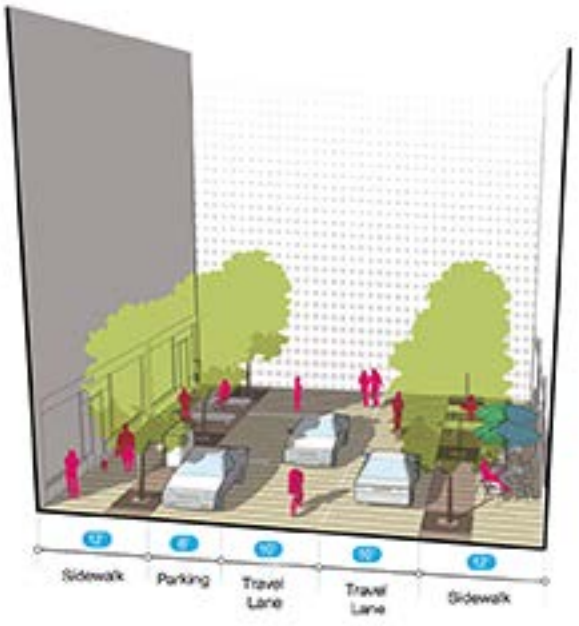
COMPLETE STREETS



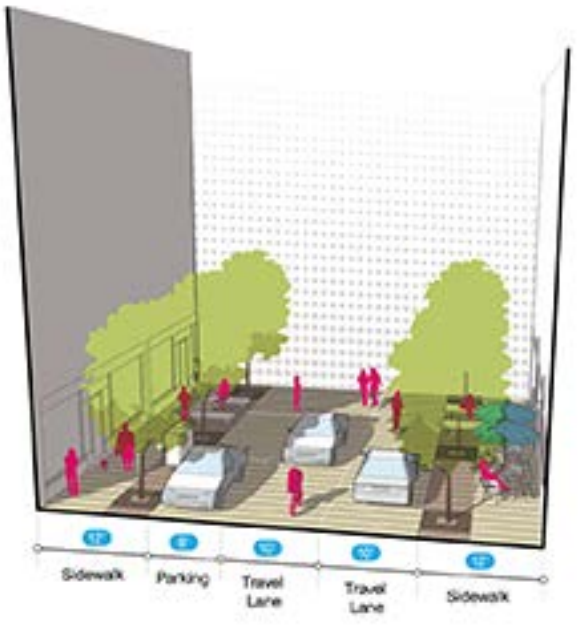
CONVENTIONAL Neighborhood Street
SOUTH Street is likely the direct east-west main street in Boynton Yards. South Street will build on existing conditions in Boynton Yards East but transition to two-way traffic, raised sidewalks with curbs and marked parking lanes. Sidewalks will be wide or widened as design permits. The friction created by narrow vehicular travel lanes and parking movements will create a condition where cars move slowly enough that bicycles can safely share the lane.



SHARED Main Street A
SHARED streets have no curbline and keep the sidewalk and street at the same level. Parking for retail and street trees serve as a buffer between traditional delineations in a street. Ample outdoor space is also provided for restaurants to spill out onto the street. Textured paving material is used to help slow the cars and make the street a safe place for people and public life.



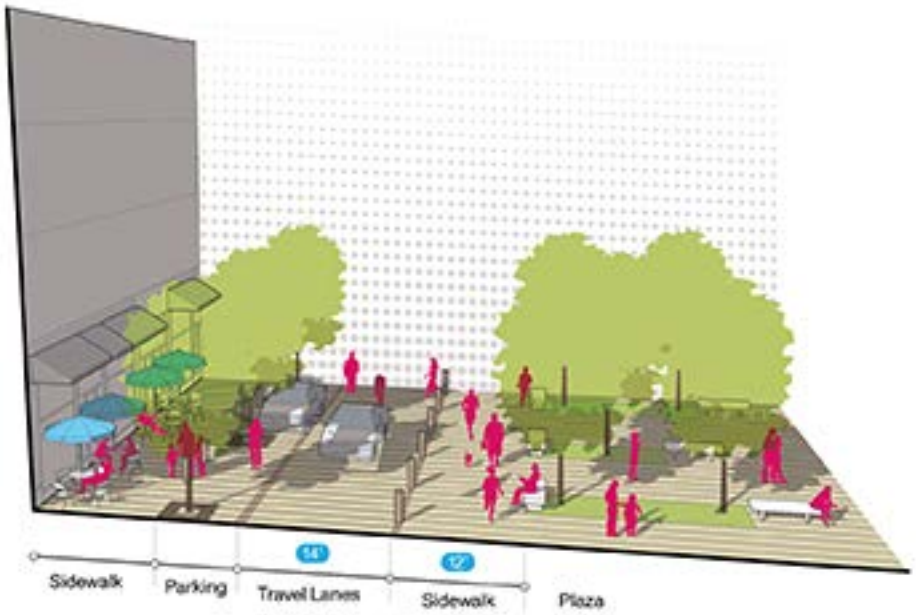
SHARED Main Street B
SHARED streets have no curbline and keep the sidewalk and street at the same level. Parking for retail and street trees serve as a buffer between traditional delineations in a street. In areas of Boynton Yards that are not as retail focused, street furniture and landscaping are emphasized.



SHARED Side Street
SHARED streets have no curbline and keep the sidewalk and street at the same level. Parking for retail and street trees serve as a buffer between traditional delineations in a street. Narrow side streets and neighborhood streets should accommodate pedestrians and public life activities through street furniture.

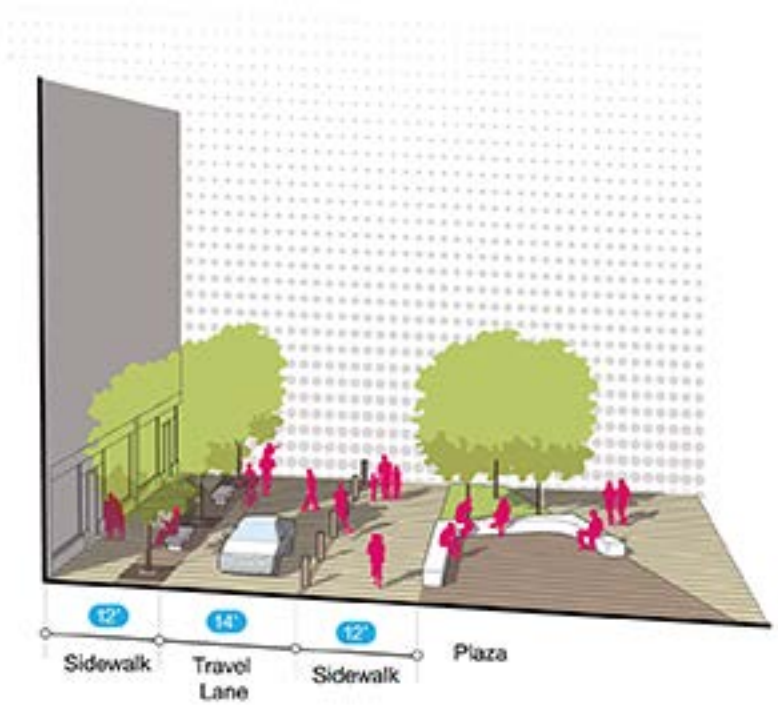
SHARED Drive A

SHARED streets have no curbline and keep the sidewalk and street at the same level. In this case, the sidewalk is part of a plaza. The streets surrounding large squares will serve as an extension of the square itself. While vehicles can move through this space, pedestrians are given priority. Travel lanes next to the plaza are demarcated by bollards. This allows pedestrians to flow through while keeping cars out. Street trees are used to channel vehicles as well as provide a simple threshold between the sidewalk area, travel lanes, and square.



SHARED Drive B

SHARED streets have no curbline and keep the sidewalk and street at the same level. In this case, the sidewalk is part of a small plaza. The streets surrounding small square will be seperated by bollards so that the space can extend beyond the square itself. This will maximize the usable area for public life to make small spaces as vibrant as possible. The relationship between sidewalk furniture and the seating options in the square should be coordinated so that the space feels as one.



Planning for Public Spaces

Trial and Error Identifies Options in Boynton Yards

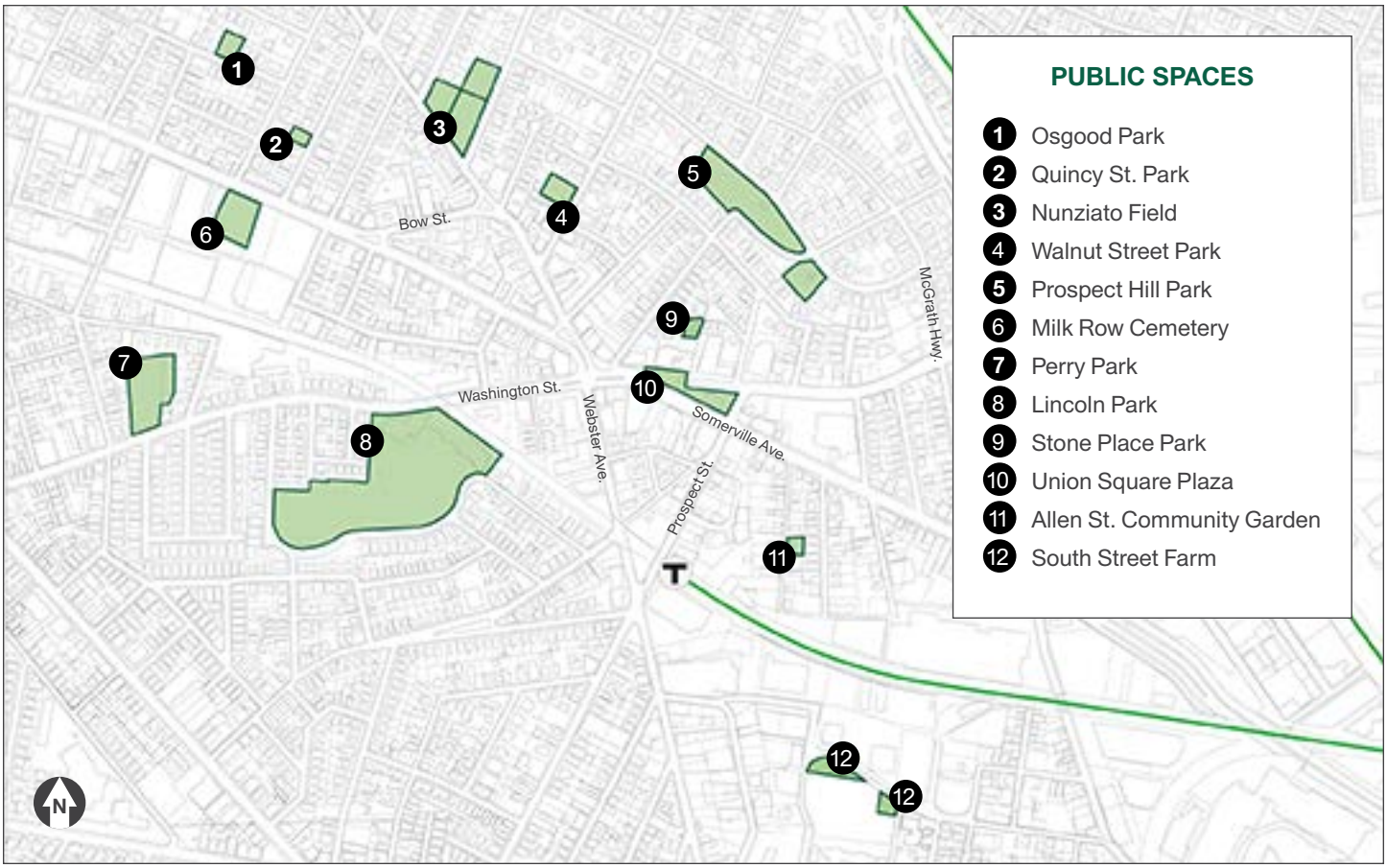
Boynton Yards currently has only one public space, South Street Farm. The farm was started in 2011 when Groundwork Somerville teamed up with the City to transform two paved lots in Boynton Yards. Groundwork Somerville's Green Team and volunteers maintain the lots; all food grown is made for sale at the Somerville Mobile Farmer's Market, donated to local food pantries, or used for special events. The South Street Farm has been a community resource and a reason for people to visit Boynton Yards over the last several years.

MORE PUBLIC SPACE IS NEEDED

Boynton Yards currently has very few residents and jobs. Residents have to leave the neighborhood to access public space. The expectation is for public space amenities to be added to Boynton Yards for the use of existing residents, new residents, and workers. To meet the goals of SomerVision, Boynton Yards needs 113,000 square feet or 2.59 acres of public space.

This Neighborhood Plan does not dictate one public space design solution for Boynton Yards. Rather, there are multiple solutions to meet the open space requirement. These are ideas and the final design/implementation could build upon the options presented. The important thing is that the public space target of 2.59 acres is met and creates spaces that fulfill community need.

In each scenario presented, the idea is that South Street Farm is relocated and possibly expanded. Any increase in space could include more farmland, easy access to water, storage, and a pavilion for small events. Several additional space types are needed in Boynton Yards. Each neighborhood needs a neighborhood park. Union Square has Nunziato Field. A playground is also necessary because kids cannot walk as far as adults to access open space. Lastly, a plaza will be the type of space where the community gathers. Plazas can change throughout a day and season. A plaza in Boynton Yards would probably host lunch hour sunbathers from nearby office buildings and families eating ice cream in the evening hours.

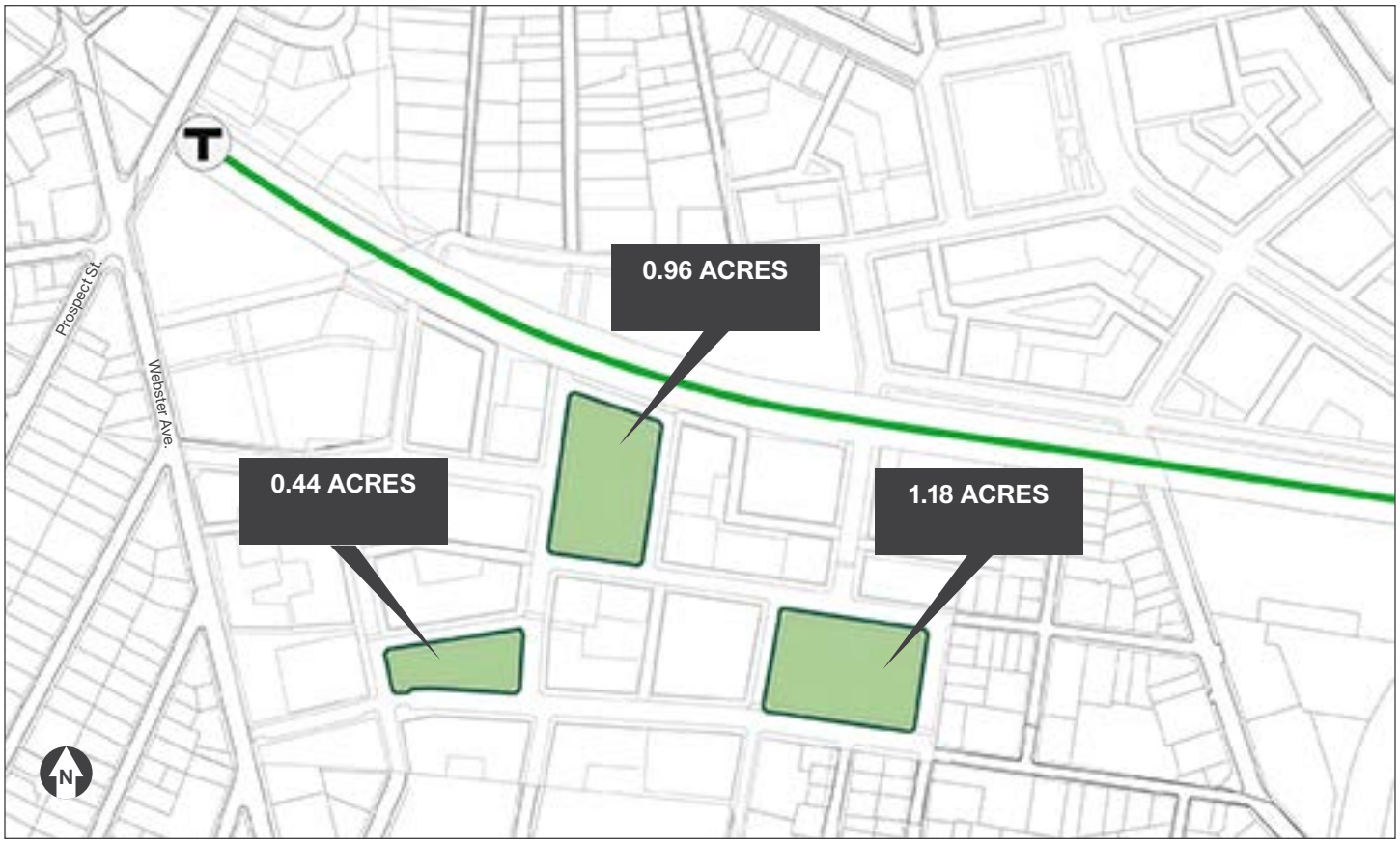


ABOVE: Existing map of Boynton Yards.

BELOW: Boynton Yards design with 4.68 acres of open space.

ABOVE: The original scheme presented for Boynton Yards in the first draft of the Union Square Neighborhood Plan provided for 1.8 acres of public space.

BELOW: This 'Savannah Squares' scheme provides 2.58 acres of new public space.



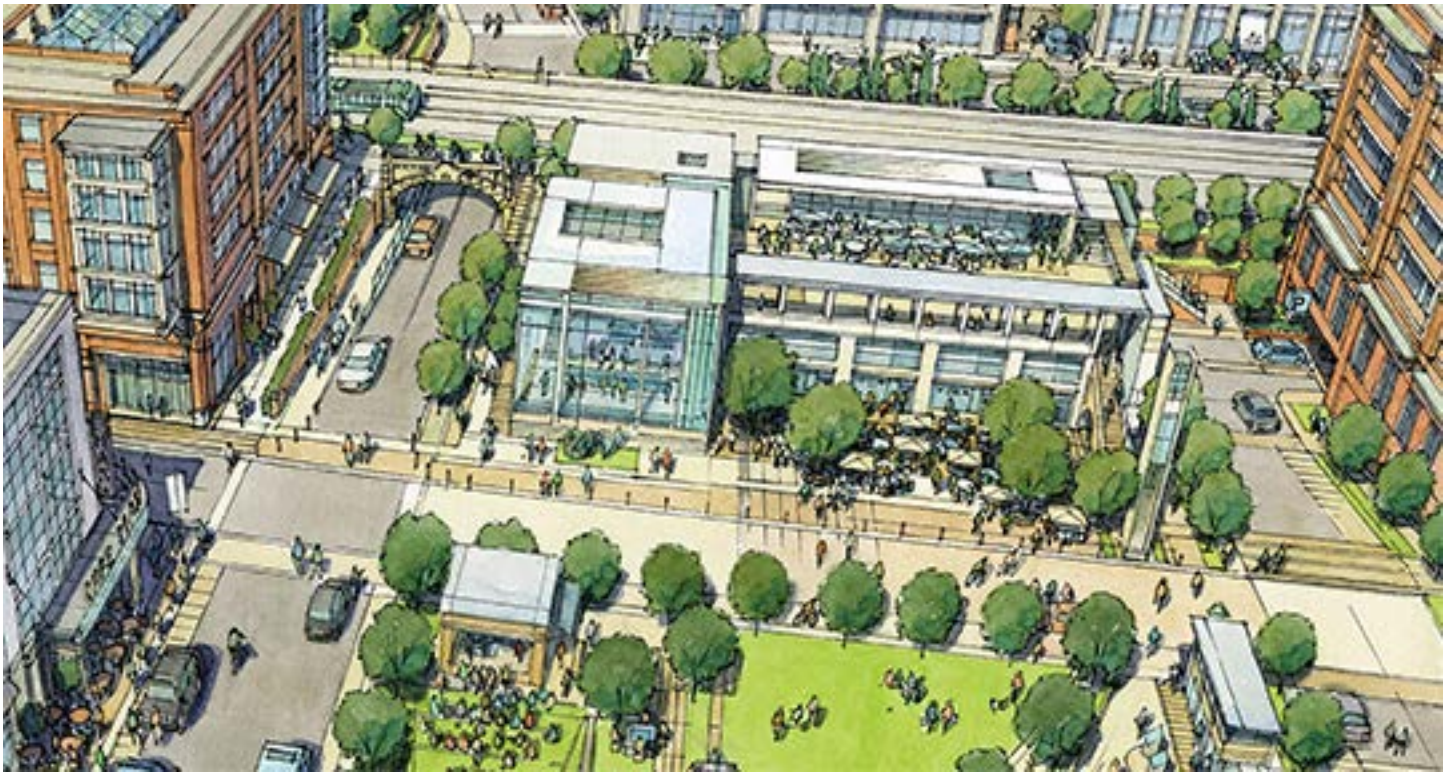
ABOVE: With some adjustments to the street network, the original scheme (shown at left) can be adapted to provide almost 3 acres of new public space.

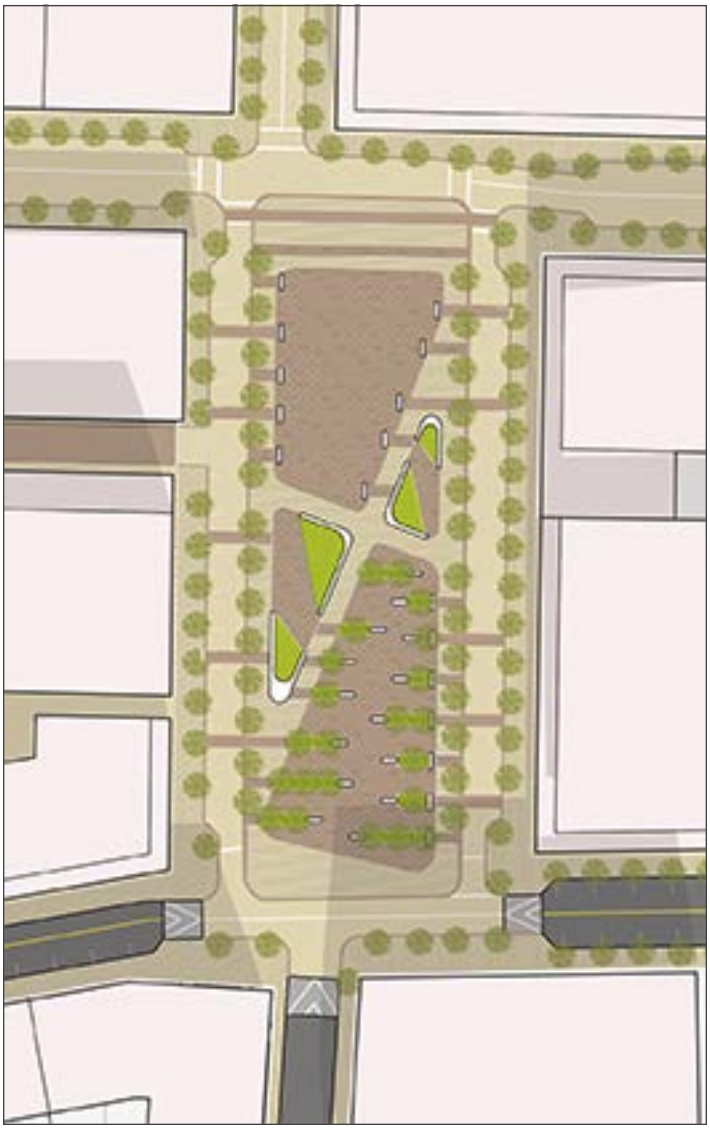
BELOW: The "Central Park" scheme has 2.77 acres of public space consolidated into one space

The Campo de' Fiore (translation: field of flowers) in Rome was an inspiration to the project team while designing open space options for Boynton Yards. Since 1869, the square hosts a 6-day a week vegetable and fish market. In the late afternoon and evening the square hosts passive gathering. The square has always been the focus of public life in Rome and serves as inspiration for a iconic space in Boynton Yards.

TOP: Campo de' Fiori is an active public space after dark.

LEFT: The vegetable and fish market in action. Vendors pack up their produce at night.





Establishing a Buildout for Boynton

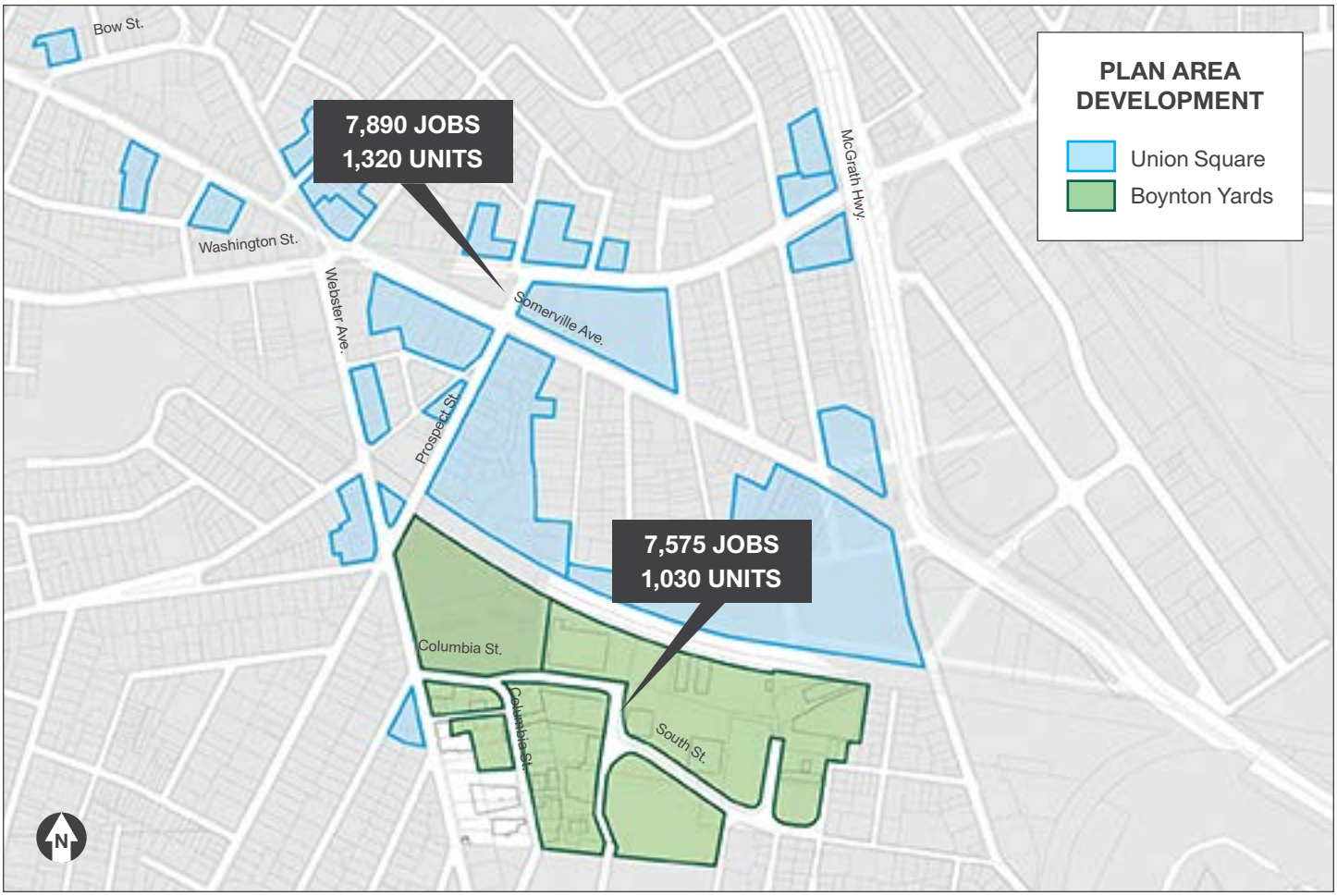
Contributing to SomerVision's Development Goals

SomerVision includes a set of aspirational targets for job creation, housing development, and open space improvement, along with guidance on how people should travel and where development should occur within the city (see page 34 for more information). By the end of 2016, the City expects to have added 5,000 new jobs, almost 900 new dwelling units, and about 12.8 acres of new public space, with an additional 19.5 acres in the pipeline, as a result of new development.

In 2015, the Mayor's Office of Strategic Planning and Community Development (OSPCD) hired RCLCO, a national real estate advisory firm, to help identify properties in the Union Square plan area that met specific economic criteria that makes them probable for development or redevelopment. Using the lots identified by RCLCO, current zoning would permit development of an estimated 7 million square feet and up to 3,600 dwelling units. If those dwelling units are converted to floor space and subtracted from the potential buildout, this new development could result in about 11,350 new jobs. These numbers represent only a 3 to 1 ratio of jobs to housing. SomerVision calls for at least a 5 to 1 relationship to establish a closer balance between the number of jobs within the city and the size of Somerville's workforce.

Redevelopment efforts in Union Square and Boynton Yards are focused on positioning the area to become a new Urban Employment Center station area (see page 44). To determine a proper build out that would also meet the objectives of SomerVision, OSPCD used development criteria provided by The Center for Transit-Oriented Development (CTOD), a non-profit funded by the U.S. Government that promotes best practices in transit-oriented development, to guide planning efforts. Chapter 2 contains a full description of the criteria recommended by COTD, but two metrics that align closely with SomerVision are a 60%/40% use mix ratio (commercial/residential) and a jobs to housing ratio of 6 to 1.

Each redevelopment site in the Union Square plan area is an opportunity to achieve a portion of SomerVision's development goals. Development was first estimated for the seven D Parcels (starting on page 178) followed by the scattered sites (starting on page 198) that were selected with the help of RCLCO's analysis. Many of the sites have limited opportunities for commercial development because



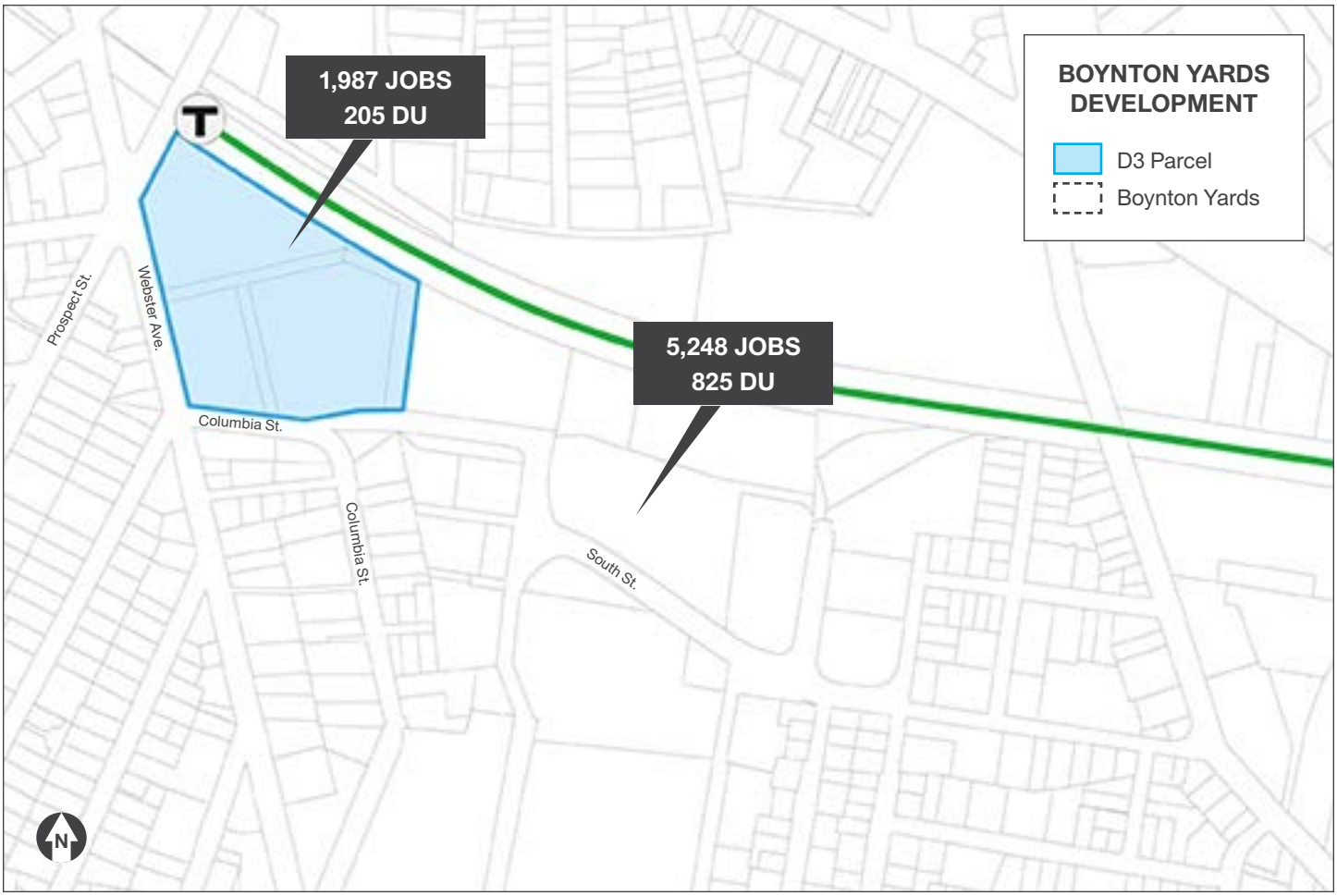
of a variety of site constraints. As a result, these two areas combined are slightly under-performing if the use mix and jobs to housing ratios for the full plan area were used to check their performance. This is counterbalanced through redevelopment of the greyfield properties around the existing Target (see page 204 for more info) and Boynton Yards.

Estimating development for Boynton Yards was done using the six building types identified in Chapter 3. Creating hypothetical parcels for commercial or lab buildings and ensuring there was a site was prioritized. Available sites are somewhat determined by the design of the street network and allocation of new public space in the area. To explore redevelopment possibilities, we used the conceptual street grid on page 231 because it features the preferred alignment for South Street and an ideal mix of public space types. The amount of commercial floor space was used as a control to determine how much residential was appropriate, by making sure to never violate the use mix and jobs-to-housing ratios developed for the plan area as a whole. In total, redevelopment estimated for the greyfield area is 63% commercial and 7.35 jobs for each housing unit.

The pages that follow include a more detailed estimate for development on the D3 Parcel. A photo showing existing conditions is included (but D3 is large and hard to photograph). At the bottom of the same page there's a graphic representing the extents of the D3 Parcel and how it should be subdivided into a number of smaller lots for redevelopment. The accompanying narrative explains character of development envisioned for each lot and is followed by a list of development objectives.

BOYNTON YARDS BUILD OUT ESTIMATE (Including D3)

Office Space	1,808,894 sf
Retail Space (max)	169,039 sf
Potential Jobs	7,574
Dwelling Units	1,030



PARCEL D3

The D3 Parcel is currently the site of Beacon Sales and Royal Hospitality Services, Inc. The site is nestled by a significant amount of electric power and telephone lines that need to be put underground. When redeveloped, the D3 Parcel should be subdivided into three or more lots: D3.1, D3.2, and D3.3 (see example below). D3.1 and D3.2 were identified early in the Union Square neighborhood planning process as sites that could accommodate office or laboratory type commercial buildings, with prominent frontage on Webster and Prospect Streets and immediately located next to the future Union Square Station site.

D3.1 and D3.2 should both be multi-story commercial buildings. D3.1 can fit an estimated 270,000 s.f. of commercial space, including around 11,000 s.f. of ground-floor retail. Due to the topography of D3.1, a parking podium can be built partially below grade under the building. D3.2 can fit another significantly sized commercial space, including 11,000 s.f. of ground-floor retail. D3.3 is best designed as a lined garage building type, wrapped by an up to a 20-story podium residential tower. The site is large enough for a standard sized parking garage (120′ x 240′) that can accommodate at least 85 spaces per floor. An irregularly shaped garage is

possible, for about 260 parking spaces. However, all of the D3 lots are located adjacent to the future Union Square station and should not have any minimum parking requirement because of its close proximity to transit.

DEVELOPMENT OBJECTIVES

Parcel Divisions

- The D3 Parcel should be platted into three or more lots (Lots D3.1, D3.2, and D3.3) with frontage no wider than 200 feet each.
- An alley system should be introduced into D3 to provide rear access and loading for all development. Alley #1 will connect at Webster Street, lead east into the site, and connect at the termination of a new street running north-south perpendicularly from Windsor Place – generally aligning along the property line between 50 and 56 Webster Street. Alley #2 will connect at Columbia Street, near where Columbia Street currently connects to Windsor Place, and run north into the site, connecting to Alley #1 at a "T".

Lot Development

- At least 15% of the D3 Parcel should be provided as useable open space unless aggregated offsite.
- Lot D3.1 should be developed into a 10-story commercial building with ground floor retail.
- Lot D3.2 should be developed as 10-story commercial building with ground floor retail or as a 6-story building with residential over retail.
- Lot D3.3 should be developed as a 10-story commercial building or as a 6-story podium with residential over retail and a residential tower up to 20 stories in height.
- Front setbacks should be increased abutting Prospect Street to accommodate sidewalks that are at least 12 feet in width.
- Development on Lot 3.1 should not inhibit a connection at Prospect Street to the proposed community path along the commuter rail/green line extension rail right-of-way.
- D3 buildings' architecture should be articulated to terminate the important views to the site looking from Concord Avenue, Tremont Street, and Columbia Street.


120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FAT OR
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Nutrition Facts

IMPACT ANALYSIS

TABLE OF CONTENTS

Fiscal Impact Summary

Development's Impact on the Fiscal Health of the City

The City of Somerville's annual budget is prepared by the Mayor's Office and adopted by the Board of Alderman for each fiscal year. This public process starts every spring with a presentation to the public and Board by the Mayor. The budget details incomes such as property taxes, excise taxes, and fees. It also details the expenses of the City: payroll, trash service, snow plowing, and even items added to the library collections. The Board reviews, and sometimes amends or removes, each line item of the budget prior to adoption in time for the beginning of the fiscal year on July 1st.

Over the last decade, the City has strived to improve core services and create a model of efficient, effective government. The City looks for creative partnerships as well as state and federal funding to achieve the level of service that's been delivered thus far. Union Square and Boynton Yards are no exception to the sound fiscal planning that has been a cornerstone to this administration; that's why the City worked with TischlerBise on a fiscal impact analysis of the Union Square Neighborhood plan.

WHAT IS A FISCAL IMPACT ANALYSIS?

A fiscal impact evaluation analyzes revenue generation and operating and capital costs to a jurisdiction associated with the provision of public services and facilities to serve new development over a period of time. An example of revenue generation is increased property taxes from a site that went from an industrial use to multiple stories of commercial and residential development. Operating costs are expenses related to the operation of a business. In government, this could be the salary for a new K-8 teacher. A capital cost is a fixed one-time expense such as a new road or municipal building.

The fiscal impact evaluation includes all direct revenues and costs associated with a specific project. To do this, TischlerBise met with City departments to get the most up-to-date information. The chart on the facing page shows some of the inputs from the development parcels including the D Parcels, Milk Square, Scattered Sites, and Boynton Yards. Many of the assumptions in the analysis can be viewed as policy-making decision points, which if modified, would affect the overall results.

One of the policy-making decision points in the model is accounting for the infrastructure work needed in the plan area. For instance, Union Square infrastructure cost, including the cost of borrowing is estimated at $116 million, Boynton Yards at $57.7 million. The City is always applying for state and federal grants to help fund the infrastructure work needed. Only applications awarded have been put into the model. Another grant award would have a positive impact.

The fiscal impact evaluation has taken into account the information we have available and includes many policy-making decision points. The fiscal impacts also need to be reviewed in the context with City-wide comprehensive planning goals. For instance, job creation goals may not be possible without infrastructure investment.

FISCAL IMPACT RESULTS

The outlook is positive. Union Square and Boynton Yards generate net surpluses to the General Fund greater than the capital deficits. Averaged over a 30 year period, redevelopment of Union Square and Boynton Yards would generate $12.4 million annually.

This evaluation is a snapshot of time. If needed, the City can work with TischlerBise to refine the model. Somerville will continue to balance its budget each year, considering financial guidelines and polices, applicable operating impacts, and available resources. To dig into the numbers, the entire fiscal impact report is available in the Appendices.

Reducing the Residential Tax Burden

The City asked TischlerBise to analyze the cost of producing 1 residential unit to 1,000 square feet of commercial development. Due to Somerville's history as a city with a residential tax burden it was commonly assumed that residential development was a net loser for the city or that every housing unit developed cost the city more in operating and capital expenses than it generated in tax income.

The analysis shows that only deed-restricted affordable units in Union Square loses money for the City, due its the limited assessed value. Because of the marginal cost approach used in the analysis, which takes into account existing City infrastructure and operational capacity, residential units in the plan area are not a fiscal burden to the City. Contributing factors include high assessed values, the relatively low persons per household average, pupil generation rates factors, as well as reduced dependence on automobiles.

KEY DEVELOPMENT ASSUMPTIONS - UNION SQUARE & BOYNTON YARDS

Residential	Union Square	Boynton Yards	Assessed Value	People per Household	Pupils per Household
Population	2,493	1,947	-	-	-
Residential Units	1,055	824	190,000	1.89	.13
Affordable Units	264	206	91,200	1.89	.13
Non-Residential	Union Square	Boynton Yards	Assessed Value	People per Household	Pupils per Household
Total Commercial SF	2,269,864	2,068,387			
Office SF	1,782,626	1,808,894	$340	-	-
Retail (Maximum)	377,073	169,039	$340	-	-
Creative Enterprise	110,165	90,455	$200	-	-
Hotel	175 Rooms	-	290,000 per room	-	-

SUMMARY OF 30-YEAR FISCAL IMPACTS

Revenue	Union Square	Boynton Yards
Total General Fund Revenue	382,232,279	327,685,109
Total Special Revenue	254,716	221,682
Total Revenue	382,486,996	327,906,791
Expenditures		
Total City General Fund Operating Expenditures	103,808,397	47,571,278
Total City Special Revenue Fund Expenditures	0	0
Total Public School Operating Expenditures	8,276,595	6,355,518
Total City Capital Expenditures	116,036,868	57,765,769
Total Expenditures	228,121,860	111,692,565
Fiscal Impacts		
Net Cumulative Fiscal Impact	154,365,136	216,214,226
Average Annual Impact	5,145,504.53	7,207,141

Transportation Analysis

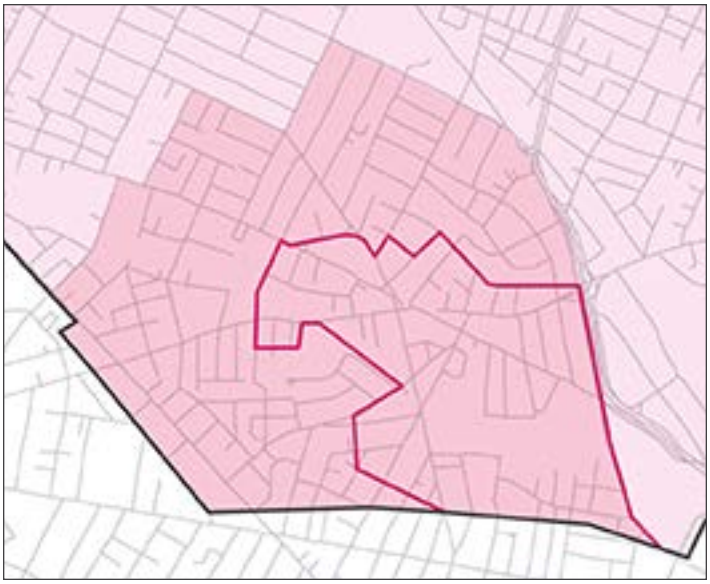
Development's Impact on Different Modes of Travel

This transportation analysis of the Union Square neighborhood plan was prepared by Staff of the Mayor's Office of Strategic Planning and Community Development in close partnership with Nelson\Nygaard Consulting Associates, a national multi-modal transportation planning and engineering firm specializing in best practices for public transit, street design, and mobility management.

STUDY AREA

The full Union Square plan area is generally bounded by McGrath Highway to the east, the City boundary with Cambridge to the south, Highland Avenue to the north, and a boundary to the west formed by School, Summer, Laurel, and Park Streets. For the transportation impact analysis, a slightly smaller study area was created to focus on parts of Union Square where new development will occur. This transportation study area is generally bounded by McGrath Highway to the east; the City boundary with Cambridge to the south; a boundary to the north formed by Columbus, Walnut, and Bow Street; and a boundary to the west formed by Concord Square up to the Fitchburg Commuter Rail right-of-way, and Church Street (see inset map).

Analysis of the estimated distribution of new vehicle trips throughout the Union Square transportation system considered the following major streets: Somerville Avenue, Washington Street, Prospect Street, Webster Street, Bow Street, Summer Street, Medford Street, Charlestown Street/ Merriam Street, South Street, and McGrath Highway. Estimated changes in pedestrian volumes considered these same streets and their major intersections, but also included desire lines through public spaces and the access points into the future Union Square station site.



REDEVELOPMENT BUILD OUT

The redevelopment of Union Square and Boynton Yards as a new Urban Employment Center station area was guided by the objectives of SomerVision and development criteria provided by The Center for Transit-Oriented Development (CTOD), a nonprofit funded by the U.S. Department of Housing and Urban Development (HUD) to promote best practices in transit-oriented development. Chapter 2: *Community Driven Planning* reviews SomerVision's aspirational targets for economic development, housing, and open space and provides a full description of CTOD's development criteria for an Urban Employment Center. Development estimates are summarized below.

Total Build Out	
Office/Lab Space	3,592,000 sf
Retail Space (max)	546,000 sf
Potential Jobs	15,465
Dwelling Units (max)	2,350
Use Mix Ratio (Com/Res)	61%/39%
Jobs to Housing Ratio	6.58 to 1

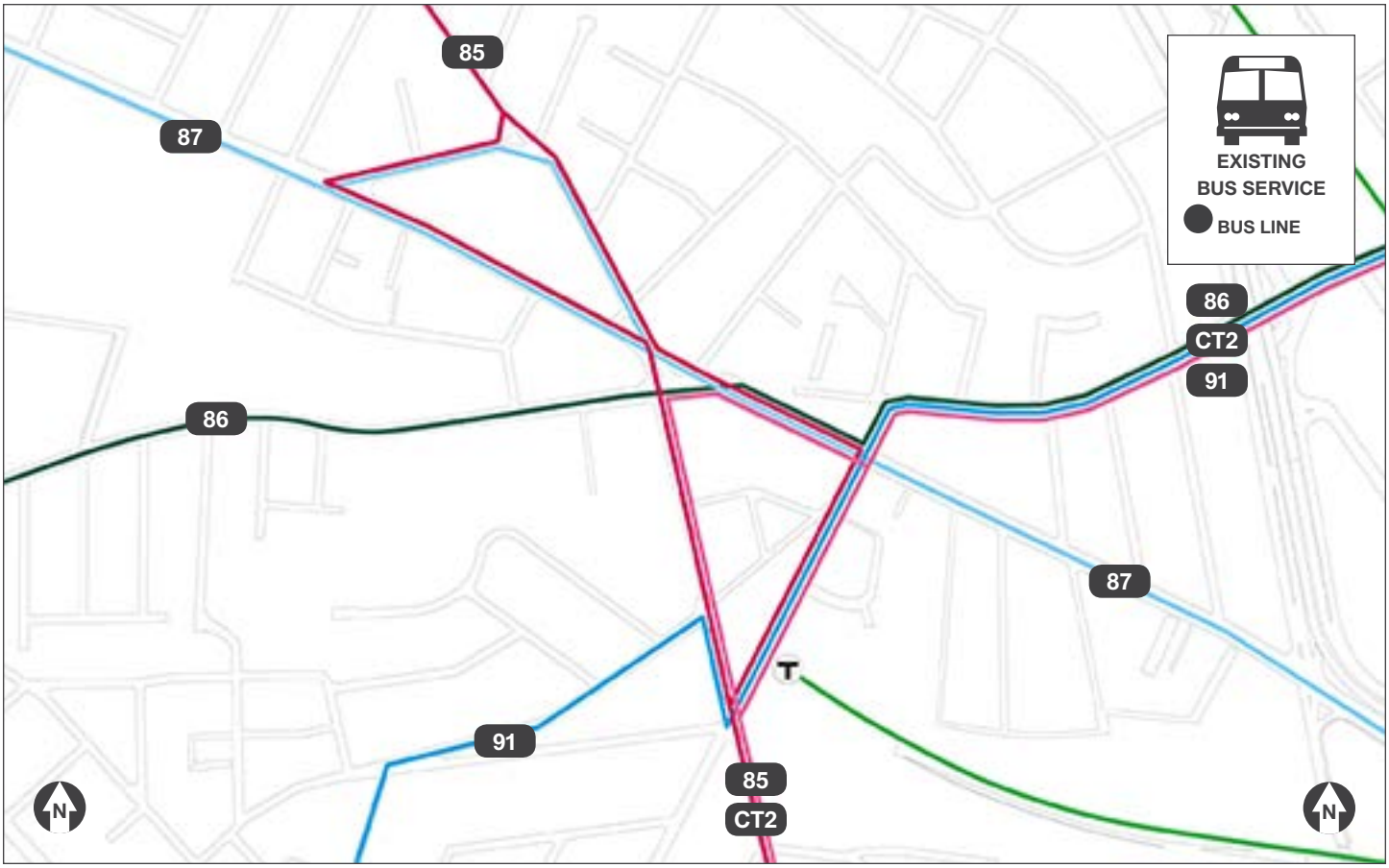
Union Square Build Out (Excluding D3)	
Office/Lab Space	2,242,688 sf
Retail Space	1,758,626 sf
Potential Jobs	7,890
Dwelling Units (max)	1,320

Boynton Yards Build Out (Including D3)	
Office/Lab Space	1,808,894 sf
Retail Space (max)	169,039 sf
Potential Jobs	7,575
Dwelling Units (max)	1,030

EXISTING PUBLIC TRANSIT

Union Square has relatively good access to bus transportation. Five of the MBTA's local bus routes, the 85, 86, 87, 91, and CT2, cross through the core of the square. These routes provide the neighborhood with single seat rides to Spring Hill, Arlington Center, Cleveland Circle, the Longwood Medical Area, Central Square, Kendall/MIT, Lechmere, Sullivan Station, and the Red, Orange, and Green Line of the MBTA's rapid transit system.

Roadway congestion in Union Square impacts the reliability of bus service in the plan area and results in lengthy travel times. Bus routes operate in mixed-flow traffic along congested streets, which causes inefficient and unreliable transit service delivery which results in lengthy travel times. Additionally, the current roadway system is at capacity and carries large regional traffic volumes. According to



the MBTA's own analysis, all of Union Square's bus routes (except Route 85) failed to meet MBTA service delivery policies for schedule adherence and reliability standards. According to the MBTA's schedule and verified by field data, travel time for the Route 87 bus between Union Square and Lechmere Station (1.15 miles) can take approximately 17 minutes, depending on the time of the day.

As part of its application for New Starts funding from the Federal Transit Authority, the MBTA investigated potential alternatives to the Green Line Extension, including a point-to-point shuttle bus service between Lechmere Station and Union Square using Monsignor O'Brien Highway, McGrath Highway, and Somerville Avenue. This service would follow a similar route as the current Route 87 bus, with headways similar to the proposed extension of the D Branch of the Green Line to Union Square.

The estimated travel time for the enhanced shuttle service between Union Square and Lechmere Station with no intervening stops would take an estimated 14 to 17 minutes during the peak periods, based on average bus speeds. Estimated travel time between Union Square and Lechmere Station for the proposed Union Square spur of the Green Line's D Branch is 4.5 minutes - an actual time savings of 13 minutes or 74% when compared to the existing condition or point-to-point shuttle bus. For commuters, this is a time savings of 130 minutes (over 2 hours) per week.

Three of the MBTA's commuter rail lines pass through Somerville, but there are no commuter rail transit stops to provide the benefit of rail access. The Fitchburg commuter rail crosses east to west through the Union Square plan area. Porter Square station is the closest point of access into the commuter rail system for residents or employees in Union Square.

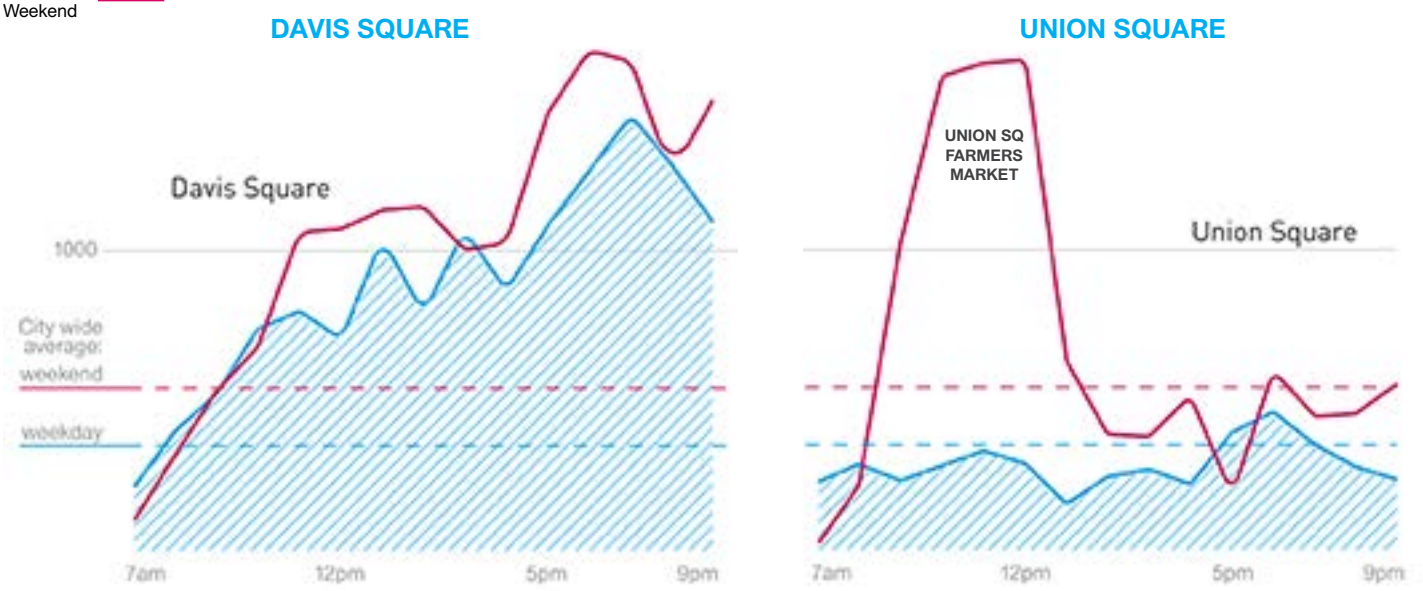
EXISTING PEDESTRIAN VOLUMES

Pedestrian counts were collected from multiple sources and aggregated to provide a snap shot of activity within Union Square. In April 2014, Parsons/Brinkerhoff, an engineering and design firm specializing in transportation and infrastructure, collected data on pedestrian crossing movements at intersections. Parsons' data set provides information for dozens of crosswalks in the transportation study area, but was only collected during the peak hours for automobile traffic because they were doing a traffic study of existing conditions. In May 2015, Gehl Studio, an urban research and design consultancy focused on people centered urban design, collected robust weekday and weekend pedestrian counts at multiple locations across Somerville, including six in Union Square. Gehl's data set provides detailed information across an entire day, but is focused on specific streets such as Somerville Avenue, Bow Street, and Washington Street.

The average peak hour for automobile traffic is typically between 7 to 9 am in the morning and 4 to 6 pm in the evening. The National Association of City Transportation

PEDESTRIANS PER HOUR

Weekday
Weekend



Officials (NACTO) recommends counting pedestrians during the mid-day lunch hour and again after the evening rush hour, when vehicular traffic volumes begin to dip but pedestrian traffic beings to rise in mixed-use, transit-oriented urban environments like Somerville. For this transportation analysis, pedestrian counts were aggregated from both available data sources. The Parsons' data provides weekday pedestrian counts from the hour between 4:30 and 5:30 PM, which is the peak hour of vehicular traffic in Union Square. This is combined with weekday pedestrian counts from the hour between 5:00 and 6:00 pm from the Gehl data set. Merging the data in this manner accounts for some of the increased pedestrian traffic identified by NACTO, but also creates a baseline of pedestrian activity across the largest extent of the transportation study area as possible.

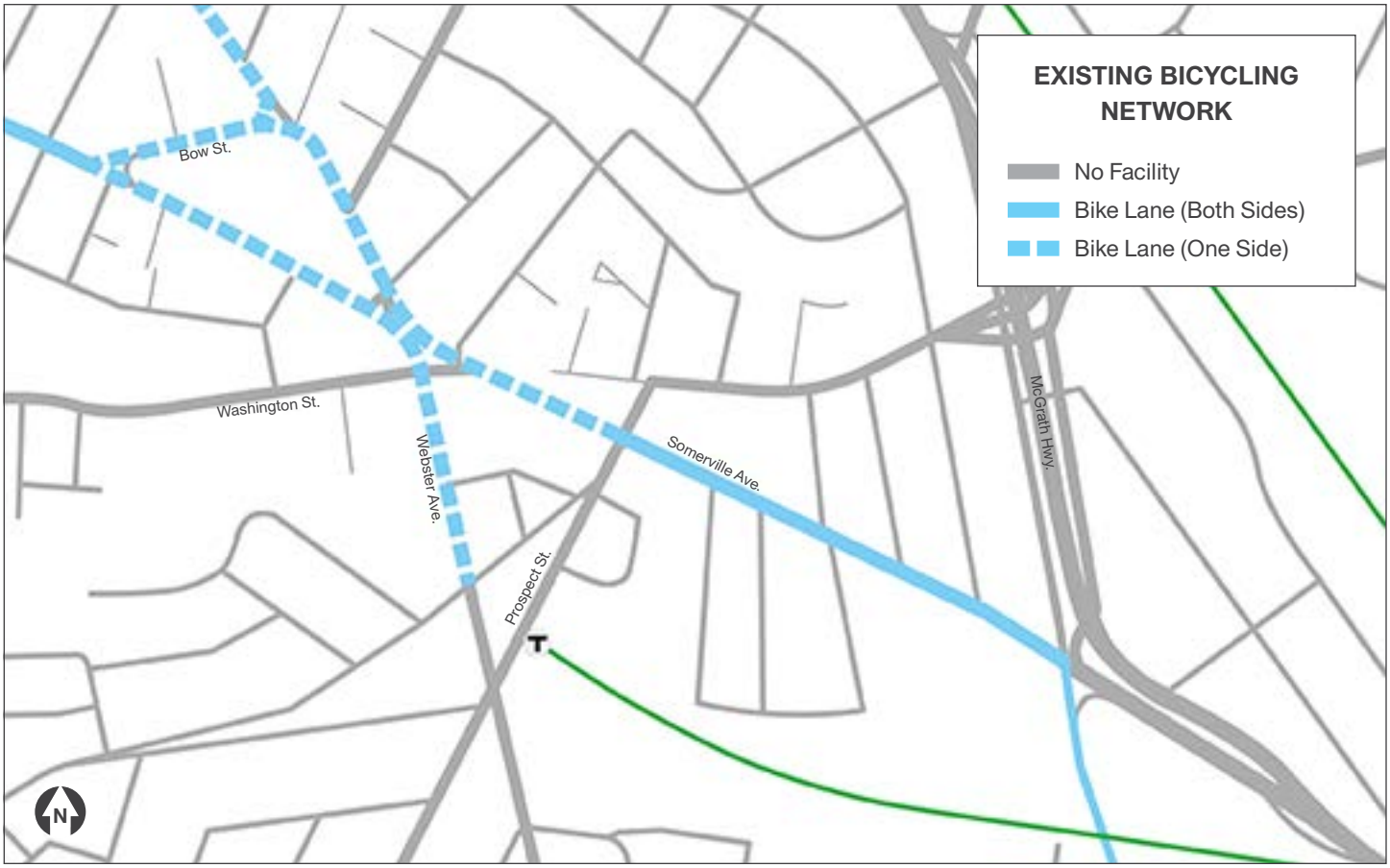
The highest pedestrian counts in Union Square were recorded along Bow Street, with 372 pedestrians per hour walking on both sides of the street past the new Union Square Post Office and Bloc 11 cafe. This activity jumps to almost 440 pedestrians per hour between 6:00 and 7:00 pm. Second was Somerville Avenue with 294 pedestrians per hour walking on both sides of the street past Sally O'Brien's and the former location of New Asia Restaurant. In a close third, was a second location along Somerville Avenue with 276 pedestrians per hour walking on both sides of the street past Mandarin Chinese and Union Square Plaza (basically in front of Brass Union). Of particular note are seven different locations in the Square where an average of 150 pedestrians per hour were seen arriving back from work at MBTA bus stops.

EXISTING BICYCLING FACILITIES

Within the Union Square plan area, only Somerville Avenue, Summer Street, Bow Street, and Medford Street have unbuffered bicycle lanes. None of the other streets have dedicated bicycle facilities, although sharrows are common. Somerville Avenue features a bicycle lane on both sides of the street from the western edge of the plan area to the Church Street intersection. At Church Street, this bicycle facility becomes a one-way paired system with an east bound bicycle lane on the southern side of Somerville Avenue and a west bound bicycle lane on the north side of Bow Street. From the intersection with Washington Street and Webster Avenue, Somerville Avenue does not have a dedicated west bound bicycle facility until the intersection with Washington and Prospect Streets, where the facility returns to two way until the intersection with McGrath Highway. A westbound bicycle lane hugs the main plaza on the north side of Somerville Avenue and transitions into the Bow Street facility. On the eastern edge of the plan area, Medford Street features a bicycle lane on each side of the street from the intersection with McGrath Highway in the north extending to Ward Street where it transitions into sharrows.

During the same Public Space, Public Life survey that gathered pedestrian counts across Somerville, Gehl Studio found Union Square to have the highest rates of cycling in the city. The highest average daily bicycle count was recorded at Somerville Avenue in front of Union Square Plaza, with an average of 83 cyclists passing west bound each hour. In a close second was an average of 70 cyclists traveling east bound each hour on Somerville Avenue past Sally O'Brien's. The Gehl survey did not collect bicycle counts on Beacon Street, which is well recognized as the primary bicycling corridor in both Somerville and Cambridge.

Hubway bike share stations are located at the Union Square Plaza (20 bikes) and near the intersection of Beacon Street and Washington Street (15 bikes). The City also has on-street bike parking corrals near Bloc 11 Cafe, Fortissimo Coffee



House, and Union Square Plaza. Relatively few 'inverted U' sidewalk installed bicycle racks exist in the plan area.

EXISTING PARKING SUPPLY

An inventory of both on and off-street, public and private parking was recorded for the transportation study area of Union Square based on data provided by the City and updated through field observations conducted in early September 2015 by Nelson/Nygaard.

A total of 3,200 parking spaces were identified in Union Square. One third of this parking is curbside (on-street) parking that is dispersed throughout the neighborhood. This parking includes a mix of residential permit parking, 2 hour metered parking, business parking for employees or visitors, and free parking - some of which is not permitted overnight.

TYPE	SPACES	PERCENTAGE
Curbside Parking	1,065	33%
Off-Street, Public	46	1%
Off-Street, Private	2,073	65%
TOTAL	**3,184**	**100%**

Curbside parking regulations in the transportation study area includes 2-hour metered parking, residential permit parking, 2-hour business parking, business/employee permit parking, and even free on-street parking - some of which prohibits overnight parking. The City's business/employee permit parking program provides a non-transferable, non-refundable assigned parking space to employees or visitors of a business without off-street parking at curbside locations designated as 2-hour business parking. These spaces are also available as residential permit parking between certain hours.

Approximately 2,119 off-street parking spaces are located in either parking lots or structures in the transportation study area. Of these total spaces, approximately 2,073 are private and only 46 spaces are available to the public. Public parking is concentrated in the core of the square, at Union Square Plaza, and is metered for 2-hour parking. Over two thirds of the parking in the study area is available to only a certain user group, for example customers of a specific business.

The four largest sources of customer only parking are the Target parking lot (265 spaces), the Citizens Bank parking lot (54 spaces), the Burger King parking lot (38 spaces), and the parking lot behind Reliable Market (17 spaces). Boynton Yards has over 500 off-street spaces for employees, customer parking, and/or fleet vehicles of area businesses across multiple sites. Only two Zipcar locations exist in the transportation study area, one at Allen Street (with 3 cars available) and another at Stone Avenue (also with 3 cars available).

EXISTING PARKING UTILIZATION

Parking utilization analysis provides a snapshot of how the supply of parking in Union Square is currently used by residents, employees, and visitors over the course of a day. Parking occupancy data was collected by Nelson/Nygaard. Data collection occurred on Saturday, September 12, 2015 and Thursday, September 17, 2015 over the entirety of both days, with no special events or construction that would impact the use of parking spaces.

Parking available in the transportation study area is categorized into three types for the analysis. Public parking includes on- and off-street metered parking, 2-hour business parking, business/employee permit parking, and free on-street parking. Private parking includes all off-street lots, whether for customers, employees, or residents. Permit parking includes all on-street residential permit parking. Three levels of utilization are used to evaluate the 'fullness' of parking to determine when a parking area is functionally at capacity:

- **0% - 80%** is the point at which on-street and off-street facilities are viewed as underutilized. Any resource that consistently performs at this level, especially during peak-demand periods, should be viewed as having excess capacity.
- **81% - 90%** represent actively-used resources. The nearer utilization levels approach the high end of this range, the more efficiently they are being utilized and nearing functional capacity.
- **91% and greater** is considered at functional capacity. While fully maximizing efficiency, these facilities are full or near full, giving the impression of a lack of parking. Parking in some of these areas could also be over the marked capacity (more than 100%), meaning that cars are double-parked or parked illegally because demand exceeds capacity.

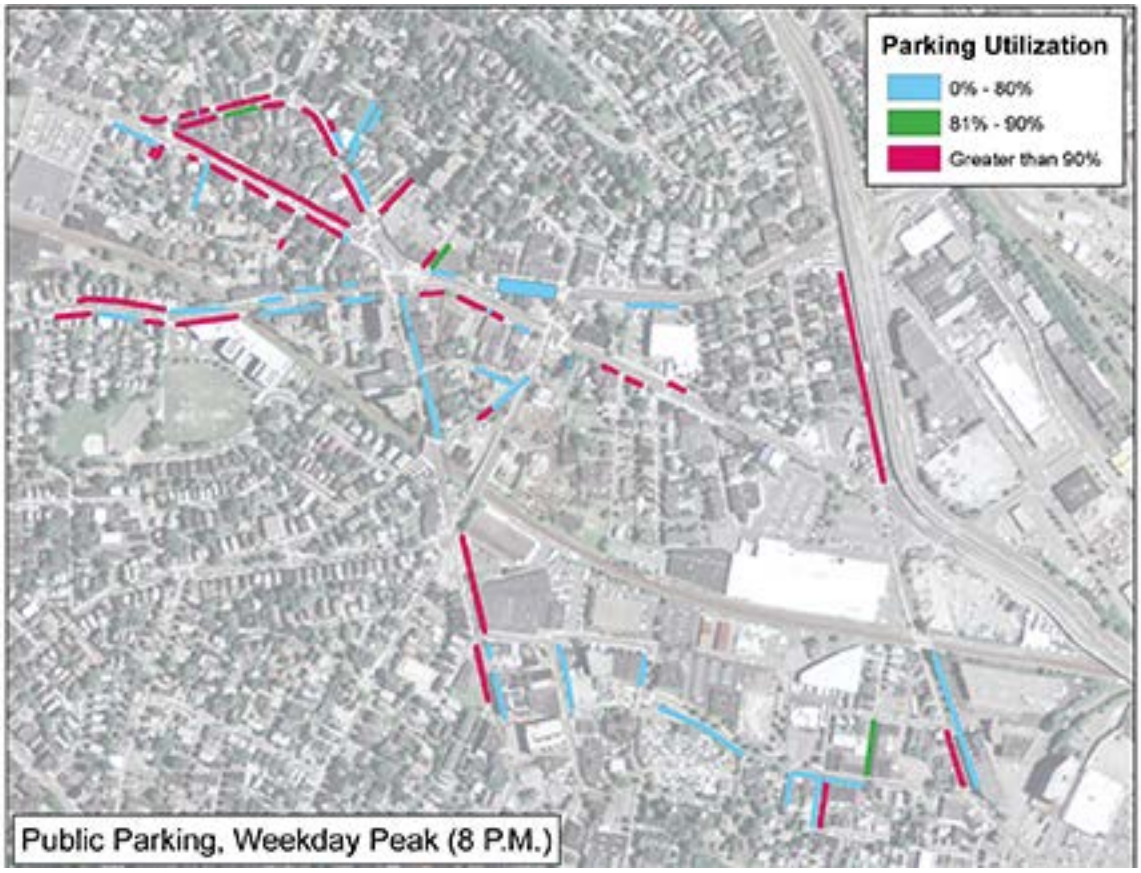
The following key findings can be made from the parking utilization data:

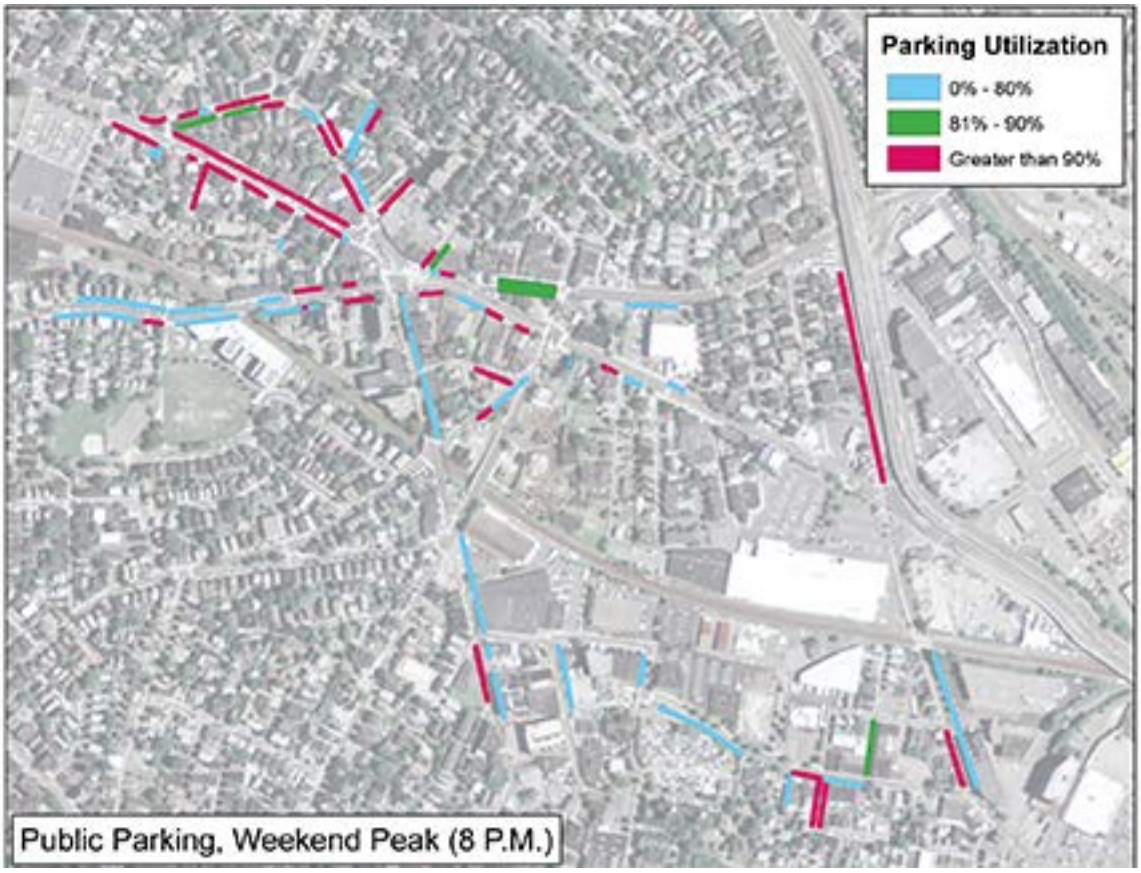
Overall
- The weekday parking peak (2 pm) shows 64% overall utilization and is fairly evenly dispersed.
- The weekend parking peak (6 pm) has 54% overall utilization and is concentrated closer to the heart of the square.
- At no point during the week does parking in Union Square approach maximum utilization. However, certain types of parking (public vs. private vs. permit) are more highly utilized at certain times of the day.

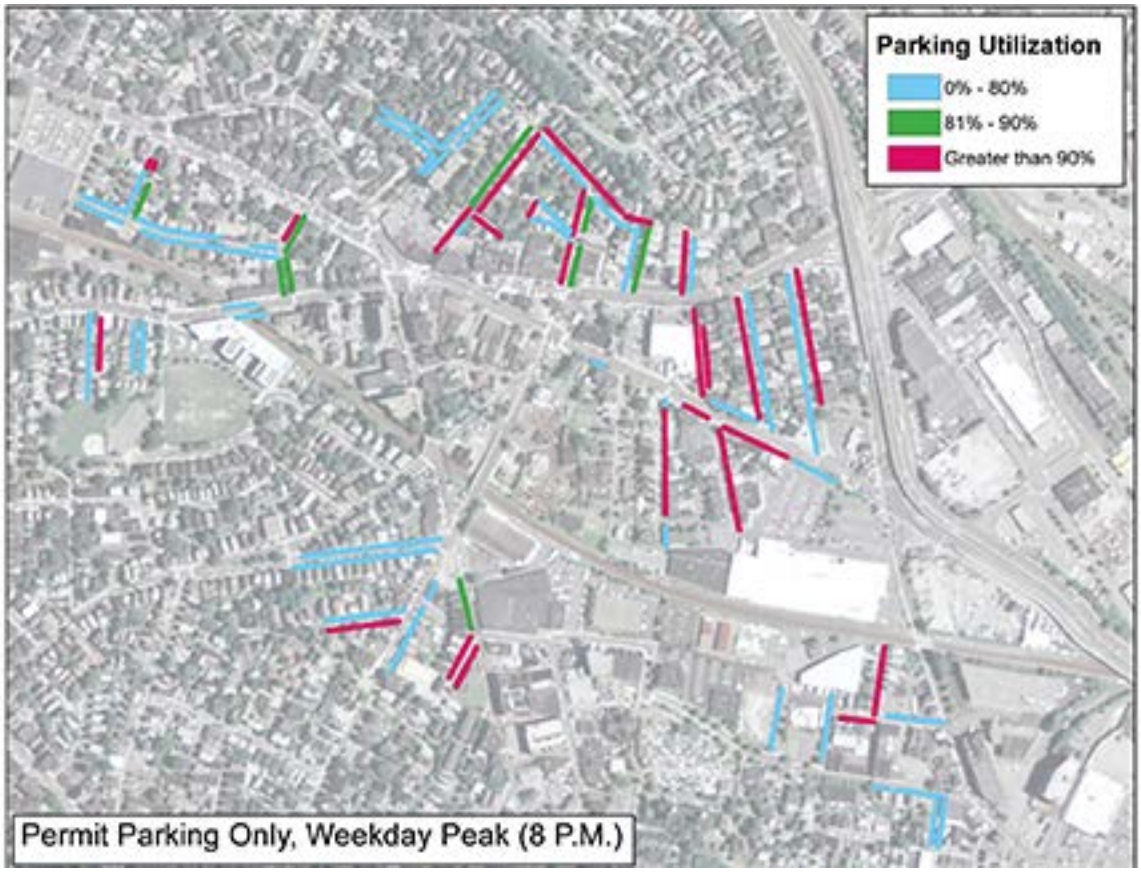
Public Parking
- Public parking accounts for just over 400 of the nearly 3,200 parking spaces in the Union Square study area, almost 90% of which is on-street.
- Public parking is particularly in demand on the weekends (90% peak utilization (Saturday, 8 pm)) but also has the lowest daily average utilization of all on-street parking types (Thursday, 58%).

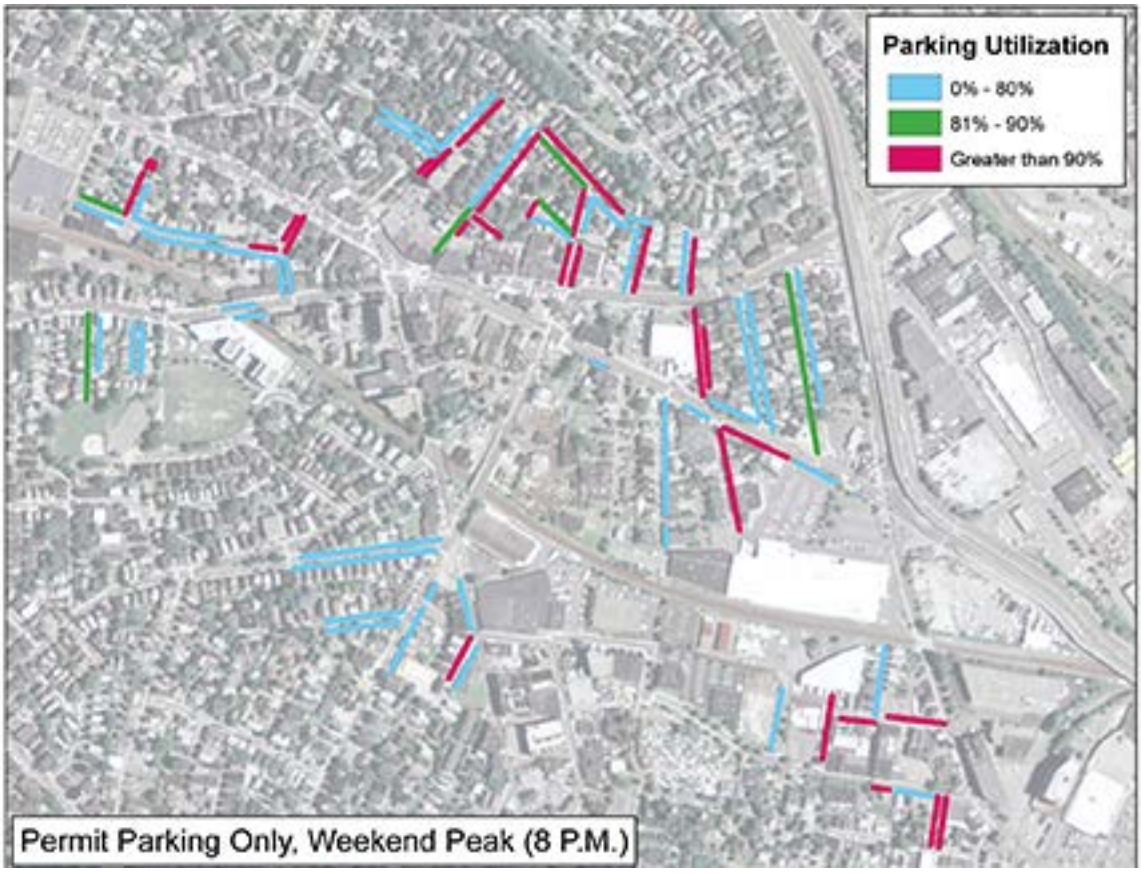
Permit Parking
- About 25% of the parking supply in Union Square is permit parking (all on-street).
- Permit parking only streets are fairly well utilized at all times but rarely approach maximum utilization (69% average utilization, 76.9% peak (Saturday, 8 pm)).
- There is sufficient overnight parking, street or otherwise, for residents of Union Square.
- Some permit only streets near the heart of the Square are not well utilized during peak hours.

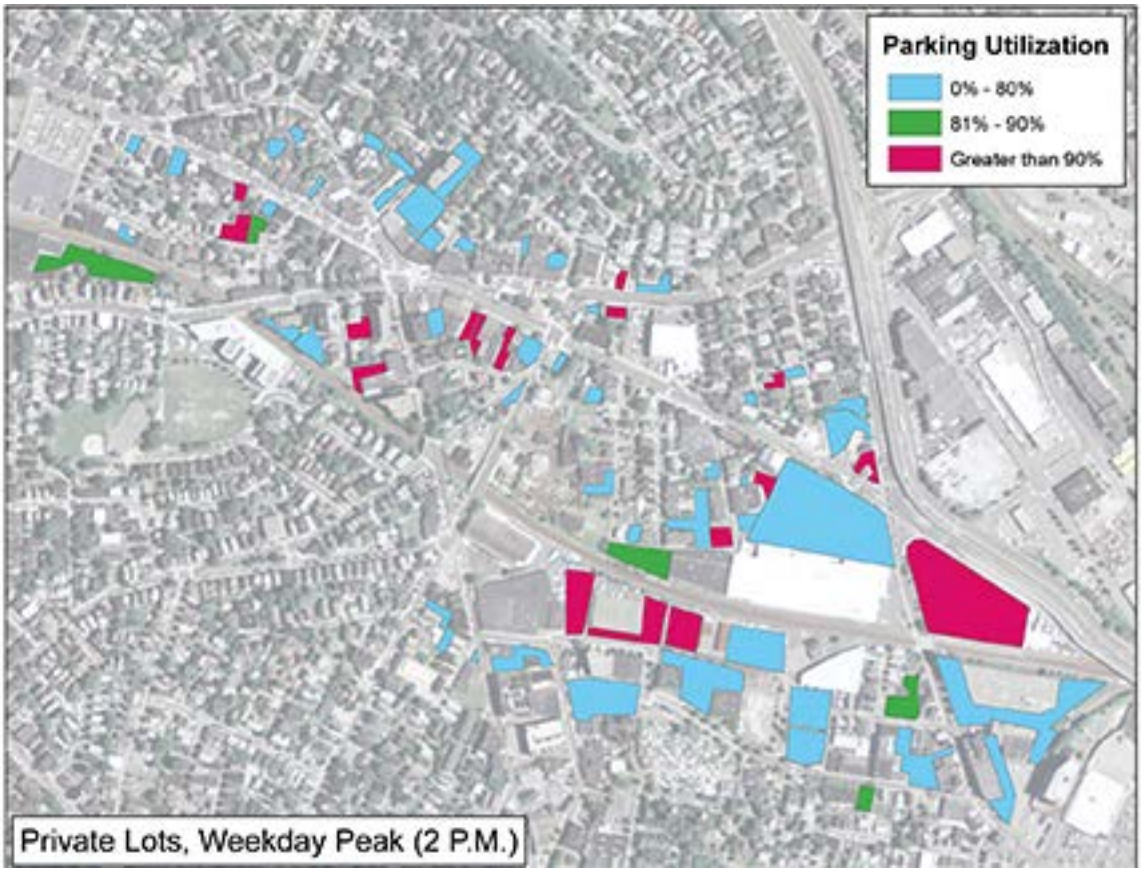
Private Parking
- Private off-street parking lots account for about 2/3 of all parking in Union Square, effectively making the majority of parking space business-specific and promoting long stretches of time with poor utilization.
- The majority of large off-street private lots are concentrated in the Target/Boynton Yards region, where certain lots are utilized for short stretches of time but in general the supply exceeds the demand by a considerable amount.
- The Target and Boynton Yards Tech Park (Jamspot) parking lots are two of the largest lots in the area but never exceed 76% utilization, and the average is much lower.

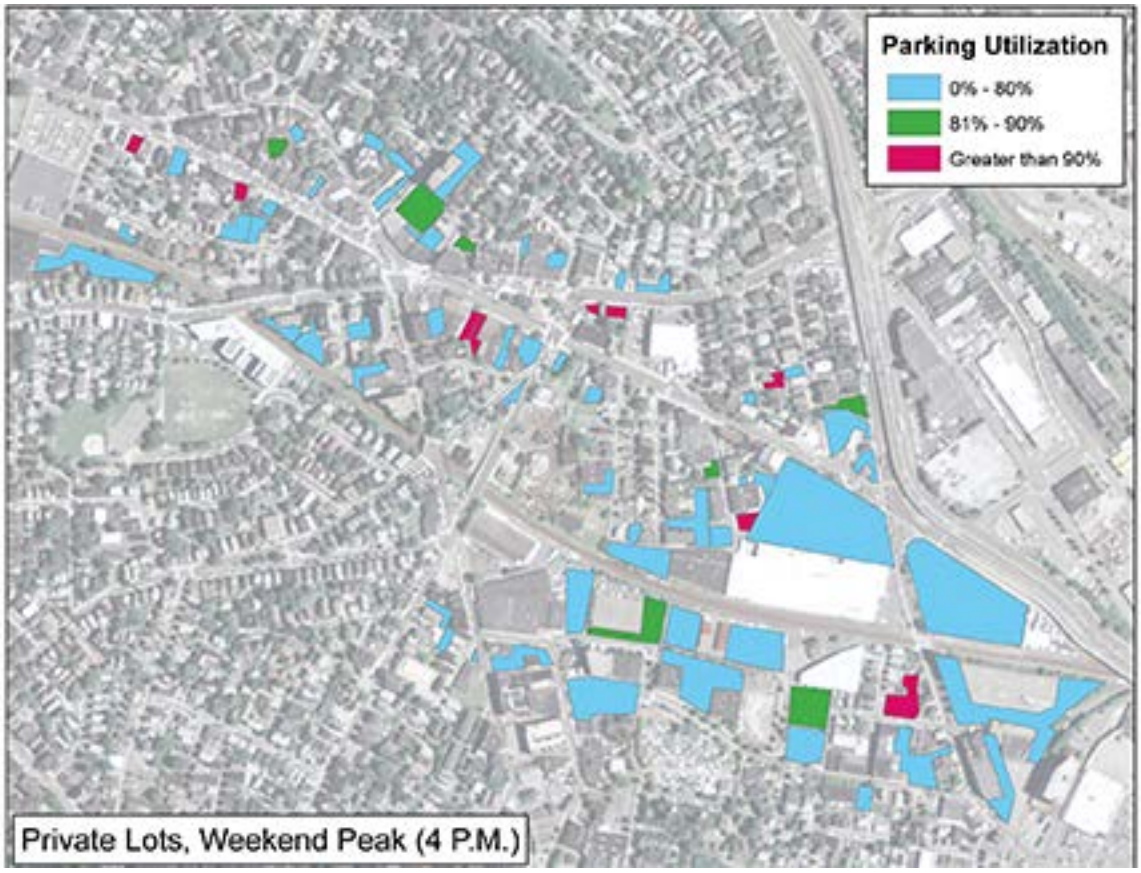

Parking Utilization
0% - 80%
81% - 90%
Greater than 90%
Public Parking, Weekday Peak (8 P.M.)


Parking Utilization
0% - 80%
81% - 90%
Greater than 90%
Public Parking, Weekend Peak (8 P.M.)


Parking Utilization
0% - 80%
81% - 90%
Greater than 90%
Permit Parking Only, Weekday Peak (8 P.M.)


Parking Utilization
0% - 80%
81% - 90%
Greater than 90%
Permit Parking Only, Weekend Peak (8 P.M.)


Parking Utilization
0% - 80%
81% - 90%
Greater than 90%
Private Lots, Weekday Peak (2 P.M.)


Parking Utilization
0% - 80%
81% - 90%
Greater than 90%
Private Lots, Weekend Peak (4 P.M.)

TRIP GENERATION

Traditional transportation impact studies seek to estimate the number of vehicle trips new development will generate to determine impacts on the regional transportation system. In mixed-use, transit-oriented urban environments, estimating how people will travel to and from one or more development sites becomes even more complex as it is necessary to account for transit trips, walk trips, and bicycle trips in addition to vehicle trips.

The most widely used source of information for this type of analysis is the Institute of Transportation Engineers (ITE) Trip Generation Manual, which provides trip generation rates for various land uses based on data collected across the United States. However, ITE's trip generation rates are not well suited for urban neighborhoods like Union Square. From the introduction of ITE's own Trip Generation Manual:

> "Data were primarily collected at suburban locations having little or no transit service, nearby pedestrian amenities, or travel demand management (TDM) programs. At specific sites, **the user may wish to modify trip generation rates presented in this document to reflect the presence of public transportation service, ridesharing, or other TDM measures; enhanced pedestrian and bicycle trip-making opportunities; or other special characteristics of the site or surrounding area.** When practical, **the user is encouraged to supplement the data in this document with local data that have been collected at similar sites.**" [emphasis added]

The Mayor's Office of Strategic Planning and Community Development is working to develop a better suite of tools to analyze how new development impacts urban transportation systems and identify any necessary mobility policy changes or capital improvements to mitigate those impacts. This includes gathering new data through local observations to create a replacement for ITE's database, which will improve the City's ability to estimate urban multi-modal trip generation for planning and development review.

ITE's lack of relevant proxy sites for urban and infill development has inspired various federal agencies, state and county governments, and transportation organizations to develop alternative models to estimate vehicular trip generation. These models all typically use ITE data as an input to estimate the total number of person trips before applying additional 'trip reduction factors' such as density, mixed land uses, transit service, TDM programs and other site characteristics, to determine vehicle trips. There is currently no accepted standard or best practice to estimate the number of person trips generated in mixed-use, transit-oriented urban environments.

In lieu of having desirable local data, the City requested that Nelson\Nygaard develop an alternative model to estimate the number of trips generated by new development in the Union Square plan area for all modes of travel. Based on Union Square's urban context, mix of uses, and access to multiple transportation modes, Nelson\Nygaard created the following equations and inputs to model trip generation:

Person Trips:

(ITE + 1 *standard deviation*) * Vehicle Occupancy

ITE rates only account for vehicular trips because they are primarily recorded at suburban locations where all trips are made by automobile. In a mixed-use, transit-oriented context the overall number of person trips (in/out of a particular use) tends to be higher than typical ITE rates. To account for the overall higher rate of person trips, the ITE rate + 1 standard deviation is used to estimate the overall number of person trips. One standard deviation is still within a "normal" range of trip generation, but at the high end. ITE's rates are also vehicle specific and do not account for the number of passengers within an automobile when counted. To fully convert ITE rates to person trips, the ITE rate + 1 standard deviation is adjusted for vehicle occupancy. In 2000, the average vehicle occupancy for Middlesex County was 1.13 persons/vehicle.

Vehicle Trips:

(ITE + 1 *standard deviation*) * Vehicle Occupancy * Mode Share * Internal Capture * Mobility Management

or

(ITE+1*sd*) * 1.13 * 0.50 * 0.85 * 0.90

This second equation starts with the total number of person trips (see above) and uses a number of adjustments to estimate the number of new trips that will be made by motor vehicle. The first adjustment comes from the SomerVision objective that at least 50% of all new trips should be made by transit, walking, or bicycling. This **mode share** variable immediately sets aside at least 50% of the total person trips into the desired modes of travel.

The second adjustment accounts for **internal capture**, which are trips that remain on the local street network in the same neighborhood where development is located and do not have regional transportation implications. A study of

239 mixed-use sites in Atlanta, Boston, Houston, Portland, Sacramento and Seattle found an average of 18% internal capture. Fifty-nine of these sites were located in Boston, which had an internal capture rate of 16.9%. The equation used for Union Square uses an internal capture rate of 15%. The last adjustment applies a reduction for **mobility management**, another important objective from SomerVision. Mobility management helps people know about and use all of the transportation services that are available in their location. Reductions for mobility management are set at 10% to account for services, information, and incentives that will decrease driving demand even lower than today's multi-modal context provides.

This results in the following mode split assumptions for new development in the Union Square plan area:

Mode Split Assumptions

Mode Type	%
Driving	38%
Public Transit	20%
Walking	25%
Bicycling	17%
Total	**100%**

62% of new trips are estimated to be made by walking, bicycling, or taking public transportation

Residents, employees, and visitors of new development in the Union Square plan area are estimated to make approximately 22,604 new daily trips by riding public transportation services, with 3,153 trips (2,109 in and 1,044 out) during the am peak hour and 2,934 trips (932 in and 2,002 out) during the pm peak hour. An estimated 28,309 new daily trips will be made by walking, with 3,950 trips (2,642 in and 1,308 out) during the am peak hour and 3,677 trips (1,168 in and 2,509 out) during the pm peak hour. Approximately 18,873 new daily trips will be made by bicycle, with 2,633 trips (1,761 in and 872 out) during the am peak hour and 2,450 trips (778 in and 1,672 out) during the pm peak hour. Approximately 37,936 daily automobile trips, with 2,648 trips (3,542 in and 1,753 out) during the am peak hour and 2,463 trips (1,565 in and 3,361 out) during the pm peak hour. Together, 65% of new trips are estimated to be made by walking, bicycling, or taking public transit, exceeding SomerVision's goal for 50% of new trips to be non-automobile.

Transit Trips

	Daily	AM In	AM Out	PM In	PM Out
Union Square	14,519	1,294	685	609	1,232
Boynton Yards	8,085	815	359	323	770
Total	**22,604**	**2,109**	**1,044**	**932**	**2,002**

Walking Trips

	Daily	AM In	AM Out	PM In	PM Out
Union Square	18,183	1,621	858	764	1,544
Boynton Yards	10,126	1,021	450	404	965
Total	**28,309**	**2,642**	**1,308**	**1,168**	**2,509**

Bicycling Trips

	Daily	AM In	AM Out	PM In	PM Out
Union Square	12,122	1,080	572	509	1,029
Boynton Yards	6,751	681	300	269	643
Total	**18,873**	**1,761**	**872**	**778**	**1,672**

Automobile Trips

	Daily	AM In	AM Out	PM In	PM Out
Union Square	24,367	2,173	1,150	1,023	2,068
Boynton Yards	13,569	1,369	603	542	1,293
Total	**37,936**	**3,542**	**1,753**	**1,565**	**3,361**

TRIP DISTRIBUTION

A trip distribution analysis estimates both the number of trips that will occur between an origin and a destination and the route those trips will take to travel between the origin and destination on a map. Trip distribution allocates a percentage of trips from each origin to distinct destinations elsewhere in the region.

Trip distribution was estimated as follows:

Inbound to Union Square	**%**
Local EB* via Summer Street	2%
Local & Route 2A EB via Somerville Avenue	8%
Local EB via Washington Street	13%
Local & I90 EB via Prospect Street	18%
Local NB via Webster Street	7%
Local & Route 28 NB via Medford Street	14%
Local & Route 28 NB via McGrath Highway	11%
Local, Route 99 SB, & I93 NB via Washington Street	5%
Local, Route 28 SB, & I93 SB via McGrath Highway	22%

Outbound from Union Square	**%**
Local WB via Summer Street	7%
Local & Route 2A WB via Somerville Avenue	6%
Local WB via Washington Street	5%
Local & I90 WB via Prospect Street	4%
Local SB via Webster Street	4%
Local & Route 28 SB via Medford Street	4%
Local & Route 28 SB via McGrath Highway	12%
Local & Route 99 NB via Washington Street	20%
Local, Route 28 NB, I93 NB, I93 SB via McGrath Highway	28%

*EB-East Bound, WB-West Bound, NB-North Bound, SB-South Bound

Separate inbound and outbound trip distribution maps were created for both Union Square and Boynton Yards (see pages 266-267).

BUILT CONDITION TRANSIT RIDERSHIP

In the application for New Starts funding from the Federal Transit Administration, the MBTA estimated 7,140 daily boardings and alightings (exits) for Union Square station. The MBTA made this estimate based on existing conditions and the Union Square Master Plan from 2003, which included a development program of 65,000 sf of retail and either 258 dwelling units or 380,000 sf of office space. Since that plan was published, rehabilitation of former industrial buildings and new infill development within the Union Square plan area has created over 240 dwelling units, 20,000+ sf of retail space, and 250,000+ sf of commercial space. As a result, the MBTA's estimate is now a better reflection of anticipated daily ridership from existing rather than future conditions.

At full build out, new development in the Union Square plan area will generate over 20,000 new transit trips. A percentage of these new transit trips can be expected to use the Green Line rather than local bus services. Residents and employees traveling to Lechmere, Massachusetts General Hospital, Downtown Boston, the Longwood Medical Area, and other activity centers along the Green Line's alignment, along with travelers seeking south bound transfers to the Orange Line, Red Line, and Commuter Rail services, are all expected to use the service. A conservative allocation of 40% of new transit trips to the Green Line results in an additional 9,041 daily trips, which is potentially 4,520 new boardings and alightings at Union Square Station. In total, daily ridership expected from existing conditions and new development can be expected to reach 8,090 entrances - making Union Square the sixth busiest station on the Green Line.

BUILT CONDITION PEDESTRIAN VOLUMES

At full build out, new development in the Union Square plan area will generate up to 28,309 new walking trips, 18,873 new bicycle trips, and 22,604 new transit trips that will require a walk to or from a new building in the Union Square plan area. Depending on the location and design of automobile parking facilities, an additional 37,939 vehicle trips could (and should) generate even further increases in pedestrian volumes. At the 'PM peak hour' anywhere between an estimated 9,000 and 14,000 additional people will be walking around Union Square as a result of new development.

The number of development sites included in the estimated build out for Union Square and Boynton Yards adds difficulty to estimating the exact location of increased pedestrian

volumes with any reasonable level of accuracy. This type of analysis is more appropriate during development review as sites and sub areas are built out over time. However, increases in pedestrian activity can be estimated for the general vicinity of the future Union Square transit station and the plaza envisioned for the D2 Parcel. A number of sources are drawn from to estimate build condition PM peak period pedestrian volumes for comparison with the baseline pedestrian volumes observed in existing conditions.

As mentioned previously, the MBTA estimated 7,140 daily boardings and alightings for Union Square station. About 928 (13%) of these daily boardings & alightings can be expected during the PM peak hour. This original estimate now reflects anticipated daily ridership from existing conditions because the neighborhood has already seen the level of infill used in the MBTA's models for future growth. In addition to the ridership expected from existing conditions, 40% of the transit trips generated by new development in the plan area can be expected to use the Green Line rather than local bus services. This same variable is used to estimate pedestrian volumes during the PM peak hour when transit riders are accessing Union Square station.

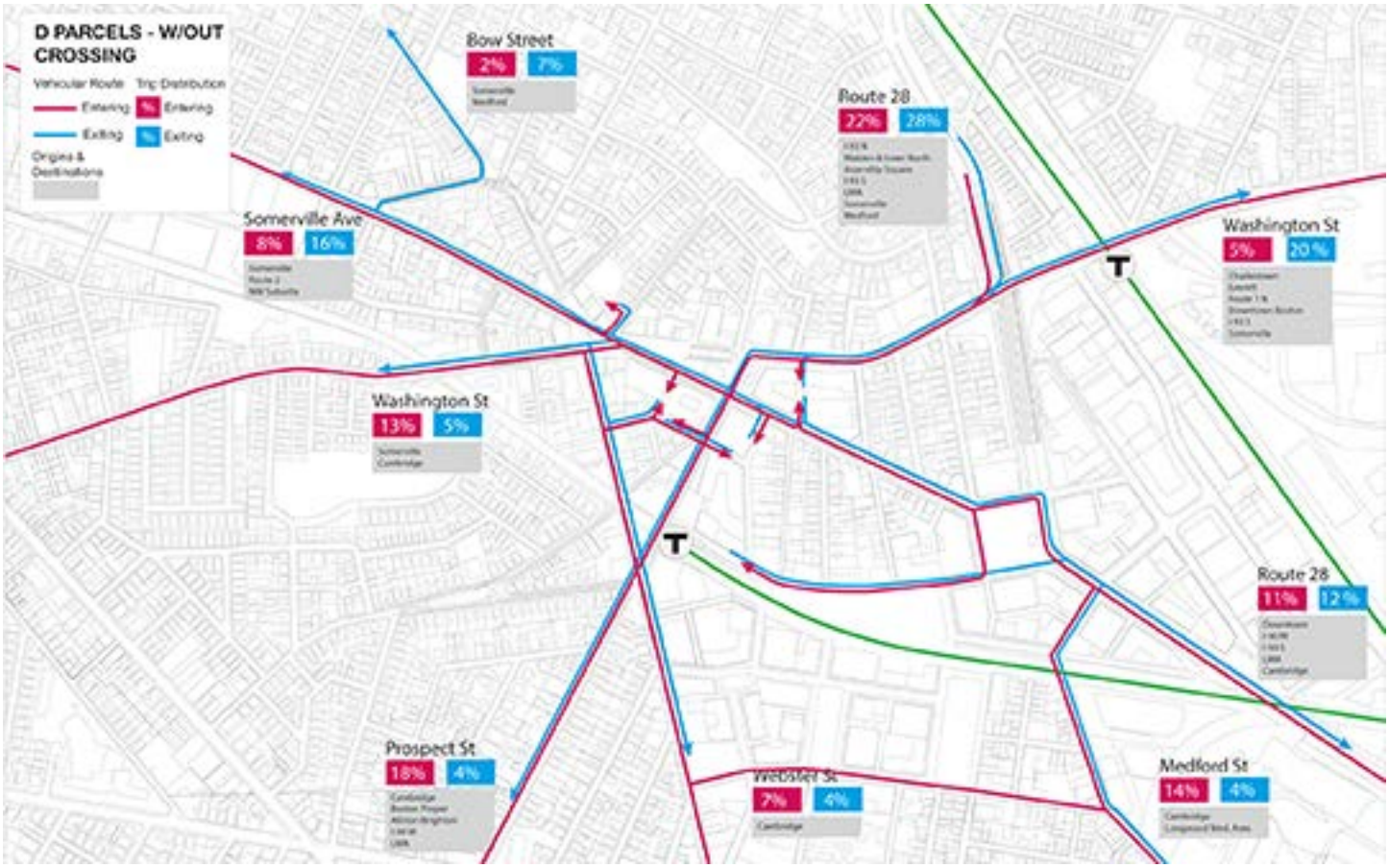
Almost 440 riders are expected to walk to and from development in Boynton Yards via Webster and Prospect Streets through the plaza at D2 to access Union Square station. An additional 100 riders are expected to walk primarily along Somerville Avenue and Washington Street

Pedestrian volumes at Union Square station and the D2 plaza will be higher than existing weekday counts recorded in Davis Square

along Prospect and through the plaza to the station site from the various 'scattered sites' located within walking distance. Using similar routes, another 280 riders are expected from the D Parcels. Together with the 928 riders expected from the existing neighborhood, pedestrian volumes in the D2 plaza during the PM peak hour are expected to exceed 1,650 people. As a result, pedestrian volumes at Union Square Station and the D2 plaza will be higher than existing weekday counts recorded at Davis Square's Holland Street head house of the Red Line.

BUILT CONDITION BICYCLING NEEDS

At full build out, new development in the Union Square plan area will generate an estimated 18,873 new bicycle trips. The need for both short and long term bicycle parking, long term bicycle storage, and shower facilities to accommodate employees and visitors that cycle as their primary means of transportation is best determined during development review of individual sites and sub areas as they are built out over time. The Mayor's Office of Strategic Planning and Community Development has recently proposed new bicycle


D PARCELS - W/OUT CROSSING
Vehicular Route
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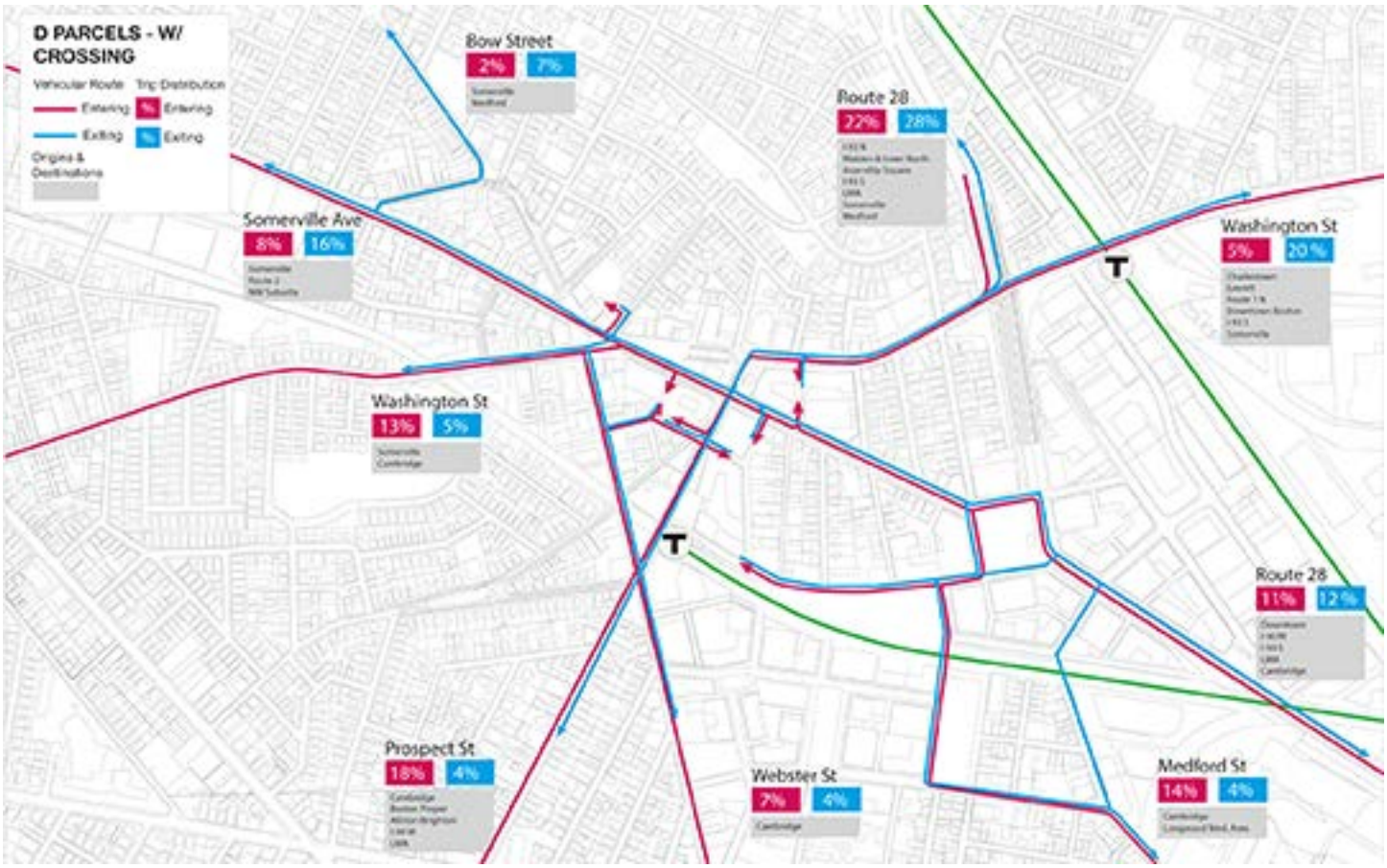
Longwood Med. Area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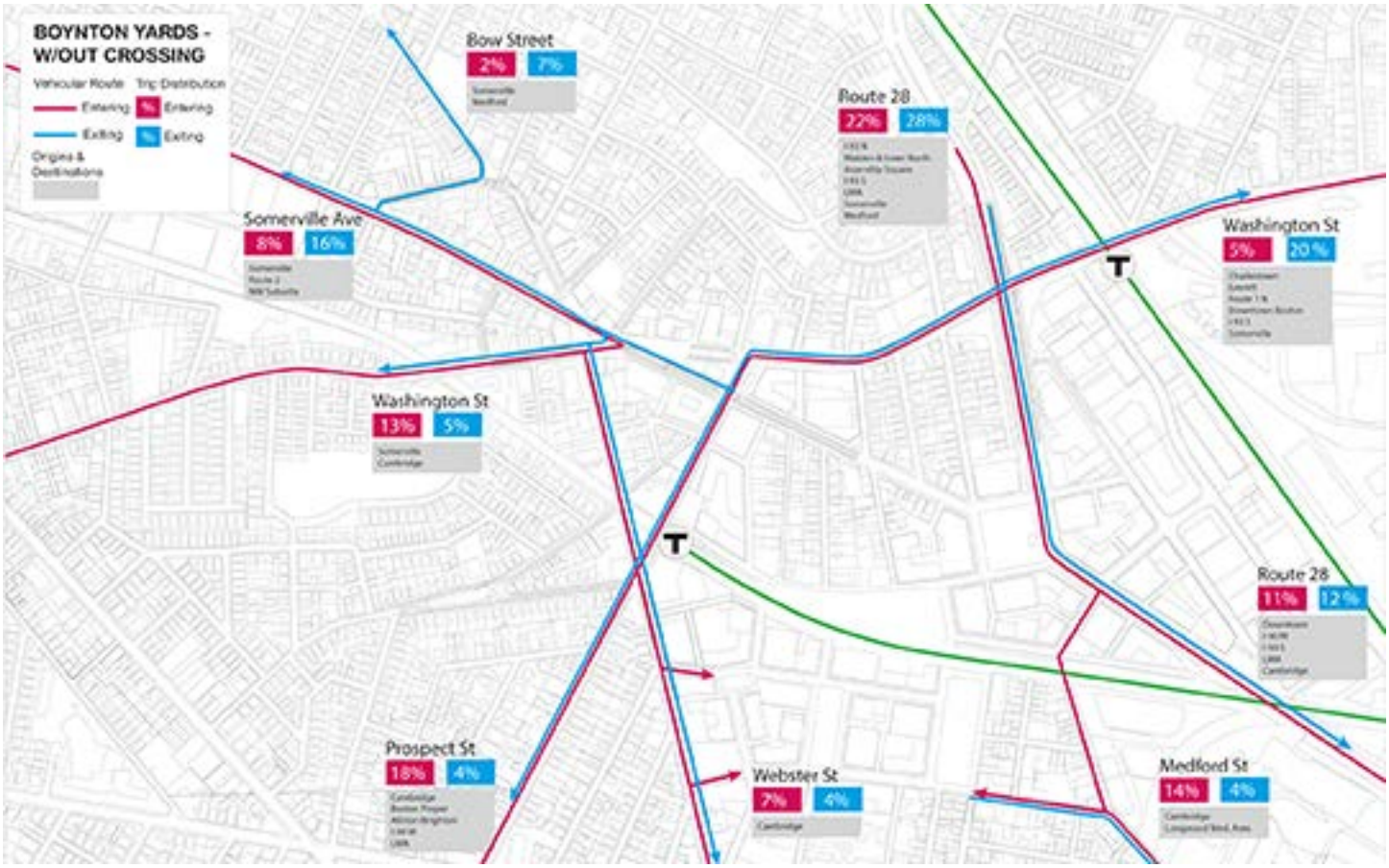
Longwood Med. Area


BOYNTON YARDS -
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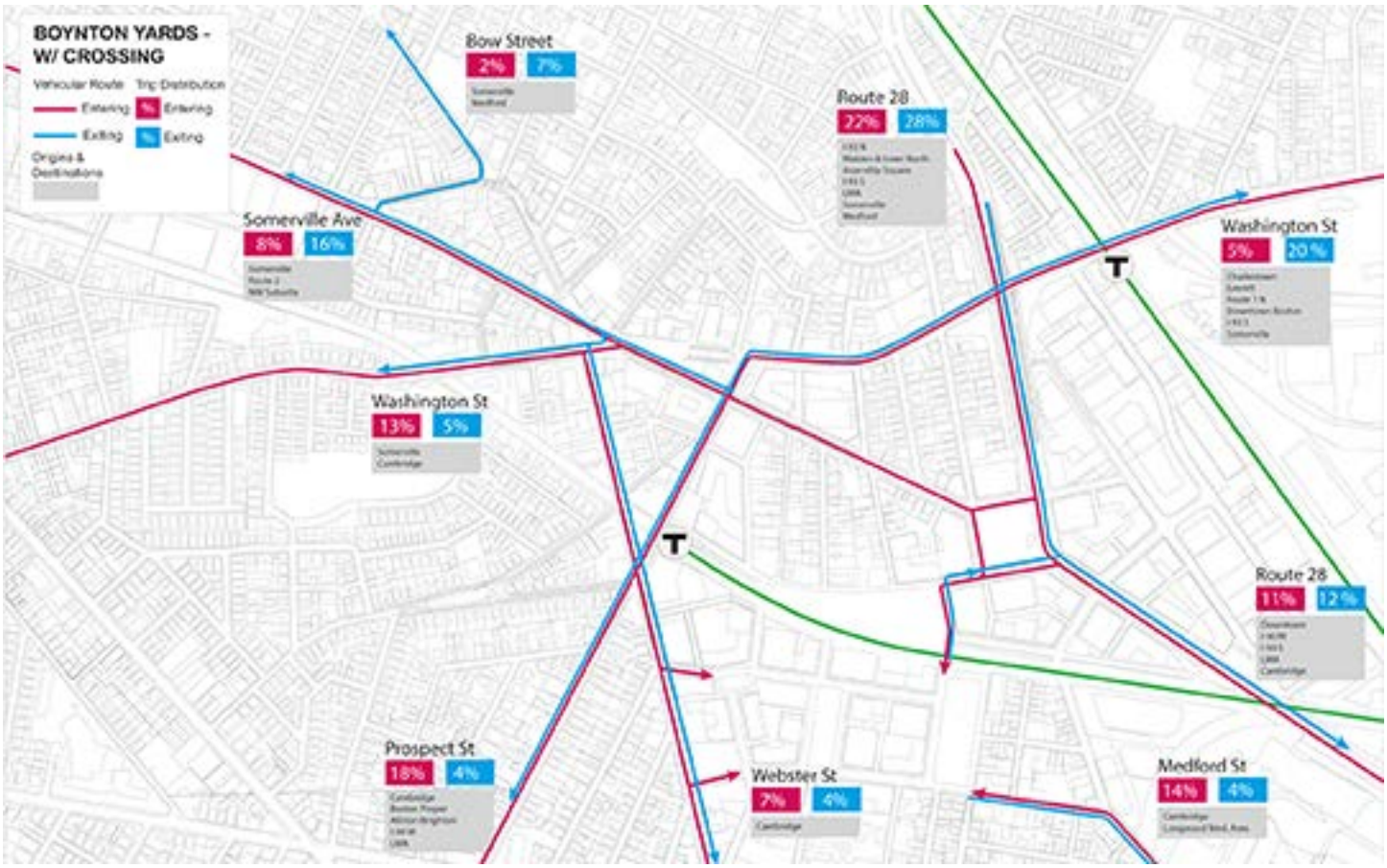
Cambridge
Longwood Med. Area


BOYNTON YARDS -
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Route 3
Mid-Suburbs
Washington St
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Charlestown
Lowell
Route 1 N
Downtown Boston
I-93 S
Somerville
Washington St
13%
5%
Somerville
Cambridge
T
Route 28
11%
12%
Downtown
I-90 W
I-93 S
UMA
Cambridge
Prospect St
18%
4%
Cambridge
Boston Proper
Allston-Brighton
I-90 W
UMA
Webster St
2%
4%
Cambridge
Medford St
14%
4%
Cambridge
Longwood Med. Area

parking regulations for the Somerville Zoning Ordinance that would bring the City on par with other municipalities such as Cambridge, MA and Portland, OR that have set national best practice for bicycle parking regulation.

In line with this new recommended policy, bicycle parking for new development in the Union Square plan area should accommodate both short and long term bicycle parking. Short-term bicycle parking is intended for customers of a business or visitors to a residence by providing a convenient and readily accessible place to park bicycles. Long-term bicycle parking is intended for residents or employees and provides security from theft and protection from the weather.

BUILT CONDITION PARKING DEMAND

The Union Square neighborhood plan addresses motor vehicle parking through a number of interrelated strategies:

- A parking management district and enterprise fund is recommended for Union Square and Boynton Yards to manage newly built parking facilities as one or more pooled sources of shared parking. At this time, it is still undetermined if the City, a parking management authority, a business improvement organization, a transportation management association, or a real estate investment trust will manage the district.
- Parking maximums are recommended in one form or another to incentivize transit-oriented travel behaviors and reduce automobile traffic and congestion by discouraging new residents and employees from driving. Regulations could include capping the total number of new parking spaces permitted for the plan area, maximums for residential uses within 1/2 mile and commercial uses within 1/4 mile of the new Union Square station, and minimum requirements for new development to provide shared or even publicly accessible parking spaces.
- All accessory parking spaces will be rented, leased, or sold as an option rather than a requirement of the rental, lease, or purchase of a dwelling unit or non-residential floor space. This is commonly referred to as 'unbundled' parking.
- Most accessory parking facilities are expected to be shared between new commercial and residential development in the plan area. For new residents that need an automobile, reverse commuter parking could be provided on a monthly basis Monday-Friday, for the evening and overnight hours, and all day Saturday and Sunday. Parking for family-oriented housing is likely to have dedicated parking spaces for each unit.
- Commercial uses and large residential buildings are expected to provide Mobility Management programs and services to employees and residents of new development.
- Parking for new ground floor retail and restaurant uses is accommodated through on-street spaces. No off street accessory parking is planned for these uses, except for the anticipated relocation of Target. New retail and restaurant uses will primarily provide convenience to the residents and employees of new development, rather than as regional attractions similar to Assembly Square.
- Redesign of Somerville Avenue between Washington/ Prospect and McGrath and the creation of a new street network in the 'greyfields' area around Target is estimated to create over 120 new on street parking spaces. Conceptual street network plans for Boynton Yards were estimated to create up to 200 on street parking spaces.

Union Square is a mixed-use, transit-oriented urban environment, even before the arrival of the Green Line. The physical and economic characteristics of the neighborhood reduce the need to drive to the point where each individual retail store, restaurant, office, and housing unit created by new development does not need its own dedicated supply of parking. Evidence of this relationship was found in the parking utilization data gathered from the plan area which found that on average over 700 on-street spaces go unused throughout the day. Implementation of the mobility policy recommendations of the neighborhood plan will further reduce the overall demand for parking and even allow new development to use parking facilities as a shared resource between multiple uses or buildings.

Based on Union Square's context and the mobility policies of the neighborhood plan, parking demand was estimated using a customized shared parking model developed by Nelson\ Nygaard based on the Urban Land Institute's (ULI) Shared Parking Manual (2nd Edition, 2005) and ITE's Parking Generation (4th Edition, 2010). This model accounts for the sharing of parking over the course of a day by different uses within a building, multiple buildings on the same block, and even multiple buildings in the same sub area. A detailed explanation of the shared parking model is provided in the Appendices.

Shared Parking Model Summary

	Peak Demand (Est.)		Planned Parking	
	Low	High	Off-Street	On-Street
Union Square	1,809	2,193	1,734	120
Boynton Yards	1,582	1,935	1,514	200
Total	**3,391**	**4,128**	**3,248**	**320**

In the development concepts explored for the D Parcels, the neighborhood plan identified parking structures on D1, D2, and D3 and a limited amount of shared surface parking on D7. For the 'Greyfield' area near Target and Boynton Yards, the neighborhood plan assumes one level of underground parking under most redevelopment blocks. This strategy is similar to how parking is being constructed at Fan Pier of Boston's Seaport District. As each new building is constructed, parking is phased in and connects with previously built parking of other buildings to create a larger shared resource under the entire block. In Union Square and Boynton Yards, a similar strategy could be used or underground parking for the entire block could be built first. Depending on how new streets are created, underground parking could be beneath the street system of these two areas as well. Outside of this strategy, above ground shared parking structures or multiple floors of underground parking would be necessary to meet demand.

BUILD CONDITION TRAFFIC OPERATIONS

A Multi-Modal Level of Service Analysis (MMLOS) of intersections and street segments was not completed for the neighborhood plan. A MMLOS analysis or an alternative that considers the needs of pedestrians and cyclists in addition to drivers should be included for development review as sites and sub-areas are built out over time. This level of analysis is more appropriate to inform potentially necessary improvements to the transportation system in the immediate context of each project. For the transportation analysis of this plan, the distribution of trips (by all modes) into the regional transportation system is more informative at this stage of collaborative planning between multiple property owners, agencies, and levels of government.

MAKING IT HAPPEN

TABLE OF CONTENTS

Now What?

Adopting and Amending the Neighborhood Plan

The definition of final is 'coming at the end of a series.' The series in this case is the Somerville*by*Design planning process. Are we really done, though? Of course not. The final Union Square Neighborhood Plan should also be viewed as another beginning.

A neighborhood plan document is the physical product of the neighborhood planning process. In Somerville, neighborhood plans are adopted by the Planning Board as an amendment and implementation appendix to the SomerVision Comprehensive Plan of the City of Somerville per M.G.L. Chapter 41, Section 81D of Massachusetts General Law. Adoption as part of the Comprehensive Plan means that the vision, goals, and objectives of a neighborhood plan are part of official City policy and provide guidance for decision makers and elected officials concerning policy and program proposals that impact the neighborhood.

Coming together as a community to think through challenges and solutions is just as important as publishing a document to record those efforts. The new relationships established during the process, knowledge gained, and activism instigated by the project will be pivotal to the implementation of this plan. The goals will only be accomplished if there is an active group of stakeholders that can transfer the knowledge gained from the planning process as members of the community come and go over time.

For this reason, neighborhood plans must also change and evolve, while providing strategic programs of action and support to neighborhood residents, property owners, and their supporters. The intention of this neighborhood plan is for it not to sit on the shelf or be static. Amending neighborhood plans with a 20 to 30 year implementation horizon is commonplace.

Implementation Priorities

This Plan will take a generation to implement. The following is a list of action items to be started immediately.

APPROVE ZONING AMENDMENT

The physical vision of the Union Square Neighborhood Plan does not reflect the zoning that is currently in place. To change zoning, whether for one lot, an entire district, or the whole city requires the same process. Most likely, a zoning amendment will be submitted modelled after the format of the Northpoint Special District. A zoning amendment requires a supermajority vote (8 of 11 votes) of the Board of Aldermen.

GET THE GREEN LINE ON TRACK

The Green Line Extension is mitigation from one of the largest public works projects in history, the Big Dig. It is a key to Somerville's economic development. The renewed commitment from the State to build the Green Line as well as a schedule for construction is essential for commercial investment in the plan area. The City will continue to work with the MBTA and MassDOT on a fiscally responsible solution to get the project delivered.

COMMUNITY BENEFITS PROCESS

With the help of LOCUS, the City and community currently have a better understanding of the priorities for community benefits. After the final LOCUS report, the developers in Union Square and Boynton Yards will understand the priorities of the community in achieving benefits for new development. Either through the redevelopment process or an alternative process established through zoning, each large-scale developer will be expected to contribute to community benefits as a part of their permitting process. A management system for these community benefits will be established for when US2 develops their benefits agreement.

NEIGHBORHOOD MARKETING

The City, specifically the Economic Development office, should continue working with US2, majority landowners, and other known developers in Union Square and Boynton Yards to increase efforts marketing the Square as a viable alternative for anchor institutions to Kendall Square and the Innovation District.

TARGET PARCELS FOR OPEN SPACE

Open space is created by zoning requirements and through zoning and city acquisition/renovation/reuse. The plan identifies 13.5 new acres of open space through private development and reclaiming wasted space. This is the majority of the SomerVision target except that another 1.5 acres is needed to reach the goal, this will be created by the city. Using the maps in the Open Space section of the plan, the City should actively pursue new parks to meet the SomerVision totals in underserved areas.

FINANCE INFRASTRUCTURE

We all want our toilets to flush. The sewer system from Union Square to the Mystic River outfall is at the end of its useful life. For major infrastructure projects, the City uses a Capital Investment Plan (CIP) to plan for large investments. The Union Square infrastructure is already

accounted for in the CIP; using the document, the Finance Office will create a borrowing strategy to best finance the infrastructure improvement. The project will be managed by the Transportation and Infrastructure office in OSPCD.

LANDOWNER SYMPOSIUM

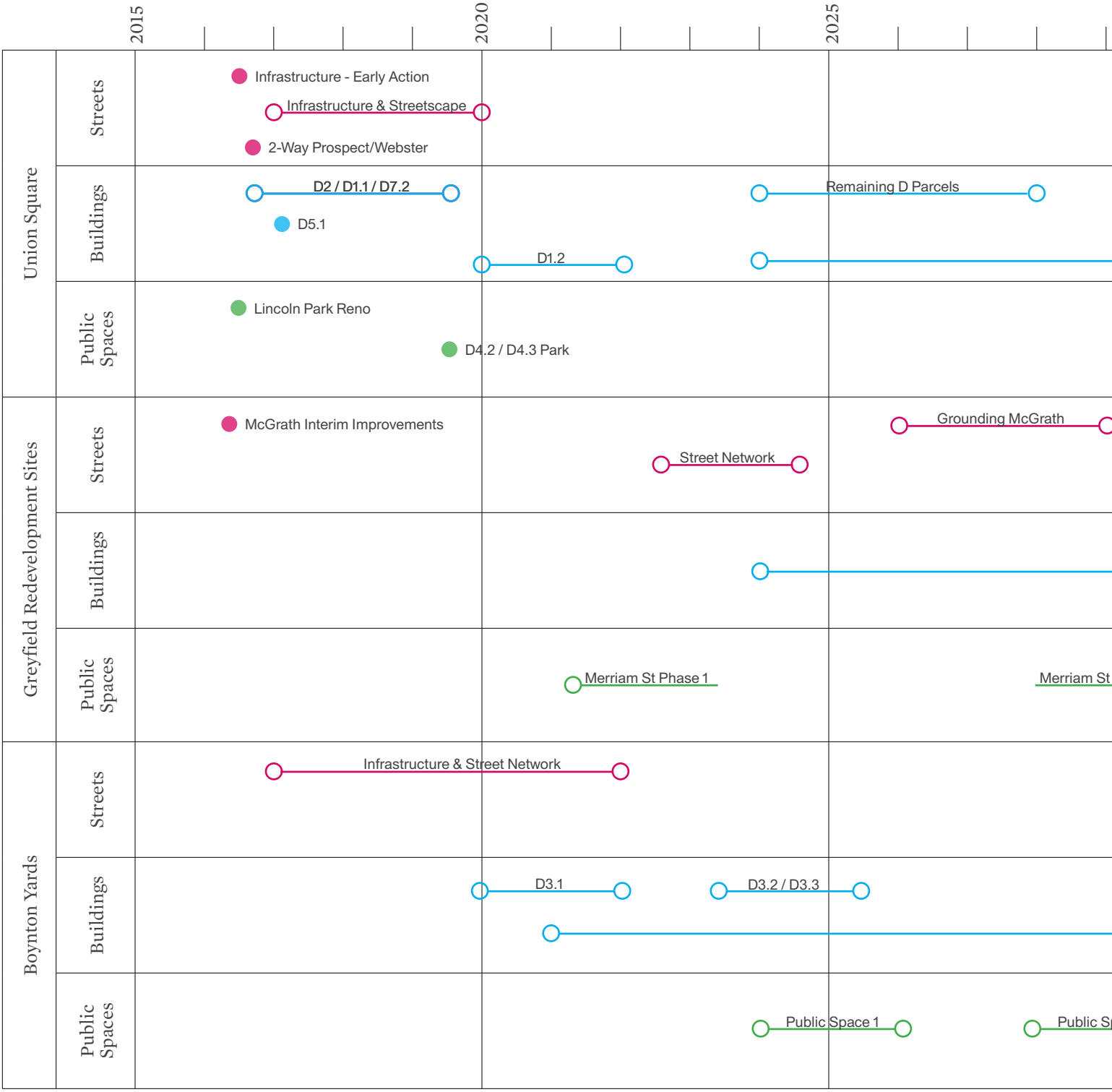
The development options for Boynton Yards and Greyfield Redevelopment Area portray the job creation, residential, and open space goals of SomerVision. However, the plans require coordination between landowners, including the City, to rectify the street grid, improve infrastructure, and create parcels worthy of development that meets our goals. At this time, some property owners are more ready to redevelop than others. The City needs to organize a symposium for all property owners to problem solve paths forward. Development cannot happen without cooperation.

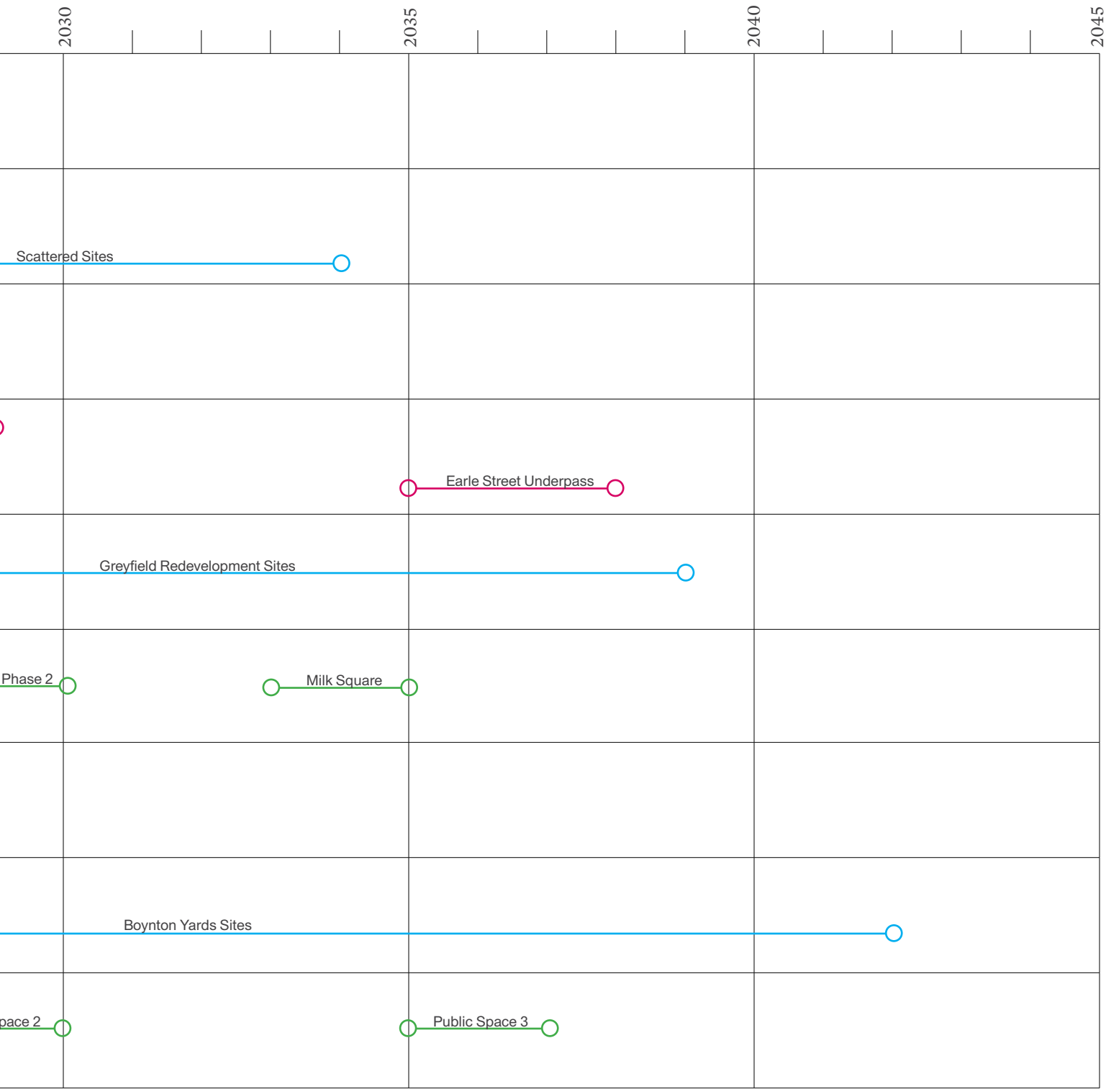
CREATE ONLINE PLATFORM FOR DEVELOPMENT

Development portals are interactive, online information platforms to serve as a single source of project information and online community engagement to complement in-person meetings. The online platform will provide US2 and other developers to quickly and easily disseminate accurate information and engage broader audiences than at meetings alone.

Timeline for Development

Physical Changes in the Union Square Plan Area




2030
2035
2040
2045
Scattered Sites
Earle Street Underpass
Greyfield Redevelopment Sites
Phase 2
Milk Square
Boynton Yards Sites
pace 2
Public Space 3

Implementation Table

Policy Changes in the Union Square Plan Area

		Policy Recommendation	Responsible Party & Partners	Funding	Timeline
A Vision for Economic Development	Develop an Innovation Ecosystem	Actively work to attract office and lab tenants from the life sciences, biotech, financial services, and technology fields to Union Square and Boynton Yards.	OSPCD Economic Development & US2	TBD	2016-
		Increase the supply of commercial office and lab space in the Union Square plan area.	OSPCD Planning & Zoning, OSPCD Economic Development, US2	-	2016-
		Actively pursue and incentivize at least one anchor institution to locate in the Union Square plan area.	OSPCD Economic Development, US2	-	2016-2020
		Support the development of place based infrastructure needed by high tech companies (energy, utilities, broadband, transportation options, etc.)	OSPCD Planning & Zoning, OSPCD Economic Development, Office of Sustainability, US2	TBD	2016-2022
		Facilitate the creation of non-traditional commercial spaces that are desirable to a variety of firms in different stages of their development.	OSPCD Planning & Zoning, OSPCD Economic Development, US2	TBD	2016-
	Practice Economic Gardening	Expand business development and technical assistance resources toward attracting and supporting Stage 2 businesses.	OSPCD Economic Development	General Fund, Grants	2016-
	Support Collaborative Workplaces	Establish an Arts & Creative Enterprise use category in the SZO that permits these new types of workplaces by-right in the Union Square plan area.	OSPCD Planning & Zoning	-	2016-2017
		Establish an Office use category in the SZO that permits co-working uses in addition to office, research & development, laboratory by-right in the Union Square plan area.	OSPCD Planning & Zoning	-	2016-2017
	Space=Work	Establish a "Fabrication District" in the SZO to protect buildings well suited for Arts & Creative Enterprise uses.	OSPCD Planning & Zoning	-	2016-2017
		Permit uses from the Arts & Creative Economy by-right within the Union Square plan area.	OSPCD Planning & Zoning	-	2016-2017
		Require 5% of commercial floor space to be set aside in new development for Arts & Creative Enterprise uses.	OSPCD Planning & Zoning	-	2016-2017
		Consider allowing required floor space for Arts & Creative Economy Uses to be consolidated and relocated from individual 'sending sites' to one or more 'receiving sites'	OSPCD Planning & Zoning	-	2016-2017
	Embrace Urban Agriculture	Relocate and potentially expand the South Street Urban Farm within Boynton Yards as part of redevelopment efforts.	OSPCD Planning & Zoning, OSPCD Transportation & Infrastructure, Groundwork Somerville	General Fund, state grants	2017

Necessary Resources/How	Potential Barriers	Communication Strategies	Milestone
Marketing Material showing the advantages to office space in the plan area			
	Change of market cycle		
Marketing Material showing the advantages to office space in the plan area	GLX construction schedule		
Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
			Site identified and acquired

		Policy Recommendation	Responsible Party & Partners	Funding	Timeline
A Vision for Economic Development	Support the International Markets	Continue to support the Somerville Arts Council's effort to highlight the markets of Union Square as a valuable resource to the community.	OSPCD Economic Development, Arts Council	General Fund, Grants	Continuous
		Consider a property tax exemption for non-formula grocery stores.	OSPCD Economic Development, Department of Finance	-	2018-2019
		Target resources from the Storefront Improvement Program to enhance the curb appeal of Union Square's international markets.	OSPCD Economic Development	General Fund, HUD Grants, US2 Small Business Grants	2016-2021
	Develop a Neighborhood 'Food Web'	Explore the creation of a physical space for market stalls and shared kitchens or kitchen incubator in Union Square.	OSPCD Economic Development	-	2017-2018
		Identify opportunities (both land and buildings) in the Union Square plan area suitable for new Community Gardens and Urban Farms.	OSPCD Transportation & Infrastructure	-	2016-
		Host a design competition with local artist/designers to develop flexible and movable planting beds.	OSPCD Transportation & Infrastructure	CPA	2018-2019
		Provide grant funding to help establish new start-up urban farms.	OSPCD Transportation & Infrastructure	CPA	2017-
		Develop a program to match growers to restaurants and value-added food producers.	OSPCD Economic Development	-	2017-2019
		Educate residents on ways to find other gardening opportunities like My City Gardens and YardShare.	OSPCD Transportation & Infrastructure	-	2017-
		Develop a management program for the City's community gardens and consider membership sunsetting provisions for unused community garden plots.	OSPCD Transportation & Infrastructure	-	2016-2018
		Consider property tax exemptions for properties with urban farms to help offset costs and reward putting underutilized land to productive use.	OSPCD Economic Development, Department of Finance	-	2018-2019
		Continue to support the Somerville Farm to School program.	OSPCD, Shape Up Somerville	-	Continuous

	Necessary Resources/How	Potential Barriers	Communication Strategies	Milestone
	Analysis of impact on City budget	City's need for more commercial tax base		
	Staff time to reach out to business and property owners	Store and property owners not interested or cannot afford upgrades matched by storefront improvement program	In-person	
		If land is identified, City has to have money accessible for aquisition		
			Social media	
		Resistance to create management program from existing stewards of community garden plots		Reduction in the number of people on community garden waiting list
	Analysis of impact on City budget	City's need for more commercial tax base		

		Policy Recommendation	Responsible Party & Partners	Funding	Timeline
A Vision for Equity	Understand Change as a First Step	Dedicate staff resources to analyzing and managing equitable change.	OSPCD Planning & Zoning	-	2016
	Engage in Neighborhood Integration	Establish a community relations committee of neighborhood residents and business owners from Union Square to function as a welcoming 'front porch' to new residents and businesses	OSPCD	-	2017
	Strengthen the Social Capital of Existing Local Institutions	Provide professional and technical assistance to neighborhood institutions.	Argenziano School, Somerville Community Corporation, St. Joseph's Church, St. Anthony's, among others	TBD	2017
	Mitigating Direct Displacement	Provide relocation assistance for existing businesses on the D Parcels.	OSPCD	General Fund	Continuous
		Consider an anti-displacement program for qualifying renter households with children.	OSPCD	-	
	Support the Autonomy of Existing Residences and Businesses	Consider providing rent stabilization vouchers for qualifying households.	OSPCD Housing	TBD	2017
		Continue the Closing Cost/Down Payment Assistance Program for qualifying households.	OSPCD Housing		Continuous
		Consider providing a property tax 'Circuit Breaker' or freezing property tax assessments for cost burdened households.	OSPCD Housing, Department of Finance	-	2017
		Require a tenant right of first refusal to purchase homes or buildings prior to sale to a third party.	OSPCD Housing, OSPCD Economic Development	-	2018
		Establish a first right purchase program that provides financial assistance to tenants exercising their first refusal rights.	OSPCD Housing, OSPCD Economic Development	TBD	2018
		Continue to fund small business assistance programs.	OSPCD Economic Development	-	Continuous
		Consider requiring minimum notification periods for commercial lease termination.	OSPCD Economic Development	-	Continuous
		Consider implementing a commercial lease renewal arbitration & mediation process for small businesses.	OSPCD Economic Development	TBD	2018
	Helping to Raise Real Incomes	Continue to advocate for the Job Creation and Retention Trust home rule petition with the State Legislature.	OSPCD Planning & Zoning	-	Continuous
		Partner with local colleges and universities to increase enrollment by Somerville residents.	Somerville Public Schools, Local Universities	-	Continuous
		Establish adult apprenticeship programs with businesses and institutions in the Union Square plan area.	OSPCD Economic Development	TBD	2018
		Help establish work study, internship, and apprenticeship programs for Somerville High School students with businesses in the Union Square plan area.	Somerville Public Schools, OSPCD Economic Development	TBD	2018
		Establish a Non-Profit Workforce Education Center in the Union Square plan area that also links residents to potential job opportunities.	OSPCD Economic Development, area non-profits	-	2018
		Require businesses to check in with the Workforce Education Center for qualified candidates for open positions prior to being publicly advertised.	OSPCD Economic Development	-	2017-

	Necessary Resources/How	Potential Barriers	Communication Strategies	Milestone
	Staff time to research baseline to monitor change in future conditions			
	Staff time to organize committee and support until self sustaining			
	Funding needed, whether grant or city budget, to provide stabilization vouchers			
	Analysis of impact on City budget			
	Funding for mediator			
				State legislature approval of home rule petition

		Policy Recommendation	Responsible Party & Partners	Funding	Timeline
A Vision for Equity	Level the Playing Field	Conduct a Small Business Needs Assessment survey to identify priority needs for small business technical assistance services.	OSPCD Planning & Zoning	-	2016
		Increase the supply of retail space, including 'off main street' and second floor spaces in the Union Square plan area.	OSPCD	-	2017
		Consider adopting a Vacant Property Resitration Ordinance in teh City's Municipal Code of Ordinances.	Argenziano School, Somerville Community Corporation, St. Joseph's Church, St. Anthony's, among others	TBD	2017
		Limit the storefront width of first floor uses over 10,000 square feet in floor area in the SZO so that they are lined by other active establishments.	OSPCD Planning & Zoning	General Fund	Continuous
		Consider requiring a Special Permit for formula businesses in Union Square in the SZO	OSPCD Planning & Zoning	-	
	Lowering the Barriers to Entry	Establish business licensing programs for street vendors, food trucks, adn micro-retailers in the Union Square plan area.	OSPCD Housing	TBD	2017
		Continue to support the ongoing work of Union Square Main Streets and Somerville Local First.	OSPCD Housing		Continuous

	Necessary Resources/How	Potential Barriers	Communication Strategies	Milestone
	Staff time to research baseline to monitor change in future conditions			
	Staff time to organize committee and support until self sustaining			
	Funding needed, whether grant or city budget, to provide stabilization vouchers			

		Policy Recommendation	Responsible Party & Partners	Funding	Timeline
A Vision for the Public Realm	Regulating for New Spaces	Establish Civic Space Types in the SZO, with different design standards for each different type of space.	OSPCD Planning & Zoning	n/a	2016-2017
		Establish a 15% useable open space requirement for the D Parcels in the SZO.	OSPCD Planning & Zoning	n/a	2016-2017
		Preserve the Concord Avenue community space in the D4 Parcel.	OSPCD Planning & Zoning		Timed with redevelo of D4
		Consider allowing required usable open space for the D Parcels to be consolidated and relocated from individual sending sites to one or more receiving sites.	OSPCD Planning & Zoning	n/a	
		Require 15% of the land in transformational areas to be designed as civic space in the SZO.	OSPCD Planning & Zoning	n/a	2016-2017
		Require transformational areas to provide at least two types of civic space and prioritize the creation of spaces with a high percentage of landscaping.	OSPCD Planning & Zoning	n/a	2016-2017
	Land Purchases and/or Easements	Acquire the 35 Charlestown Street property from the MBTA for a new park.	OSPCD Transportation & Infrastructure	City, CPA, Grants	2016-2021
		Secure easements from the MBTA and property owners in Boynton Yards abutting the Fitchburg rail line for a new community path.	OSPCD Transportation & Infrastructure	City, CPA, Grants	2018-2038
	Get more from our streets	Redesign the major streets of Union Square using a pedestrian first modal hierarchy to rebalance their design for all users as complete streets.	OSPCD Transportation & Infrastructure	City and grants	2016-2022
		Redesign the major intersections in the Union Square plan area to gain access to currently underutilized street space for new plazas.	OSPCD Transportation & Infrastructure	City, and State & Federal Grants	2017-
		Reclaim underutilized space in and around Union Square Plaza and Concord Square to expand those spaces.	OSPCD Transportation & Infrastructure	City, and State & Federal Grants	2017-
		Study the feasibility of converting Bow Street into a shared space.	OSPCD Transportation & Infrastructure	City, and State & Federal Grants	2017-
		Require redevelopment in Boynton Yards to design a portion of the new street network as shared streets in the SZO.	OSPCD Transportation & Infrastructure, OSPCD Planning & Zoning	City, and State & Federal Grants	2017-
	Adopt a New Project Delivery Model	Utilize low cost, short term pilot projects to demonstrate future possibilities for street redesigns.	OSPCD Transportation & Infrastructure	City, grants	2016-

	Necessary Resources/How	Potential Barriers	Communication Strategies	Milestone
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted
pment				
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
		MBTA relinquishing of land, Cost		Inclusion in CIP
				Inclusion in CIP
		Metrics used in street design/ engineering do not prioritize pedestrians and cyclists		Completion of Union Square Infrastructure means that streetscape project can begin. Completion of Union Square streetscape project

		Policy Recommendation	Responsible Party & Partners	Funding	Timeline
A Vision for the Public Realm	Public Involvement in Space Design	Require Design Review for any new public space built as a result of redevelopment.	OSPCD Planning & Zoning	-	2016-2017
		Establish a cost effective, public engagement methodology for the design and programming of public spaces focused on placemaking.	OSPCD Transportation & Infrastructure	n/a	2016-
		Identify the programmatic requirements, activities, uses, and events that each public space will need to accommodate during planning and design phases	OSPCD Transportation & Infrastructure	n/a	2016-
	Enhance the Pedestrian Experience	Establish street design standards in the SZO for redevelopment areas.	OSPCD Planning & Zoning, Transportation & Infrastructure	-	
		Establish block size standards in the SZO for redevelopment areas.	OSPCD Planning & Zoning	-	2016-2017
		Establish Pedestrian Street standards in the SZO for street segments where active street life is desired.	OSPCD Planning & Zoning	-	2016-2017
		Adopt a Street Life Ordinance in the City's Municipal Code that streamlines the use of the right-of-way for public life enhancements.	SomerStat	-	2017
		Continue the Neighborhood Street Reconstruction Program to repair priority sidewalks and curb ramps in the Union Square plan area.	Engineering	General Fund	2016-
	Remember our Elders	Recalibrate pedestrian crossing times to 3 feet per second for all signalized intersections in the Union Square plan area.	Traffic & Parking, OSPCD Transportation & Infrastructure	-	2019-2022
		Expand the scope of the Neighborhood Street Reconstruction Program to include improvements for seniors.	Engineering	-	2016-
		Consider the needs of seniors in streetscape design projects, paying particular attention to providing inviting places to sit.	OSPCD Transportation & Infrastructure	-	2016-
	Add Art to the Public Realm	Partner with the MBTA and MassDOT to plan, design, and install Somerville-sourced art installations at the Union Square Green Line Station	OSPCD Transportation & Infrastructure, Arts Council	Grants	2017-
		Release a Request for Information (RFI) to learn what public realm furnishings and features could be designed and fabricated by local vendors.	OSPCD Transportation & Infrastructure	-	2019
		Establish a Mural Arts Program to fund the creation and maintenance of murals in Union Square.	Arts Council	TBD	2017-
		Include public art installations in the new public spaces created in the Union Square plan area.	OSPCD Planning & Zoning, OSPCD Transportation & Infrastructure, Arts Council	Grants, Private, City	2016-
		Collaborate with Eversource to screen the electric distribution substation on Prospect Street with public art.	OSPCD Transportation & Infrastructure, Arts Council, US2	TBD	2017-2020
		Consider dedicating 1% of the annual Capital Improvement Plan for Public Art.	SomerStat		2018

	Necessary Resources/How	Potential Barriers	Communication Strategies	Milestone
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Staff time to write the ordinance	Board of Alderman approval required		
			Engaging seniors specifically at their place of residence	
		Design must be respectful of the needs of an active electrical distribution facility		

		Policy Recommendation	Responsible Party & Partners	Funding	Timeline
A Vision for Housing	Expand Inclusionary Zoning	Increase the Inclusionary Zoning percentage to 20% for new development within 1/4 mile of the future Union Square station	OSPCD Planning & Zoning, OSPCD Housing	-	2016-2017
		Expand the scope of Inclusionary Zoning to produce units priced for moderate and middle income households (ie. workforce housing)	OSPCD Planning & Zoning, OSPCD Housing	-	2016-2017
		Set the price requirements for newly built affordable housing to better match the needs of existing Somerville residents identified in the Housing Needs Assessment	OSPCD Housing	-	2016-
		Consider giving preference to Union Square renters that are severely cost-burdened when selecting a household for City-managed inclusionary housing units	OSPCD Housing	-	2016-
	Prioritize On-Site ADU's	Prioritize the construction of on-site inclusionary housing units in the SZO	OSPCD Planning & Zoning, OSPCD Housing	-	2016-2017
		Consider allowing inclusionary housing to be provided off-site by Special Permit in the SZO	OSPCD Planning & Zoning, OSPCD Housing	-	2016-
		Consider allowing a payment in-lieu of providing inclusionary units by Special Permit in the SZO	OSPCD Planning & Zoning, OSPCD Housing	-	2016-
		Include the cost of land acquisition when establishing a payment in-lieu of providing on-site affordable housing	OSPCD Planning & Zoning, OSPCD Housing	-	2016-
	Preserve Existing ADU's	Collaborate with property owners to extend expiring affordability restrictions.	OSPCD Housing	-	2017-
		Monitor the status of properties with temporary affordability restrictions.	OSPCD Housing	-	2017-
	Produce Family-Oriented Housing	Require the creation of multi-bedroom affordable units in larger redevelopment projects through Inclusionary Zoning.	OSPCD Planning & Zoning, OSPCD Housing	-	2016-2017
		Seek commitments from developers to build enough multi-bedroom units to achieve the family-housing targets in this plan.	OSPCD Planning & Zoning, OSPCD Housing	-	2016-
		Support the creation of voluntary programs to allow current Somerville property owners to convert their existing housing into deeded family housing	OSPCD Housing, Somerville Housing Authority, & Community Development Corporations	-	2017-
	Family Housing is for Families	Establish Design Guidelines for Family Housing that build upon similar work completed by Vancouver	OSPCD Housing	TBD	2017-2018
		Adopt minimum floor space requirements for units with 3 or more bedrooms.	OSPCD Planning & Zoning, OSPCD Housing	OSPCD Planning & Zoning, OSPCD Housing	2017-2018
		Seek commitments from developers to restrict the sale or rental of multi-bedroom units to family-oriented households.	OSPCD Planning & Zoning, OSPCD Housing	-	2016-

	Necessary Resources/How	Potential Barriers	Communication Strategies	Milestone
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Housing Needs Assessment updated every 5 years	Funding for HNA		Adopt housing policy
	-	Fair Housing Laws that do not allow local preference		Adopt housing policy
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Engage stakeholders including developers, in particular US2 and CDC's, on benefits and disadvantages of policy	Community acceptance, Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Engage stakeholders including developers, in particular US2 and CDC's, on benefits and disadvantages of policy units.	Community acceptance, Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	-	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Research of how program could benefit property owners. Staff time for outreach.	Unwillingness of property owners	Direct outreach to property owners	Each restriction extended
	Staff time to create system to monitor	--	-	-
	-	Board of Alderman approval required	-	Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	-	Market-driven resistance by the development community to multi-bedroom family units	-	
	Staff time to support the research and analysis of programs by others	-	-	Creation of Program
	Possible funding for consultation by architect/design team			Adoption of Guidelines
	Based off of design guidelines			Adoption of Design Guidelines
		Market-driven resistance by the development community to limit sales options. Fair Housing laws.		

		Policy Recommendation	Responsible Party & Partners	Funding	Timeline
A Vision for Development	Preserve Our Built Heritage	Finish surveying Union Square's existing buildings to determine their historical significance.	Public Archeology Lab, OSPCD Planning & Zoning	Previously funded with matching grant from MHC	2015-2016
		Enact a new local historic district for the core of Union Square to protect contributing buildings.	OSPCD Planning & Zoning	n/a	2017-2018
	Assist with Historic Rehabilitation	Utilize Community Preservation Act funding to help property owners maintain Union Square's historic buildings.	OSPCD Planning & Zoning	CPA	2016-
		Provide technical assistance to property owners seeking Massachusetts Historic Rehabilitation Tax Credits.	OSPCD Planning & Zoning	n/a	2016-
		Investigate restoring the historic cupolas and steeples of USQ buildings such as St. Joseph's Church and the old fire station (now SCATV).	OSPCD Planning & Zoning	CPA, grants, private funds	2016-
	Context Sensitive Infill	Increase the required side setbacks for properties directly abutting a designated Local Historic District.	OSPCD Planning & Zoning	n/a	2016-2017
		Consider contextual front setbacks for properties directly abutting a Local Historic District.	OSPCD Planning & Zoning	n/a	2016-
	Introducing New Building Types	Establish building type standards in the SZO based on the development objectives of this plan.	OSPCD Planning & Zoning	n/a	2016-2017
		Require development to be consistent with SomerVision and the Union Square Neighborhood Plan.	OSPCD Planning & Zoning, Planning Board	n/a	2016-
	Context Sensitive Façade Design	Establish minimum design standards for facade articulation in the SZO	OSPCD Planning & Zoning, Planning Board, DRC	n/a	2016-2017
		Establish minimum design standards for storefronts in the SZO.	OSPCD Planning & Zoning, Planning Board, DRC	n/a	2016-2017
		Require Design Review for significantly sized buildings.	OSPCD Planning & Zoning	n/a	Continuous
	Architectural Design Diversity	Ensure that the full diversity of architecture firms on the US2 development team are used for the D Parcels and beyond.	OSPCD Planning & Zoning, US2	n/a	2016-
	Honor the Prospect Hill Landmark	Promote the Prospect Hill Monument in historic tours, streetlight banners, and other marketing materials.	OSPCD Planning & Zoning, Somerville Arts Council, Union Square Main Streets	TBD	2016-
		Install sidewalk medallions to identify views of Prospect Hill Monument from various locations throughout Union Square.	OSPCD Transportation & Infrastructure, Capital Projects	TBD	2018-2020
	Creating an Iconic Skyline	Require large redevelopment projects to submit context analysis and skyline view studies for development review.	OSPCD Planning & Zoning	n/a	2016-
		Ensure Design Review considers how tall buildings provide for a variety in detail and texture to the skyline.	OSPCD Planning & Zoning	n/a	2016-
	Include Architectural Cues at Terminated Vistas	Require buildings to have architectural articulation that visually responds to locations identified on the Terminated Vistas map.	OSPCD Planning & Zoning, DRC	n/a	2016-
		Require public spaces to include a monument or other form of landmark at locations identified on the Terminated Vistas map.	OSPCD Transportation & infrastructure	Include in budget for public spaces when funded by City	2016-

	Necessary Resources/How	Potential Barriers	Communication Strategies	Milestone
	n/a	n/a	n/a	Completed surveys submitted to MHC
	Staff time to write study reports and coordinate outreach	Outreach to existing property owners about the benefits of National Register designation	Direct call/mail to arrange meeting with owners. Public meetings.	
	Establishment of application and review process and staff time to assist property owners	n/a	Direct outreach to LHD property owners	
	Training for staff	n/a	Marketing through email/website that this service is available	
	Staff time to work with architects and contractors	Property Owners	Direct outreach to property owners	
	n/a	Board of Alderman approval required		
	n/a	Board of Alderman approval required		
	Zoning Amendment	Board of Alderman approval required		Union Square Zoning Amendment Adopted
	Staff time in case review	n/a		Planning Board endorsement of Plan
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Design Review Committee/Urban Design Commission			Zoning Overhaul Adopted
				Submission of plans from different firms
	Staff time and funding for materials			Installation/distribution of marketing materials
	Staff time to review and include in drawings of Union Square Streetscape work scope	Cost of detail		Installation of medallions
	Staff time to review			Updated application form requirements
	Design Review Committee/Urban Design Commission			
	Zoning Amendment			Zoning Adopted
	Zoning Amendment			Zoning Adopted

		Policy Recommendation	Responsible Party & Partners	Funding	Timeline
A Vision for Development	Rezoning Union and Boynton	Adjust existing districts as needed to reflect the recommendations of the Union Square Neighborhood Plan.	OSPCD Planning & Zoning	n/a	2016-2017
		Establish a Commercial Core Zoning District for properties where only commercial development is desired.	OSPCD Planning & Zoning	n/a	2016-2017
		Create a development review process to facilitate the coordinated redevelopment of the seven D Parcels.	OSPCD Planning & Zoning	n/a	2016-2017
		Establish special districts to regulate the redevelopment of Boynton Yards and the area surrounding Target (e.g. 'Milk Square').	OSPCD Planning & Zoning	n/a	2016-2017
	Options for Union Square East	Remap the nine properties on the west side of Allen Street into an Urban Residential zoning district.	OSPCD Planning & Zoning	n/a	2016-2017
		Develop city-wide standards that ensure the scale of development, vehicular access, and street design promote pedestrian safety and context sensitive infill.	OSPCD Planning & Zoning	n/a	2016-2017
		Support residents seeking zoning map changes for pocket neighborhoods as context changes around them.	OSPCD Planning & Zoning	n/a	2016-
	Sustainable Design	Adopt a performance based landscape requirement like the Seattle Green Area Ratio in the SZO.	OSPCD Planning & Zoning	n/a	2016-2017
		Require new buildings to be environmentally responsible and resource efficient.	OSPCD Planning & Zoning, Office of Sustainability & Environment	n/a	2016-2017
		Permit Green Roofs and Renewable Energy Production Systems by-right in the SZO.	OSPCD Planning & Zoning	n/a	2016-2017
		Require large parking structures to be Electric Vehicle ready.	OSPCD Planning & Zoning	n/a	2016-2017
	Fixing the Sewers	Secure funding for the Capital Improvements necessary to improve the stormwater infrastructure in the Union Square Plan Area.	OSPCD Transportation & Infrastructure, Department of Finance, Capital Projects, Engineering	TBD – Will include city funding and grants	2016
	Lessening Stormwater's Impact	Adopt a Stormwater Management Ordinance in the City's Municipal Code as replacement for Permeable Surface requirements in zoning	OSPCD Transportation & Infrastructure, Office of Sustainability & Environment, Engineering	n/a	2017
		Encourage depaving activities that reduce the amount of impermeable surfaces on residential lots, municipally owned properties, and public spaces.	OSPCD Transportation & Infrastructure, Office of Sustainability & Environment, Capital Projects	n/a	2017

	Necessary Resources/How	Potential Barriers	Communication Strategies	Milestone
	Zoning Amendment	Board of Alderman approval required		Union Square Zoning Amendment Adopted
	Zoning Amendment	Board of Alderman approval required		Union Square Zoning Amendment Adopted
	Zoning Amendment	Board of Alderman approval required		Union Square Zoning Amendment Adopted
	Zoning Amendment	Board of Alderman approval required		Zoning Overhaul Adopted
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Zoning Overhaul	Board of Alderman approval required		Zoning Overhaul Adopted
	Zoning Amendment	Board of Alderman approval required		
	Zoning Overhaul	Board of Alderman approval required		Zoning Overhaul Adopted
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Zoning Amendments/Overhaul	Board of Alderman approval required		Union Square Zoning Amendment Adopted, Zoning Overhaul Adopted
	Staff time	Cost		
	Staff time			
	Staff time	Labor costs		

		Policy Recommendation	Responsible Party & Partners	Funding	Timeline
A Vision for Mobility	Establish Mode Priorities	Prioritize pedestrian first modal hierarchy for all transportation projects and programs, from scoping to maintenance.	OSPCD Transportation & Infrastructure	-	Continuous
	A Green Light for 2-Way Streets	Convert Somerville Avenue, Prospect Street, and Webster Street to two-way traffic flow.	OSPCD Transportation & Infrastructure	TBD but will include general fund, bonds, and grants	2016-2022
	Embrace Protected Bikeways	Prioritize the construction of protected bikeways on major streets when feasible within the right-of-way.	OSPCD Transportation & Infrastructure	TBD	2018-
		Install bike traffic lights for cyclists at appropriate intersections.			
		Implement Bicycle Boulevards in neighborhoods where appropriate.	OSPCD Transportation & Infrastructure, Neighborway Activists	TBD	2017-
		Establish a formal process for residents to establish a Neighborway, Playborhood, or PlayStreet.	OSPCD Transportation & Infrastructure	TBD	2017-
	Introduce Visual Friction	Install, monitor, and evaluate the effectiveness of interim traffic calming techniques on problematic neighborhood streets in the Union Square plan area.	OSPCD Transportation & Infrastructure, Traffic & Parking	General fund	2018-
		Conduct a physical survey of problematic neighborhood streets in the Union Square plan area to accurately map curb cuts, existing street trees, and existing on street parking.	OSPCD Transportation & Infrastructure, Traffic & Parking	-	2017-
		Opportunistically convert problematic neighborhood streets in the Union Square plan area into 'yield streets' when possible.	OSPCD Transportation & Infrastructure, Traffic & Parking	-	2018-
	Prioritize Safe Routes to School	Prioritize streetscape and street design improvements for safe routes to school in the Union Square plan area.	OSPCD Transportation & Infrastructure, Engineering, Traffic & Parking, Somerville Public Schools	TBD - will include general fund, bonds, and grants	Continuous
	Adopt a 20-Is-Plenty Campaign	Petition the legislature to allow a reduction of the speed limit to 20 miles per hour.	Somerville Board of Aldermen	-	After mobility plan
	Implement Mobility Management	Establish requirements for new commercial and multi-tenant residential development to implement Mobility Management policies and programs in the SZO.	OSPCD Planning & Zoning	-	2016-2017
		Create a Transportation Management Association for Union Square and Boynton Yards to efficiently manage and market mobility programs and services for members.	OSPCD Transportation & Infrastructure	-	2020
	Adopt Transit Oriented Parking Standards	Adopt new parking standards in the SZO for transit oriented properties in the Union Square plan area.	OSPCD Planning & Zoning	-	2016-2017
		Consider establishing parking maximums instead of conventional minimum parking standards for transit-oriented development in the Union Square plan area.	OSPCD Planning & Zoning	-	2016-

	Necessary Resources/How	Potential Barriers	Communication Strategies	Milestone
	-	-	-	
	-			Conversion of streets listed
	-	Resistance of property owners abutting right-of-way. Resistance of community members.		Construction of first separated facility on Beacon Street
		Resistance of property owners	Early outreach to residents of preferred bike boulevard location	
	Staff time to research and create process for neighborway, playborhood, and playstreet regulation			
	Staff time and funding to design, install (or contract to install), and evaluate calming techniques	After interim pilot, getting to reconstruction		First pilot project
	Staff time to conduct survey and finalize results			
	Funding if more than striping and signage changes are needed	Resistance from property owners		
	Staff time to prepare home rule petition	Requires local and state legislative action	Organize constituent advocacy	Passing of home rule petition
	Zoning Amendment/Overhaul			
	Likelihood of new staff needed for management programs			
	Zoning Amendment/Overhaul	Delivery date of Union Square Station		
	Zoning Amendment/Overhaul			

		Policy Recommendation	Responsible Party & Partners	Funding	Timeline
A Vision for Mobility	Utilize Shared Parking	Permit shared parking between uses and buildings in the Union Square plan area	OSPCD Planning & Zoning	-	2016-2017
	Metering Parking for Turnover	Consider limits on the length of stay for metered parking spaces to induce short term turnover.	Traffic & Parking	-	2016-
		Consider varying metered parking rates based on the length of stay to induce short term turnover (1st hour = $1, 2nd hour = $2, etc)	Traffic & Parking	-	2016-
	Residential Parking Permits (RPPs)	Consider restricting the availability of on-street parking permits for residents of new transit-oriented development.	Traffic & Parking	-	2106-
		Consider whether it is still appropriate for on-street parking permits to be used city-wide.	Traffic & Parking	-	2018-
	Demand Based Pricing	Conduct a curbside parking management study to determine the logictics and costs necessary to implement demand based pricing for on street parking in Union Square	Traffic & Parking	-	2018-
	Parking Management Districts	Investigate the creation of a parking management district and enterprise fund to finance the construction and operation of municipal parking structures in the Union Square plan area.	OSPCD Transportation & Infrastructure, Department of Finance, Capital Projects, Traffic & Parking	-	2017-2019
		Reinvest parking meter revenues for transportation improvements in the parking management district established for Union Square.	Traffic & Parking, Department of Finance	-	2018-
	Deliver the Green Line Extension	Continue to work collaboratively with MassDOT and the MBTA to devlop an appropriate solution to the current cost overruns.	OSPCD Transportation & Infrastructure	-	Continuous
	Invest in Bike Share	Require development projects to provide and maintain service agreements for new Hubway stations strategically located throughout the Union Square plan area.	OSPCD Planning & Zoning, OSPCD Transportation & Infrastructure	Funded by developers	Continuous
		Locate a Hubway station at or across the street from the Union Square station.	OSPCD Transportation & Infrastructure	TBD	Station Opening
	Invite Worker Shuttles	Encourage private services such as Bridj to provide service to Union Square from other locations in the region.	OSPCD Transportation & Infrastructure, Chamber of Commerce	TBD	
		Encourage employers to operate shuttle services to employment locations outside of a 1/4 mile from teh future Union Square Station.	OSPCD Transportation & Infrastructure, Chamber of Commerce, Employers	-	
	Advocate for the "Yellow Line"	Collaborate with key stakeholders in the Greater Boston area to conduct a feasibility study for introducing passenger transit along the existing Grand Junction rail line as well as an off-street multi-modal path.	OSPCD Transportation & Infrastructure	TBD	2018-
		Engage in a value capture study along the Grand Junction line to determine the viability of privately funding the creation of the stations, passenger rolling stock, and ancillary facilities.	OSPCD Transportation & Infrastructure	TBD	2018-
		Review future transit projects with the Department of Capital Projects to ensure that any infrastructure investment does not preclude transit expansion.	OSPCD Transportation & Infrastructure, Capital Projects	-	2016-

	Necessary Resources/How	Potential Barriers	Communication Strategies	Milestone
	Zoning Amendment/Overhaul			
		Resistance of residents	Communication that parking is a shared resource	
		Resistance of residents	Communication that parking is a shared resource	
	Staff time to reseach, investigate, and report	Constraints on municipal finance		
	Staff time to collaborate			
				Increase in Hubway stations
		Could require funding for new station		

The Development Permitting Process

Coordinated Development and Neighborhood Development Plans

Zoning is the most significant regulation that can implement many of the values in a neighborhood plan. It sets out specific requirements for what can be developed and how it's permitted and evaluated. While zoning typically is known for the ability to regulate building heights, setbacks and uses, it can also require shared valued like publicly accessible open space and on-site inclusionary housing. Zoning however, is a reactionary tool in that it incorporates the ideas of a plan. Immediately concluding the endorsement of this plan, it is time to amend the regulations to reflect our values.

A zoning ordinance should provide better customer service to all parties: residents, landowners, and developers. The process and procedures used to regulate development will have ramifications on the economic development future in Union Square for many years.

THE CITY-WIDE ZONING OVERHAUL

In 2012, after completion of SomerVision, the planning division staff started to overhaul the SZO. While the current code, last revised significantly in 1990, was a state-of-the-art proposal for its time, our shared values have changed over the last 25 years. We also have SomerVision to guide the way, and it should be incorporated into our regulatory process.

After an initial presentation of the overhaul in January 2015, city staff received many suggestions for improvements and further study. Staff has completed the review of these comments and is completing technical studies and public meetings with plans for proposing an updated overhaul in 2016. This updated overhaul will include strategies to implement this plan.

THE 2009 ZONING

The 2009 zoning for Union Square and Boynton Yards was developed after community input and process, albeit one that was not as extensive as the outreach for the development of the neighborhood plan. Completing the neighborhood plan has revealed new insight about the 2009 zoning. In general, the 2009 zoning permitted enough development, through its density metrics, to allow for the development of an Urban Center Transit-Oriented Development (starts on page 42) the planning process identified some areas for improvement:

- The TOD zoning identifies a preference for commercial development, but doesn't require it. As a result, Planning Staff has regularly turned away residential developers seeking projects in Boynton Yards. The overall development in the plan area, if the residential units were built to their maximum under the TOD and CCD zoning, would result in a mismatch in the ratio of jobs to housing units. The plan would essentially under-deliver by about 3,000 jobs, and over-deliver housing. This can be fixed with introducing a new 'special district' strategy for Boynton Yards and Milk Square.
- The zoning provided an unintentional but built-in disincentive for commercial development. This is a city-wide problem with districts zoned by total height instead of by number of stories. Commercial buildings have taller individual floors so a building height limit and no other guidance usually accommodates more residential stories than commercial stories. Thereby it provides less total square feet of commercial space in the same size building. This problem can be fixed by establishing building types that focus on total number of floors and permit higher floors in commercial buildings.
- The zoning went too high on the north side of Washington Street, immediately adjacent to Prospect Hill. This area is anticipated as a four-story district in the plan and the zoning district needs to reflect that.
- The zoning began to establish protections for artists, with the development of the arts overlay district, but didn't anticipate Somerville's growing maker movement. The Fabrication District includes greater opportunities for both artists and the maker community.
- The existing zoning doesn't capture the benefits of a varied skyline. One of the benefits of using building types within development districts is the ability to provide a variety of building heights. The 2009 zoning specified a 135-foot total building height, therby anticipating a skyline of similarly sized buildings. The plan suggests that most buildings in a place like Boynton Yards will be one of six building types (see page 102). With building types, individual developments can be expected to provide a mix, thereby creating a more interesting skyline and a more varied character of the neighborhood.

CERTAINTY VERSUS FLEXIBILITY

Zoning is often viewed as a balance between providing flexibility for new ideas while providing predictability and certainty for the development community and residents. Development certainty is beneficial, because it arms residents with the knowledge of what is likely to be built around them. It also allows land owners and buyers to set realistic land values.

The old way of zoning ordinances is a flexible but unpredictable system, the special permit. By permitting significant development with special permits, developers use a complicated review system to push for the greatest development possible while not necessarily providing comfort to the abutting community that their concerns about building height, affordable housing, active retail space, and

walkable streets will be met.

A better strategy is to set out these goals in a plan and implement them through zoning. This is what the zoning overhaul seeks to do. By having better zoning, and zoning that more specifically reflects the recommendations of the plan, zoning can be more predictable and straightforward. Nonetheless, some flexibility will be necessary, as times and circumstances always change. Therefore, some 'special permit' type processes are still necessary to ensure that individual projects fit the plan and community values. But, overall there are strategies proposed to provide for more predictable zoning, and much of this is in the new zoning overhaul. The six-part strategy for permitting in Union Square and Boynton Yards uses the best tools in a way that balances needs for flexibility and predictability.

THE RIGHT PERMITS AT THE RIGHT TIME

Writing a zoning ordinance requires the determination about when to use discretionary permits, a design review process, and when just a zoning permit is necessary:

- A discretionary permit uses a public hearing (public comment accepted) and city board to approve, deny, or approve a project with conditions. Typically, this is a "Special Permit" under local zoning, but can also include a zoning variance.
- A design review process includes a public hearing (public comment accepted) but focuses on conditioning a project to make it better. In zoning overhaul, this process is called "Site Development Plan Review."
- "By-right" projects need only a zoning permit, which is issued after determining that the project meets all zoning code requirements, including setbacks and height.

In Union Square and Boynton Yards, we expect to use a combination of these tools.

A FIVE-PART STRATEGY

Permitting will include five types of commercial or mixed-use districts in the plan area:

1. The Fabrication District - A district to protect the buildings suited for arts and creative economy uses throughout Somerville. In general, it will permit these uses to occupy existing buildings by-right.

2. Mixed-Use Districts - A district that permits mixed-use development of three to five stories, the scattered sites and corridors in Union Square will be this district. Each of these buildings will likely include ground-floor retail and will have residential or commercial uses on upper stories. Depending on height and abutting districts, these buildings will be permitted with design review or special permit.

3. A Commercial Core District - This district has rules that are similar to the mixed-use district, but does not permit residential uses. This will be mapped over a small group of properties in the core of Union Square to ensure that the key properties remain commercial and that the overall mix of uses in the square meet the 60/40% commercial/residential split of SomerVision. See map on page 109.

4. A Union Square Overlay District - This district is for larger mixed-use redevelopment. An overlay will be mapped across Union Square including the D Parcels. It will permit an applicant to identify "sending" and "receiving" sites and will spread development across multiple parcels. The full development should meet the jobs/housing mix established in the plan. It will permit applicants to use different building types to create variety in development. That mix will include a general building, a mid rise podium tower, and a commercial building (see page 103).

Individual lots within the overlay still have limits on height. A developer using the overlay would need to receive a special permit to activate the rights that it allows, and through that process they would be expected to work on general design, consistency with the plan, required infrastructure investments, and public benefits. After Special Permit approval, individual buildings that are consistent with the approval would be permitted through a design review process. This overlay will allow developers to quickly respond to the market demands of commercial tenants. A design review process is considered 'shovel-ready,' a feature most commercial tenants are interested in. It is expected that US2 will use the overlay for permitting of the D Parcels.

5. Boynton Yards and Milk Square Special Districts: These districts will allow small projects within the existing building context by-right. To unlock the potential shown in the plan a minimum site acreage will be set. The development site should meet the jobs/housing mix. The permitting process will be the- same as the Union Square overlay.

The combination of these permitting tools would allow implementation of the plan through zoning in an effective way that blends the need for certainty, flexibility, and consistency.

Understanding Each Project

Maintaining Transparency

The development proposed in this neighborhood plan is the same scale as the transformation in Assembly Square. The difference between Assembly Square and Union Square is the surrounding context. Assembly Square is building a new neighborhood and Union Square is being built in context of an existing neighborhood. There will be thousands of watchful eyes.

It's pretty normal to be curious about physical changes in a neighborhood. The challenge is making the information accessible and understandable. Requiring a civic engagement platform of development is one possible solution. Civic engagement platforms are fancy words to describe connecting the community to government.

The system of notice by snail mailing and newspaper advertisements is outdated. As much as a city innovates — like posting notices online – how can a city reach everyone? Meetings run on a schedule and inevitably someone is left out. The expectation is for information immediately. Community engagement tools help municipalities bridge the gap between legal obligation and the Facebook, Twitter, and Instagram users of the world.

There are companies already offering a suite of tools to help cities connect as well as municipalities coding their needs. Courbanize tries to bring the community meetings to the people that cannot attend by putting information online in an understandable way. Citygram is a Code for America product that can be connected to open data that sends notifications to subscribers on topics of interest they identify. There are also cities, interested residents, and civic organizations creating websites to track development. Online engagement allows what City Hall will never be able to offer, 24 hour-a-day access.

To maintain transparency, accessible information in a clear and easy-to-read format is important. The City will always use conventional means to contact constituents but needs to work with developers to pair that with digital outreach.

BELOW: The community engagement platform built by MarKa Architects for the Powder House Community School Reuse.

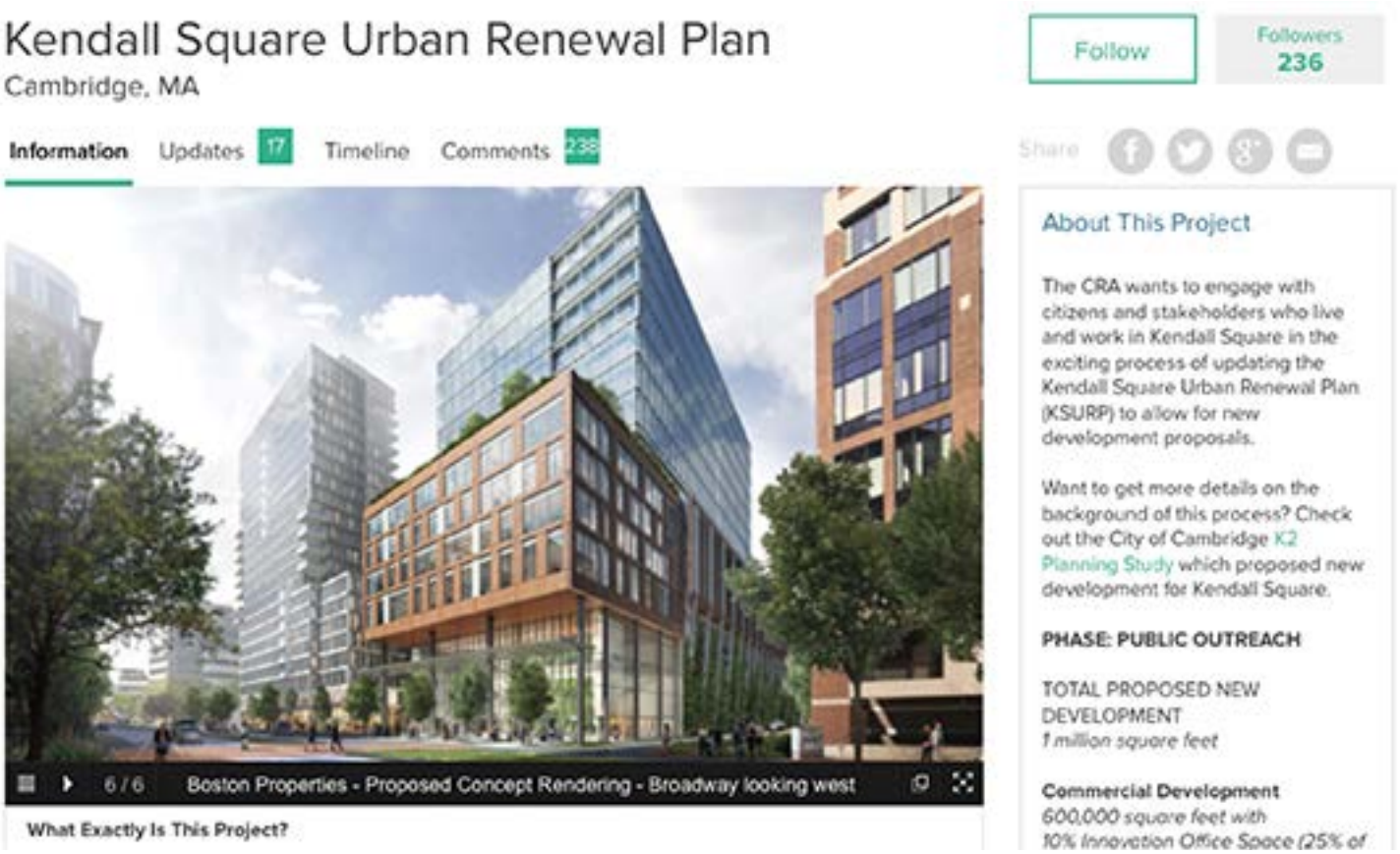
POWDER HOUSE FOR SOMERVILLE

MarKa has created a forum where everyone in the community is invited to engage in the dialogue. JOIN US

COMMUNITY FORUM

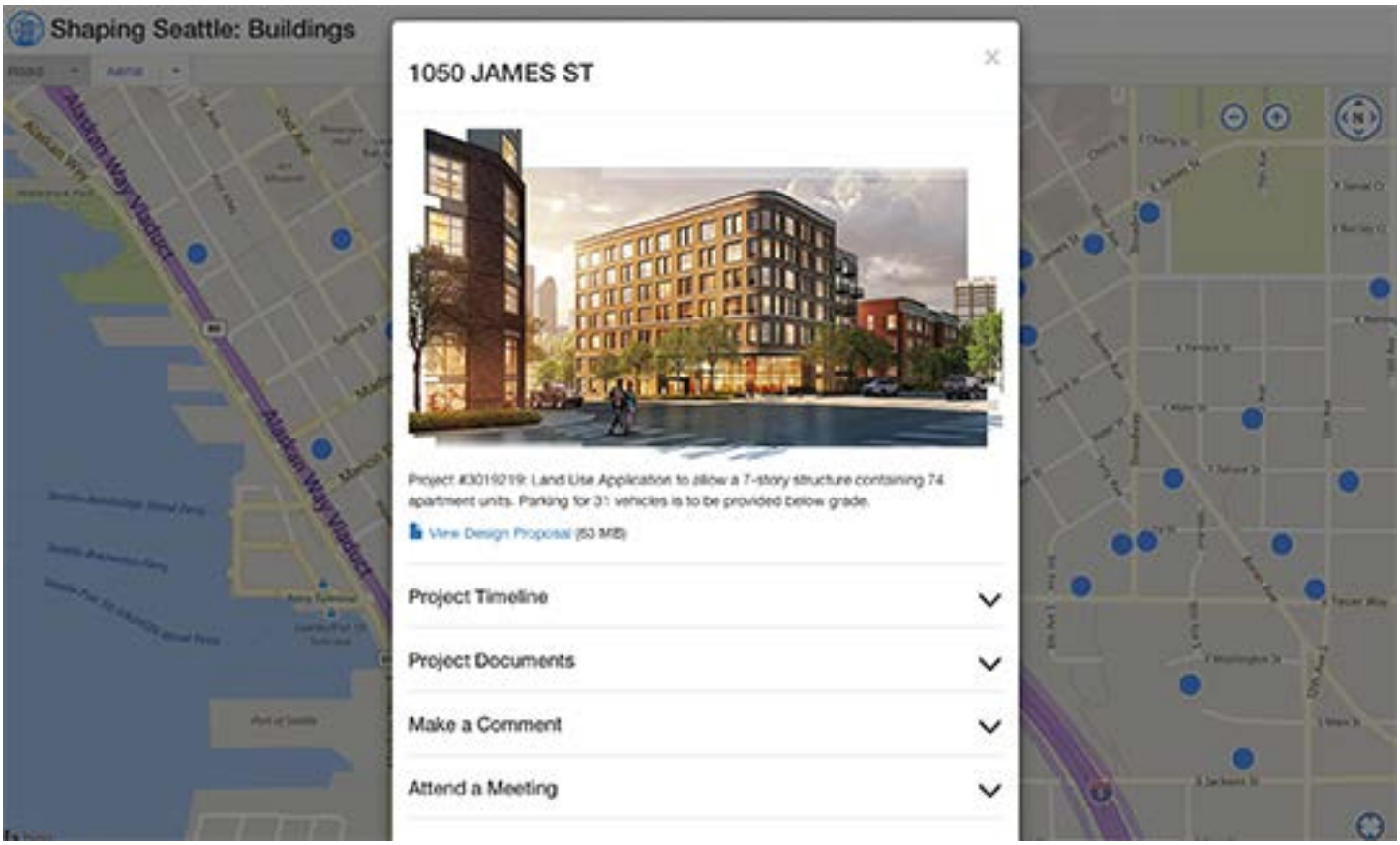
UPDATES

February 2016 - The City of Somerville and MarKa are actively reviewing the terms of the Land Disposition Agreement (LDA) and zoning process that meets the requirements of the Powder House for Somerville project as reviewed by the community. Submissions to the applicable Boards are anticipated for March 2016. The hearings schedule will be posted as soon as dates are confirmed.



ABOVE: CoUrbanize website for Boston Properties redevelopment in Kendall Square.

BELOW: Seattle Development Tracker with address based map. Each project has clearly labeled information including: project timeline, project documents, make a comment, and attend a meeting.



Tracking Our Progress

Incremental steps to fulfilling SomerVision

With the adoption of SomerVision, Somerville challenged itself to create 6,000 new housing units, attract 30,000 jobs, increase open space by 125 acres, and ensure 50% of new trips were by walking, biking, or transit and that 85% of new development is in transformative areas. The comprehensive plan timeframe started in 2010, so how has Somerville done over the last 6 years?

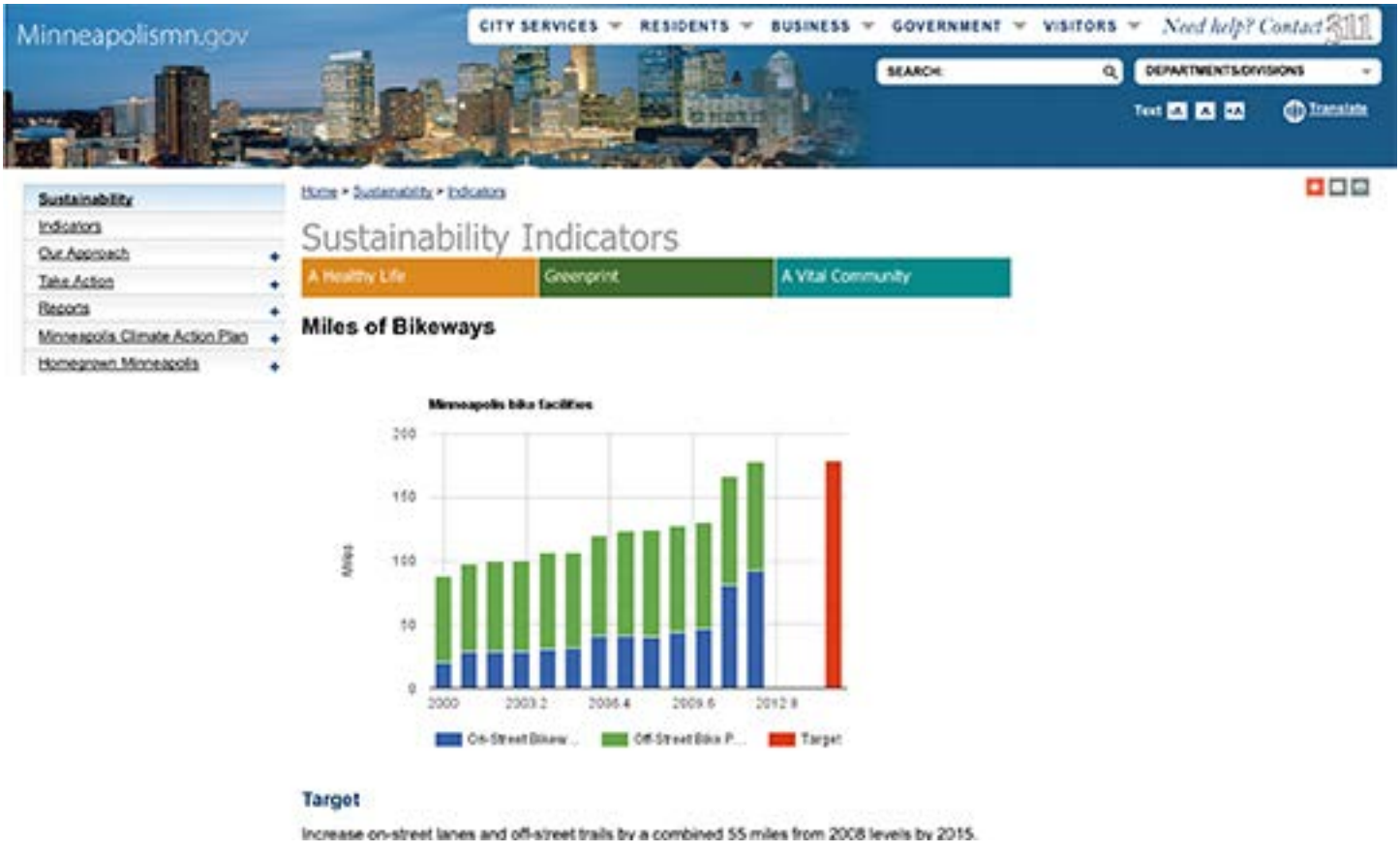
OSPCD does its best to track the SomerVision numbers, it's in part to how the City was able to guide the development portrayed in this Neighborhood Plan. The City collects information on dwelling units created, jobs anticipated, and open space development. Due to the extensive amount of research from the zoning overhaul that informed the metrics used in this plan, Somerville can refine the data it collects for consistency and reliability in tracking.

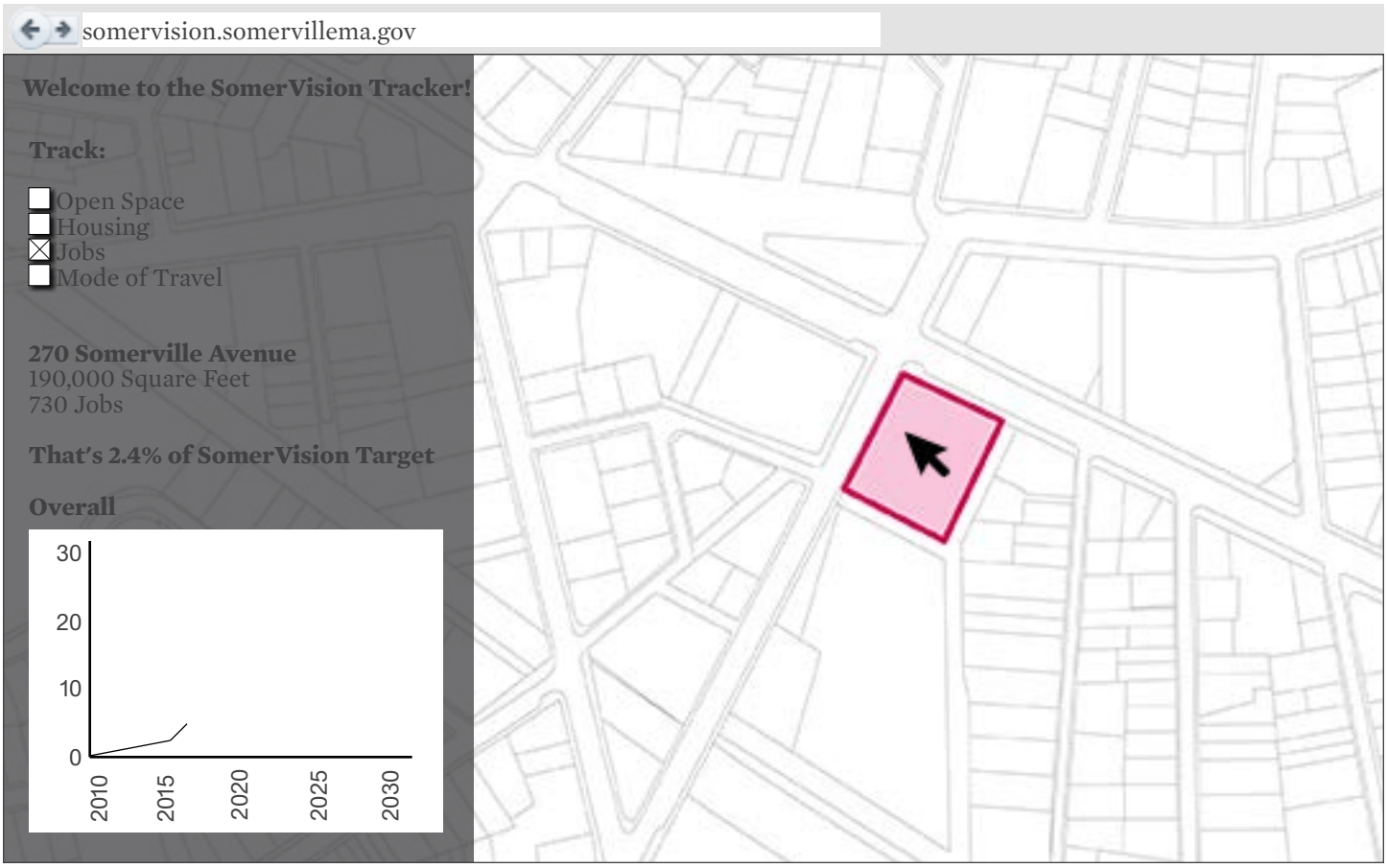
With this data, the City can share this information outside of traditional formats like the annual Board of Aldermen update. A tracking website, with a simple url, that live updates as projects and open space are built is a great start to disseminating information. It's also available at any time.

On the tracking website, the information needs to be graphic and easy to understand. Similarly, the information needs to be presented in multiple formats. People might be interested specifically about their neighborhood's data prior to looking at the city-wide data. This tracker can also tie into a community engagement portal of a project currently in development.

Somerville has never shied away from challenges like those outlined in SomerVision. Tracking our progress publicly will help residents stay informed and keep us focused on common goals.

BELOW: Minneapolis measures community progress towards environmental, economic, and social sustainability. Indicators were selected to better understand the state of the community, and what needs to be done to preserve and expand quality of life for future generations. Ten-year targets were approved by the City Council.





ABOVE: An example of what a SomerVision tracker could look like.

BELOW: Boston reports on over 2,000 performance metrics and reports using a scorecard.

APPENDICES

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Fiscal Impact Analysis of Union Square and Boynton Yards

Appendix A

Prepared for:

City of Somerville, Massachusetts

April 19, 2016

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April 2016

FISCAL IMPACT ANALYSIS REPORT FOR UNION SQUARE AND BOYNTON YARDS

City of Somerville, Massachusetts

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EXECUTIVE SUMMARY

TischlerBise is under contract with the City of Somerville to conduct a fiscal impact analysis of the Union Square and Boynton Yard development plans. A fiscal impact evaluation analyzes revenue generation and operating and capital costs to a jurisdiction associated with the provision of public services and facilities to serve new development—residential, commercial, industrial, or other. It includes all direct revenues and costs associated with a specific project. Unlike an economic impact analysis, it does not include spin-off, or indirect, impacts from development but rather identifies whether sufficient revenues will be generated from the new development to cover all related direct costs. For the Union Square and Boynton Yards fiscal impact analysis, all tax-supported Funds (General Fund and Community Preservation Fund) services and facilities are included in the analysis.

Many of the assumptions on which the analysis is based can be viewed as policy-making decision points, which if modified, would affect the overall results. For example, the level of capital expenditures for Union Square and Boynton Yards development assumed in the analysis, and the resulting costs, are projected independent of the current city Capital Investment Plan, which covers all citywide infrastructure needs. Rather, the capital costs projected in this analysis reflect the true costs to serve growth, regardless of whether the resources are available to cover the costs. Obviously, the City will continue to balance its budget each year, considering financial guidelines and policies, applicable operating impacts, and available resources.

DEVELOPMENT PROGRAMS

Union Square and Boynton Yards are approximately 2.5 miles northwest of downtown Boston. The neighborhood is located at the southern end the City of Somerville, abutting the City of Cambridge to the south and west. Located at the foot of Prospect Hill, Union Square has historically been a center of commerce, rail, manufacturing, and industry.

As shown in Figure 1 on the following page, the Union Square land use plan calls for a net increase of 1,319 housing units over a 30-year period, with the 264 of these units qualifying as affordable units. The population increase associated with these units is 2,493 persons. There is a net increase of 2.27 million square feet of nonresidential space projected with office use comprising the greatest share at 1.7 million square feet, followed by retail space (377,073). Employment associated with this nonresidential development is estimated at 7,782.

Figure 1. Summary of Union Square Development Program

Key Development Assumptions

Union Square

Residential		Assessed Value*	Persons Per HU**	Pupils Per HU***
Population	2,493 Persons			
Residential Units	1,055 Units	$190,000 Per Unit	1.89	0.13
Affordable Units	264 Units	$91,200 Per Unit	1.89	0.13
Nonresidential		**Assessed Value***	**Jobs/ 1,000 SF#**	
Jobs	7,782 Jobs			
Retail	377,073 Sq. Ft.	$340 Per Sq. Ft.	2.50	
Creative Enterprise	110,165 Sq. Ft.	$200 Per Sq. Ft.	2.86	
Office	1,782,626 Sq. Ft.	$340 Per Sq. Ft.	3.63	
Hotel Rooms	175 Rooms	$290,000 Per Room	0.33	

*Provided by the City of Somerville. Hotel assumes a full service hotel.

**US Census Bureau ACS data

***US Census Bureau Public Use Mircosample data

#Based on information from the Institute of Transportation Engineers

As shown in Figure 2 on the following page, the Boynton Yards land use plan calls for a net increase of 1,030 housing units over a 30-year period, with the 206 of these units qualifying as affordable units. The population increase associated with these units is 1,947 persons. There is a net increase of 2.06 million square feet of nonresidential space projected with office use comprising the greatest share at approximately 1.80 million square feet, followed by retail space (169,039). Employment associated with this nonresidential development is estimated at 7,242.

Figure 2. Summary of Boynton Yards Development Program

Key Development Assumptions
Boynton Yards

Residential		Assessed Value*	Persons Per HU**	Pupils Per HU***
Population	1,947 Persons			
Residential Units	824 Units	$190,000 Per Unit	1.89	0.13
Affordable Units	206 Units	$91,200 Per Unit	1.89	0.13
Nonresidential		**Assessed Value***	**Jobs/ 1,000 SF#**	
Jobs	7,242 Jobs			
Retail	169,039 Sq. Ft.	$340 Per Sq. Ft.	2.50	
Creative Enterprise	90,455 Sq. Ft.	$200 Per Sq. Ft.	2.86	
Office	1,808,894 Sq. Ft.	$340 Per Sq. Ft.	3.63	

*Provided by the City of Somerville
**US Census Bureau ACS data
***US Census Bureau Public Use Mircosample data
#Based on information from the Institute of Transportation Engineers

CUMULATIVE NET FISCAL IMPACTS

Figure 3 below shows the ***cumulative*** results for each development area. The analysis includes all variable revenues generated by Union Square and Boynton Yards. All operating and capital costs attributable to each development are included in the analysis. Comparing available resources to projected costs reveals overall net surpluses or (net deficits). As shown in Figure 3, the fiscal impact analysis results show that revenues generated by development within both Union Square and Boynton Yards will be sufficient to cover the resulting operating *and* capital costs to the City. Boynton Yards generates the greatest cumulative surplus at $216.2 million, or $7.2 million annually. Union Square generates a cumulative net surplus of $154.3 million, or $5.1 million on an average annual basis.

Figure 3. Summary of Cumulative Net Fiscal Impact Results (in $1,000's)

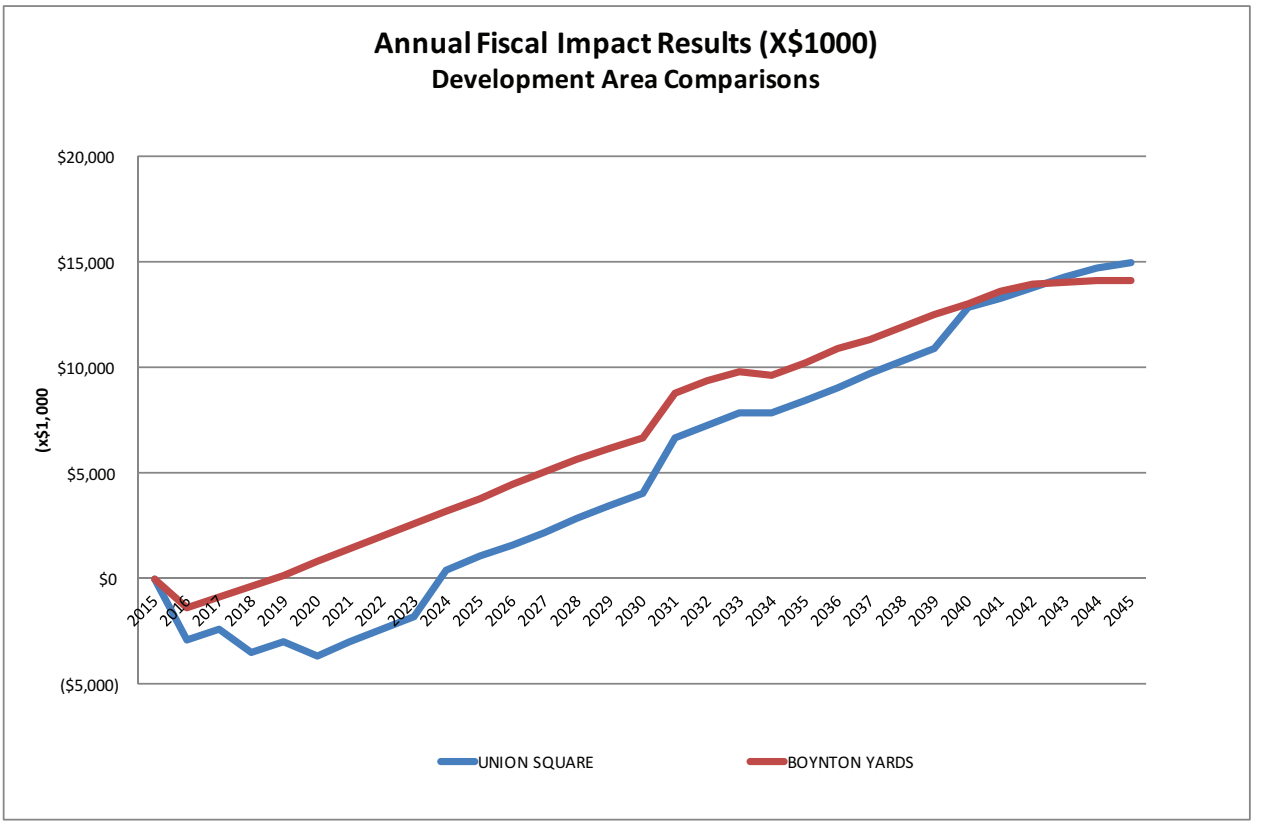
SUMMARY OF CUMULATIVE FISCAL IMPACTS		
UNION SQUARE AND BOYNTON YARDS FISCAL IMPACT ANALYSIS		
	SCENARIO	
REVENUE	**UNION SQUARE**	**BOYNTON YARDS**
Total General Fund Revenue	$382,232,279	$327,685,109
Total Special Revenue	$254,716	$221,682
TOTAL REVENUE	**$382,486,996**	**$327,906,791**
EXPENDITURES		
Total City General Fund Operating Expenditures	$103,808,397	$47,571,278
Total City Special Revenue Fund Expenditures	$0	$0
Total Public Schools Operating Expenditures	$8,276,595	$6,355,518
Total City Capital Expenditures	$116,036,868	$57,765,769
TOTAL EXPENDITURES	**$228,121,860**	**$111,692,565**
NET CUMULATIVE FISCAL IMPACT	**$154,365,136**	**$216,214,226**
AVERAGE ANNUAL IMPACT	**$5,145,504.53**	**$7,207,140.87**

ANNUAL NET FISCAL IMPACTS

Figure 4 on the next page shows the ***annual*** (year-to-year) net fiscal results for the Union Square and Boynton Yards projects over the 20-year analysis period. Each year reflects total revenues generated minus total expenditures incurred in the same year. Both capital and operating costs are included. By showing the results annually, the magnitude, rate of change, and timeline of deficits and revenues can be observed over time. Data points above the $0 line represent annual net surpluses; points below the $0 line represent annual net deficits. Each year's net surplus or deficit is *not* carried forward into the next year in this graphic. This enables a comparison from year-to-year of the net results without distorting the revenue or cost side of the equation.

As shown below, net deficits are incurred in the initial years as debt payments are incurred for necessary streetscape and utility upgrades begin in year one. After these initial deficits, surpluses are generated in each year throughout the remaining development timeline. Capital improvements and expenditures are assumed to be debt financed in this analysis, which has a "smoothing effect" on the results. That is, debt service payments are spread over 15 -30 years, depending on expenditure, as opposed to a large expenditure in one or two years. There is an upward "blip" that occurs in 2031 as debt service for streetscape improvements are retired.

Figure 4. Summary of Annual Net Fiscal Impact Results



CONCLUSIONS

The following major conclusions can be drawn from the analysis:

- Union Square and Boynton Yards each generate net surpluses to the City over the 30-year analysis period, with Boynton Yards producing the greatest fiscal benefits. Due to the marginal cost methodology employed as part of this analysis, Union Square and Boynton Yards each benefit from existing economies of scale from a service delivery perspective, as well as some existing infrastructure capacity in certain areas, since the City already serves each study area.

- Another reason for the positive results is the assumed mix of development in the study area, which is heavily weighted towards nonresidential uses. As shown in the table below, the tax base at the end of the thirty-year analysis period is 78% nonresidential in Union Square and 80% in Boynton Yards.

Tax Base Split by Development Area

	Union Square	Boynton Yards
Residential	22%	20%
Nonresidential	78%	80%

- Boynton Yards generates the best results, with a cumulative net surplus of $216.2 million, or $7.2 million annually. Because of the marginal nature of this analysis, costs for required infrastructure are almost half that of Union Square. Since both development areas assume similar amounts of development, these lower costs generate greater fiscal benefits.
- Both development areas generate cumulative net deficits to the capital fund, as the City has dedicated no capital revenue other than grants and bond proceeds to the projects at this time. However, the net surpluses to the General Fund for operations are more than enough to offset the capital deficits. Capital Reserve Fund transfers and value-capture techniques, such as DIF and I-Cubed are not factored into the analysis, although potential exists.
- Because of the upfront infrastructure requirements, both Union Square and Boynton Yards generate net deficits in the initial years. In Union Square, the annual net deficits are incurred for the first eight years compared to the first two years for Boynton Yards. As a result, the City is not "made whole" until years 9-30 of the 30-year analysis period. This is reflected in the average annual results.
- An interesting finding is that the amount of infrastructure required for Union Square or Boynton Yards doesn't necessarily correspond to the relative amount of new development assumed. For example, although Union Square assumes slightly more development, required infrastructure needs total $116 million for Union Square, compared to $57.7 million for Boynton Yards.
- Significant capital investment in street and public utility infrastructure is required for each development plan, with significantly more required for Union Square. Debt service for street and public utility infrastructure totals $85.2 million for Union Square, compared to $53.7 million for Boynton Yards. Another significant capital cost required for Union Square is a preliminary estimate of $21 million for the relocation of the existing Fire Station. There are no Fire-related capital costs assumed for Boynton Yards.
- From a land use policy perspective, it is important to acknowledge that fiscal issues are only one concern. Community goals include but are not limited to: environmental, housing affordability, jobs/housing balance, traffic and other issues must also be taken into consideration when making final assessments on what is best for the City.

MAJOR ASSUMPTIONS

A fiscal impact analysis determines whether revenues generated by development/redevelopment in Union Square and Boynton Yards are sufficient to cover the resulting costs for service and facility demands placed on the City of Somerville. The fiscal impact analysis conducted by TischlerBise incorporates the case study-marginal cost approach wherever possible. The case study-marginal methodology is the most realistic method for evaluating fiscal impacts. This methodology takes site or geographic-specific information into consideration. Therefore, any unique demographic or locational characteristics of new development are accounted for, as well as the extent to which a particular infrastructure or service operates under, over or close to capacity. Therefore, available facility capacity determines the need for additional capital facilities and associated operating costs. Many of the administrative/general government costs that are impacted by general growth in the City, regardless of location, are projected using a marginal/average cost hybrid methodology that attempts to determine capacity and thresholds for staffing but projects non-salary operating costs using an average cost approach.

The following major assumptions regarding the fiscal impact methodology should be noted.

Marginal, Growth-Related Costs and Revenues: For this analysis, costs and revenues that are directly attributable to new development/redevelopment in Union Square and Boynton Yards are included. Some costs and revenues are not expected to be impacted by demographic changes, and are considered as fixed costs and revenues in this analysis. To determine fixed costs and revenues, TischlerBise reviewed the FY2015 budget and all available supporting documentation. Funds evaluated as part of this analysis include the City's tax-supported funds (e.g., General Fund and Community Preservation Act Fund). Based on this review, preliminary assumptions were developed that were reviewed and discussed with appropriate City department representatives. In some cases, a determination was made based on TischlerBise's extensive national experience conducting public sector fiscal impact analyses.

Level of Service: The cost projections are based on the "snapshot approach" in which it is assumed the current level of service, as funded in the City's FY2015 budget, will continue through the 30-year analysis period. Current demand base data was used to calculate unit costs and service level thresholds. Examples of demand base data include population, dwelling units, employment by type, vehicle trips, etc. In summary, the "snapshot" approach does not attempt to speculate about how levels of service, costs, revenues and other factors will change over 30 years. Instead, it evaluates the fiscal impact to the City as it currently conducts business under the present budget.

Revenue Structure and Tax Rates: Revenues are projected assuming that the current revenue structure and tax rates, as defined by the FY2015 budget, will not change during the analysis period.

Inflation Rate: The rate of inflation is assumed to be zero throughout the projection period, and cost and revenue projections are in constant 2015 dollars. This assumption is in accord with current budget

data and avoids the difficulty of speculating on inflation rates and their effect on cost and revenue categories. It also avoids the problem of interpreting results expressed in inflated dollars over an extended period of time.

Non-Fiscal Evaluations: It should be noted that while a fiscal impact analysis is an important consideration in planning decisions, it is only one of several issues that should be considered. Community goals include but are not limited to: environmental, social and public safety issues, for example, should also be considered when making planning and policy decisions.

FISCAL IMPACT ANALYSIS RESULTS AND FINDINGS

Fiscal impact analysis results from development/redevelopment of Union Square and Boynton Yards to the City of Somerville are presented in this section.

Fiscal impact results are derived using annual development projections and levels of service for revenues and costs, which are discussed elsewhere in this document. Results are shown in three ways:

1. ***Cumulative*** results are shown reflecting total revenues, expenditures, and net fiscal results over the development timeframe.
2. ***Annual*** net results are discussed and show the fiscal impacts (annual revenues minus annual expenditures) from one year to the next over the projection period.
3. ***Average annual*** results are shown for 30-year time periods to provide an easy way to understand the magnitude of projected average annual fiscal impacts.

CUMULATIVE NET RESULTS

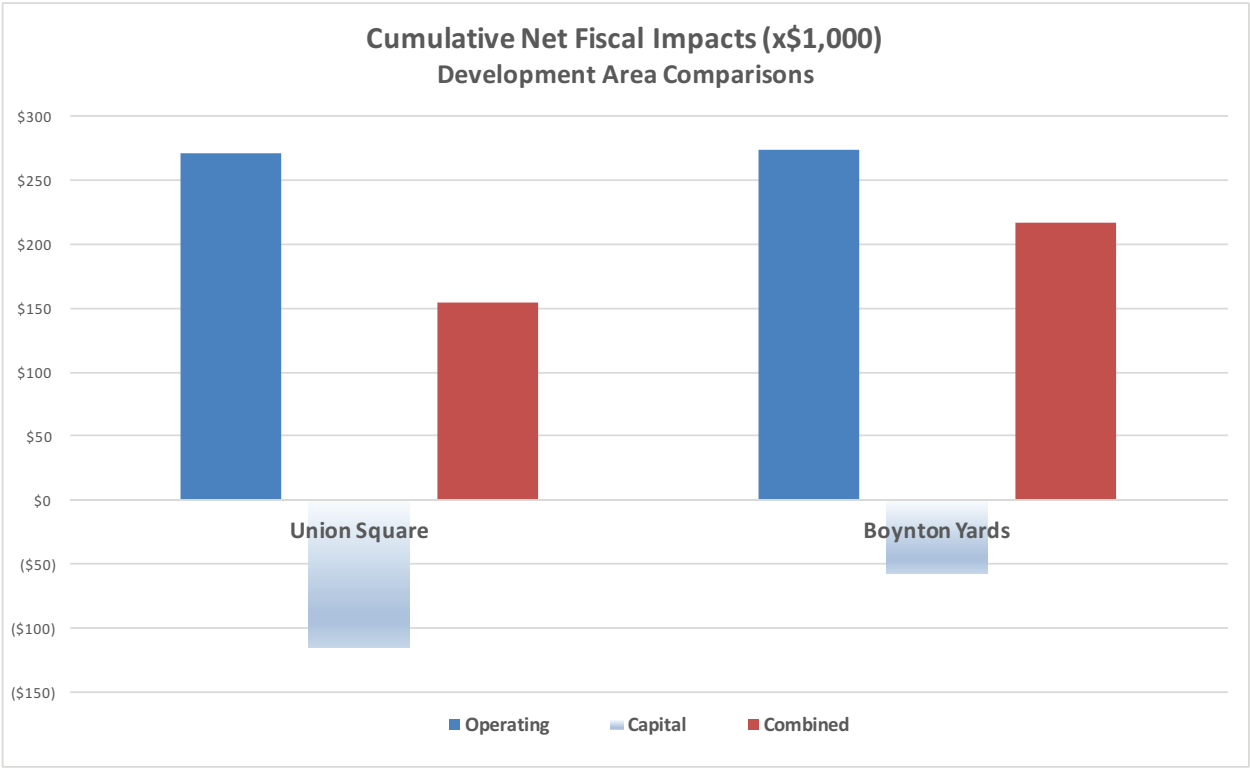
Cumulative figures reflect total revenues generated minus projected operating and capital expenditures over the 30-year development timeframe. The analysis includes all variable revenues generated by Union Square and Boynton Yards. All operating and capital costs attributable to each development are included in the analysis. Comparing available resources to projected costs reveals overall net surpluses or (net deficits). As shown in Figure 3, the fiscal impact analysis results show that revenues generated by development within both Union Square and Boynton Yards will be sufficient to cover the resulting operating *and* capital costs to the City. Boynton Yards generates the greatest cumulative surplus at $216.2 million, or $7.2 million annually. Union Square generates a cumulative net surplus of $154.3 million, or $5.1 million on an average annual basis.

Figure 5. Summary of Cumulative Net Fiscal Impact Results (in 1,000's)

SUMMARY OF CUMULATIVE FISCAL IMPACTS		
UNION SQUARE AND BOYNTON YARDS FISCAL IMPACT ANALYSIS		
	SCENARIO	
REVENUE	**UNION SQUARE**	**BOYNTON YARDS**
Total General Fund Revenue	$382,232,279	$327,685,109
Total Special Revenue	$254,716	$221,682
TOTAL REVENUE	**$382,486,996**	**$327,906,791**
EXPENDITURES		
Total City General Fund Operating Expenditures	$103,808,397	$47,571,278
Total City Special Revenue Fund Expenditures	$0	$0
Total Public Schools Operating Expenditures	$8,276,595	$6,355,518
Total City Capital Expenditures	$116,036,868	$57,765,769
TOTAL EXPENDITURES	**$228,121,860**	**$111,692,565**
NET CUMULATIVE FISCAL IMPACT	**$154,365,136**	**$216,214,226**
AVERAGE ANNUAL IMPACT	**$5,145,504.53**	**$7,207,140.87**

Cumulative results are shown graphically as well in Figure 6.

Figure 6. Summary of Cumulative Net Fiscal Impact Results



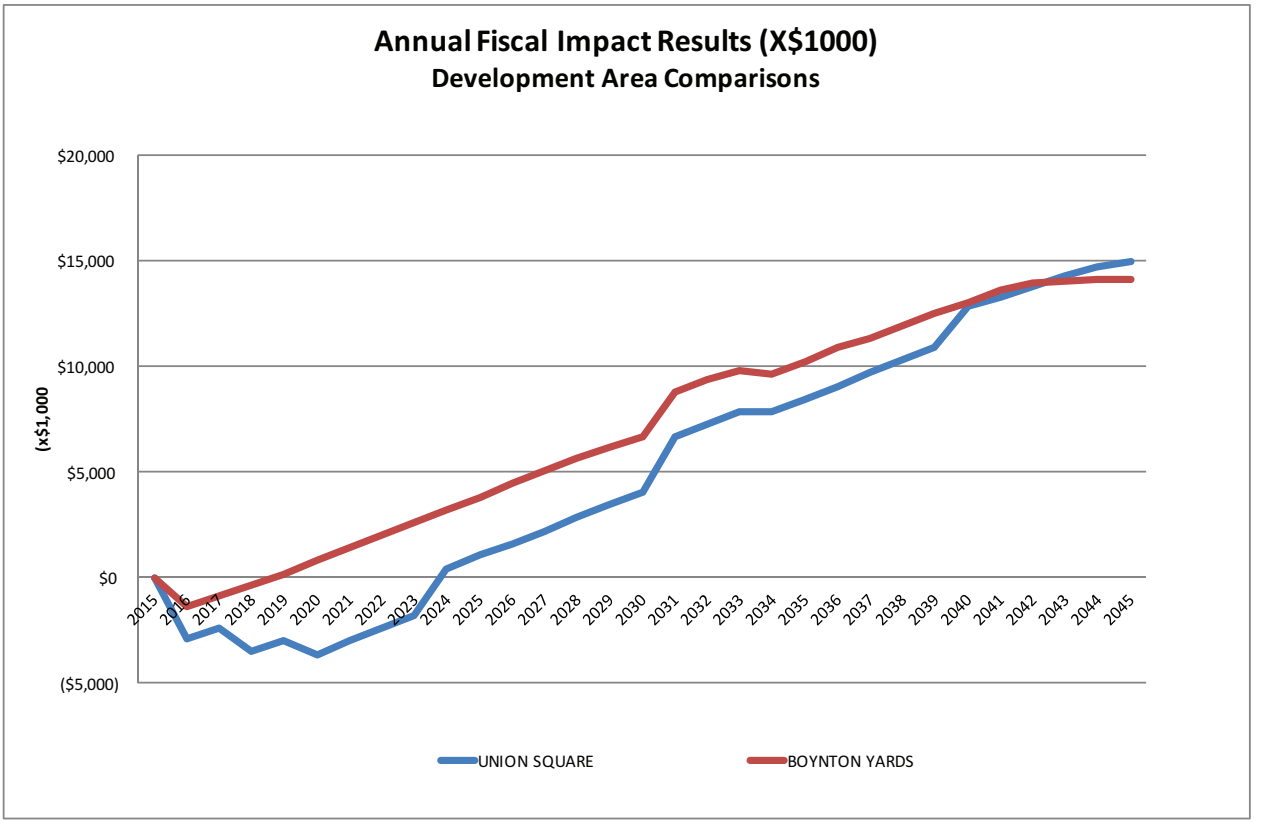
As shown above, both development areas generate cumulative net deficits to the capital fund, as the City has no dedicated capital revenue other than grants, bond proceeds and transfers of cash from the General Fund. However, the net surpluses to the General Fund for operations are more than enough to offset the capital deficits. As discussed in more detail later on this report, capital expenditures required for Union Square are more than twice what is required for Boynton Yards, although Boynton Yards assumes more development. This is primarily due to the the amount of public utility and streetscape infrastructure required to facilitate redevelopment in Union Square.

ANNUAL NET RESULTS

The following figure shows the ***annual*** (year to year) net fiscal results for Union Square and Boynton Yards over the 30-year analysis period. Each year reflects total revenues generated minus total expenditures incurred in the same year. Both capital and operating costs are included. By showing the results annually, the magnitude, rate of change, and timeline of deficits and revenues can be observed over time. The "bumpy" nature of the annual results during particular years generally represents capital costs being incurred.

On the following figure, data points above the $0 line represent annual net surpluses; points below the $0 line represent annual net deficits. Each year's net surplus or deficit is *not* carried forward into the next year in this graphic. This enables a comparison from year-to-year of the net results without distorting the revenue or cost side of the equation.

Figure 7. Annual Net Fiscal Results: Union Square and Boynton Yards

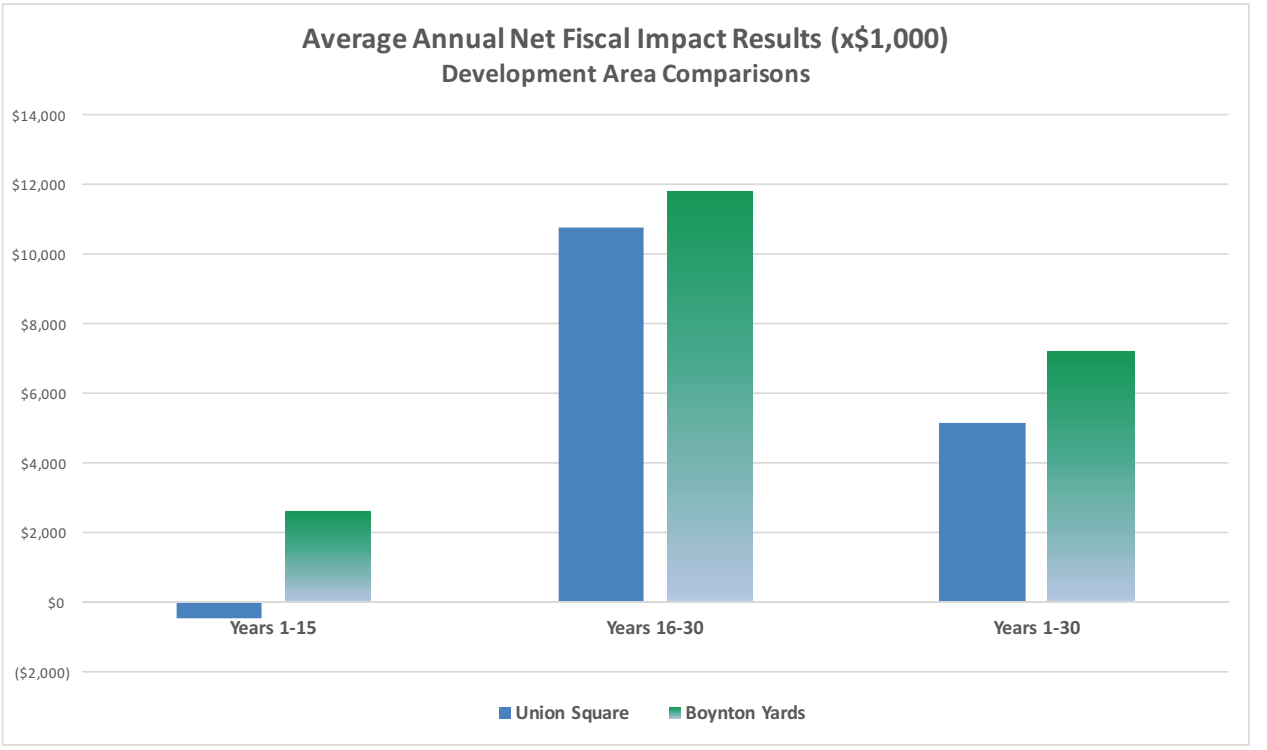


As shown above, initial net deficits are incurred in the initial years for both Union Square and Boynton Yards. Most of the expenditures for capital improvements are assumed to be debt financed in this analysis, which has a "smoothing effect" on the results. That is, debt service payments are spread over 15-30 years, depending on the expenditure, as opposed to a large expenditure in one or two years. Because of the required infrastructure for Union Square, the annual net deficits are incurred for the first eight years compared to the first two years for Boynton Yards. These capital expenditures are discussed in more detail in the next section of this report.

AVERAGE ANNUAL RESULTS

For further information, ***average annual*** results are shown graphically below in Figure 8 for three time periods for Union Square and Boynton Yards. As shown in Figure 8, Boynton Yards generates average annual net surpluses in each of the three time periods. Average annual net deficits are generated in years 1-15 in Union Square due to the amount of upfront infrastructure needs. Average annual net surpluses are not generated until years 11-30, when enough development is online and generating sufficient revenue to offset the operating and capital costs.

Figure 8. Average Annual Net Fiscal Impacts by Time Period


Average Annual Net Fiscal Impact Results (x$1,000)
Development Area Comparisons
$14,000
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$0
($2,000)
Years 1-15
Years 16-30
Years 1-30
Union Square
Boynton Yards

REVENUE AND COST SUMMARY

A summary of projected revenues and costs generated by Union Square and Boynton Yards to the City of Somerville are provided below. These figures are based on the revenue and cost factors described in Appendix B.

GENERAL FUND REVENUE PROJECTIONS

Cumulative operating revenue to the City generated over the 30-year projection period for Union Square and Boynton Yards is shown below in Figure 9. As Figure 9 illustrates, cumulative General Fund revenue totals $382.2 million for Union Square compared to $327.6 million for Boynton Yards. Revenue is generally greater for Union Square due to the greater amount of development assumed.

Figure 9. Cumulative General Fund Revenues from Union Square and Boynton Yards

Cumulative Revenue - Scenario Comparisons
City of Somerville, MA
Union Square and Boynton Yards Fiscal Impact Analysis

Category	SCENARIO			
	UNION SQUARE	%	BOYNTON YARDS	%
Property Taxes	$315,881,331	83%	$278,229,567	85%
Excise Taxes	$17,993,095	5%	$6,600,976	2%
Penalties & Interest on Taxes	$0	0%	$0	0%
PILOT Payments	$0	0%	$0	0%
Charges - Trash	$133,229	0%	$122,099	0%
Fees	$796,649	0%	$747,220	0%
Rentals	$0	0%	$0	0%
Other Department Revenue	$12,244	0%	$10,950	0%
Licenses and Permits	$13,077,898	3%	$15,199,909	5%
Fines and Forfeits	$9,607,618	3%	$7,877,323	2%
Investment Income	$0	0%	$0	0%
Misc Recurring	$0	0%	$0	0%
State Revenue	$24,730,214	6%	$18,897,065	6%
Other Financing Source	$0	0%	$0	0%
TOTAL	**$382,232,279**	**100%**	**$327,685,109**	**100%**

As Figure 9 above indicates, Property Taxes is overwhelmingly the largest growth-related revenue source generated by both Union Square and Boynton Yards, comprising 83 percent and 85 percent of total revenue, respectively. State Revenue is the second largest growth-related revenue source, totaling $24.7 million for Union Square and $18.8 million for Boynton Yards. The third largest source of General Fund revenue is License and Permits, which is comprised primarily of development-related revenue (e.g., building permits). The fourth largest General Fund revenue source is Excise Taxes, which are

actually greater for Union Square, $17.9 million compared to $6.6 million for Boynton Yards. Revenue is greater for Union Square due to the hotel development assumed, which generates $10.9 million in Local Room Excise Tax.

OPERATING EXPENDITURE PROJECTIONS

Cumulative operating expenditures generated over the 30-year projection period are shown in Figure 10 below. As Figure 10 illustrates, cumulative operating expenditures are highest for Union Square at $112.9 million, compared to $53.9 million for Boynton Yards. As explained in more detail below, Public Safety costs are approximately $51 million higher for Union Square.

Figure 10. Cumulative Operating Expenditures from Union Square and Boynton Yards

Cumulative Operating Expenditures - Scenario Comparisons
City of Somerville, MA
Union Square and Boynton Yards Fiscal Impact Analysis

Category	SCENARIO			
	UNION SQUARE	%	BOYNTON YARDS	%
General Government	$12,603,314	11%	$11,754,491	22%
Public Safety	$59,577,338	53%	$8,563,717	16%
Culture & Recreation	$1,149,873	1%	$792,063	1%
Public Works	$23,419,970	21%	$20,953,550	39%
Other Items	$7,057,903	6%	$5,507,457	10%
Community Preservation Fund	$0	0%	$0	0%
Somerville Schools	$8,276,595	$0	$6,355,518	12%
TOTAL	**$112,084,992**	**100%**	**$53,926,796**	**100%**

As Figure 10 above indicates, the greatest operating expenditures differ for each development area. For example, in Union Square the greatest operating expenditures are for Public Safety, at $59.5 million (53 percent of total expenditures). In Boynton Yards the greatest operating expenditures are for Public Works, at $20.9 million (39 percent of total expenditures). The large Public Safety expenditures in Union Square are due to the assumption that additional Police space is required because of the demolition of the existing building as part of the redevelopment of Union Square. It is assumed the City will need to lease space at a cost of $1.7 million annually. For all other operating expenditures, the ranking of total expenditures by category track closely with the amount of new development assumed. Therefore, expenditures are greater for each category under Union Square.

CAPITAL EXPENDITURE PROJECTIONS

Cumulative capital expenditures generated over the 30-year projection period are shown in Figure 11 below.

Figure 11. Cumulative Capital Expenditures from Union Square and Boynton Yards

Cumulative Capital Expenditures - Scenario Comparisons
City of Somerville, MA
Union Square and Boynton Yards Fiscal Impact Analysis

Category	SCENARIO			
	UNION SQUARE	%	BOYNTON YARDS	%
Parks and Recreation	$0	0%	$0	0%
Required Street/Public Utility Improvements	$85,214,449	73%	$53,761,508	93%
Police	$425,000	0%	$325,000	1%
Fire	$25,685,822	22%	$0	0%
Somerville Public Schools	$4,711,597	4%	$3,679,261	6%
TOTAL	**$116,036,868**	**100%**	**$57,765,769**	**100%**

Cumulative capital expenditures for Union Square total $116 million over the 30-year analysis period, compared to cumulative expenditures of $57.7 million for Boynton Yards. Significant capital investment in street and public utility infrastructure is required for each development plan, with significantly more required for Union Square. Debt service for street and public utility infrastructure totals $85.2 million for Union Square, compared to $53.7 million for Boynton Yards. Another significant capital cost required for Union Square is a preliminary estimate of $25.6 million in principal and interest for the relocation of the existing Fire Station. The Carlson Group of Andover, Massachusetts, is conducting a fire department evaluation and strategic planning study to determine specific fire department needs and costs. There are no Fire-related capital costs assumed for Boynton Yards. The modest capital expenditures for Police for each area reflect the need for additional police cars due to new development and their continued replacement after their two-year life cycle. Projected costs for additional student seats in the Somerville School System total $4.7 million for Union Square, compared to $3.6 million for Boynton Yards. With more residential units in Union Square versus Boynton Yards, it is no surprise that School capital costs are greater. There are no assumed Park costs resulting from Union Square and Boynton Yards. Public space proposed in Union Square and Boynton Yards will be required through zoning and paid for and built by private development.

APPENDIX A

BASE YEAR DEMOGRAPHIC DATA

Base year data is used to determine current levels of service, which are used to project future costs. The following summarizes base year demographic data for the City of Somerville.

Figure A1. Base Year Demographic Data

	Base 2015
POPULATION*	75,754
*HOUSING UNITS**	
SINGLE FAMILY-DETACHED	3,670
SINGLE FAMILY-ATTACHED	1,538
MULTIFAMILY	29,167
TOTAL UNITS	34,375

*US Census, Suburbanstats.org

**2013 U.S. Census, American Community Survey, 1-Year Estimates Table B25024

*JOBS****	
RETAIL JOBS	6,640
OFFICE JOBS	7,391
INDUSTRIAL JOBS	2,899
INSTITUTIONAL JOBS	8,016
TOTAL JOBS	24,946

***Total jobs from Massachussets Office of Labor and Workforce Development, 2014

APPENDIX B

This section provides supporting detail on projection factors used in the Union Square and Boynton Yards Fiscal Impact Analysis.

OVERVIEW

Annual costs and revenues attributable to new development are projected using the methodologies described below.

Per Capita (population)

If a cost or revenue is assumed to be allocated on a per capita basis, the budget item is divided by base year population to arrive at the current level-of-service factor.

Per Capita and Employee (Population and Jobs)

Some costs and revenues use both a *per capita and employee (job)* approach. If a cost or revenue is assumed to be allocated on a *per capita and job* basis, it is divided by the population and job estimate to determine the current level-of-service factor.

Custom/Marginal

A marginal cost approach identifies factors that will be impacted by demographic or land use changes and allocates the changes on a marginal basis. These variable factors are determined through a detailed examination of the applicable budgets and conversations with appropriate staff. In these instances, the projection factor is identified as *Direct Entry* or by specific factor (e.g., cumulative assessed value for property tax calculations). Further description is provided in this document where appropriate.

Fixed

Revenue and cost factors that are directly attributable to new development are included in the fiscal impact analysis. Some factors—or a portion—are not expected to be impacted by demographic changes and are fixed in the analysis. As with the variable factors, fixed factors are determined through a detailed examination of applicable budgets and conversations with staff.

GENERAL FUND REVENUE FACTORS

Property Taxes

City General Fund Property Tax revenues and projection factors used in the Fiscal Impact Analysis are shown in Figure C1. The table shows revenue category, specific revenue type, base year (FY15) budget amount, projection methodology and the level of service (LOS) standard/dollar per demand unit.

Figure C1. General Fund Property Tax Level of Service Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Property Taxes	Property Taxes-Residential	$123,015,413	CUM RES AV	$12.61
	Property Taxes-Nonresidential		CUM NONRES AV	$20.38
	Tax Title Redeemed	$0	FIXED	$0.00
	Tax Foreclosure	$0	FIXED	$0.00

Customized/Marginal Calculations and Notes

- Property tax revenue is calculated by multiplying the assessed values for each land use type by the appropriate tax rate shown above in Figure C1. Figure C2 shows the assumptions for assessed value in the Union Square and Boynton Yard areas.

Figure C2: Assessed Value Assumptions

Residential	Assessed Value*
Residential Units	$190,000 Per Unit
Affordable Units	$91,200 Per Unit
Nonresidential	**Assessed Value***
Retail	$340 Per Sq. Ft.
Creative Enterprise	$200 Per Sq. Ft.
Office	$340 Per Sq. Ft.
*Provided by the City of Somerville	

Excise Taxes

City General Fund Excise Tax revenues and projection factors used in the Fiscal Impact Analysis are shown in Figure C3. For example, Motor Vehicle Excise Tax revenue is projected to increase with population and employment generated within the Study Area. Therefore, the FY2015 revenue ($5,600,000) is divided by the current estimate of population and jobs (100,700) for a revenue factor of $55.61. A similar methodology is used for the Local Meals Excise Tax. For those items that are custom

calculated—other than population, population and jobs, total units, total nonresidential square footage, and fixed—further detail is provided below the figure.

Figure C3: General Fund Excise Tax Level of Service Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Excise Taxes	Motor Vehicle Excise Tax	$5,600,000	POP AND JOBS	$55.61
	Urban Excise	$125,000	FIXED	$0.00
	Local Meals Excise	$1,437,448	POP AND JOBS	$14.27
	Local Option Room Excise	$703,556	HOTEL REVENUE	4.0%

Customized/Marginal Calculations and Notes

- The Local Option Room Tax is calculated using a marginal methodology using the following assumptions. An annual occupancy rate of 81.6% and an average room rental rate of $239 per room. This information is based on 2014 data compiled by Pinnacle Advisory Group for the Somerville/Cambridge area.
-

Penalties and Interest on Taxes

City General Fund Penalties and Interest on Taxes revenues and projection factors used in the Fiscal Impact Analysis are shown in Figure C4. It is assumed in this analysis that all taxes are collected at a 100% rate. Therefore, it is assumed there is no increase in Penalties and Interest on Taxes as a result of Union Square and Boynton Yards.

Figure C4: General Fund Penalties & Interest on Taxes Level of Service Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Penalties & Interest on Taxes	Interest - Personal Pro	$5,000	FIXED	$0.00
	Interest - Real Estate	$200,000	FIXED	$0.00
	Interest - Excise Tax	$16,000	FIXED	$0.00
	Interest - Tax Title	$175,000	FIXED	$0.00
	Penalities Tax Title	$0	FIXED	$0.00
	Demand & Penalties	$350,000	FIXED	$0.00
	Penalties Non Criminal	$44,485	FIXED	$0.00
	Penalties Non Criminal	$65,145	FIXED	$0.00

PILOT Payments

City General Fund PILOT Payments revenue and projection factors used in the Fiscal Impact Analysis are shown in Figure C5. It is assumed no increase in PILOT Payments as a result of Union Square and Boynton Yards.

Figure C5: General Fund PILOT Payments Level of Service Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
PILOT Payments	Payments in Lieu of Taxes	$280,000	FIXED	$0.00

Charges-Trash

City General Fund Charges-Trash revenues and projection factors used in the Fiscal Impact Analysis are shown in Figure C6. For example, discussions with City staff indicate that residential trash fees are likely to increase with additional population growth in the City. Therefore, the FY2015 revenue ($30,000) is divided by the current estimate of population (75,754) for a revenue factor of $0.40. A similar methodology is used for Sanitation Fees, which is assumed to increase with population and jobs.

Figure C6: General Fund Charges-Trash Level of Service Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Charges - Trash	Residential Trash Fee	$30,000	POPULATION	$0.40
	Sanitation Fees	$70,000	POP AND JOBS	$0.70

Fees

City General Fund Fees revenue and projection factors used in the Fiscal Impact Analysis is shown in Figure C7. For example, it is expected that Copies of Records are likely to increase with additional population and employment growth in the City. Therefore, the FY2015 revenue ($90,000) is divided by the current estimate of population and jobs (100,700) for a revenue factor of $0.90. A similar methodology is used for several of the other Fee revenues.

Figure C7: General Fund Fees Level of Service Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Fees	Advertising	$12,000	FIXED	$0.00
	Bus Certificate	$30,000	FIXED	$0.00
	Cert of Liens	$160,000	POP AND JOBS	$1.59
	Condo Appl Fee	$65,000	FIXED	$0.00
	Constable Fees	$1,500	FIXED	$0.00
	Copies of Records	$90,300	POP AND JOBS	$0.90
	Police Detail Surcharge	$160,000	FIXED	$0.00
	Fire Detail Surcharge	$20,000	FIXED	$0.00
	Custodial Detail	$8,000	FIXED	$0.00
	False Alarm Fee	$45,000	POP AND JOBS	$0.45
	Fingerprinting Fees	$2,000	FIXED	$0.00
	Fire Alarm reimb	$125,000	POP AND JOBS	$1.24
	Misc Fees	$32,625	FIXED	$0.00
	Notarization	$400	FIXED	$0.00
	Parking Fine CC Fee	$145	FIXED	$0.00
	Police Cruiser Fees	$18,000	FIXED	$0.00
	Returned check Fee	$3,000	FIXED	$0.00
	Smoke Detector Insp.	$50,000	POP AND JOBS	$0.50
	SPGA Fees	$1,125	FIXED	$0.00
	Witness Fees	$100	FIXED	$0.00
	Curb Cut Fee	$12,000	FIXED	$0.00
	Temporary No Parking	$45,625	FIXED	$0.00
	Taxicab Reinspection Fee	$150	FIXED	$0.00
	Pool Fees	$7,500	FIXED	$0.00
	Bus routes revenue	$0	FIXED	$0.00
	Bus Shelter Advertising	$20,000	FIXED	$0.00
	E-Rate Reimbursement	$3,500	FIXED	$0.00
	Bike Advertising Fee	$70,800	FIXED	$0.00
	Sealing Fees	$22,000	FIXED	$0.00

Rentals

City General Fund Rental revenue and projection factors used in the Fiscal Impact Analysis is shown in Figure C8. Conversations with City staff indicate both of these revenue sources are not likely to be impacted by new development within the City, and will be considered fixed within the fiscal impact analysis.

Figure C8: General Fund Rental Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Rentals	Rental Income	$18,400	FIXED	$0.00
	Building Use Revenue	$57,000	FIXED	$0.00

Other Department Revenue

City General Fund Other Department revenue and projection factors used in the Fiscal Impact Analysis is shown in Figure C9. It is expected that Planning and Zoning fees will likely increase with additional population growth in the City. Therefore, the FY2015 revenue ($120,000) is divided by the current estimate of population and jobs (100,700) for a revenue factor of $1.19. Commission on Machines revenue is assumed to remain fixed relative to new development.

Figure C9: General Fund Other Department Revenue Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Other Department Revenue	Planning & Zoning	$120,000	POP AND JOBS	$1.19
	Commission on Machines	$500	FIXED	$0.00

License and Permit Revenue

City General Fund License and Permit revenue and projection factors used in the Fiscal Impact Analysis is shown in Figure C10. Several revenues are considered variable in this analysis and are projected to increase with population or additional population and employment. Development permit-related revenue are Direct Entries in the fiscal impact model, based on projections of this revenue provided by City staff. Projected one-time revenue generated by Union Square is estimated at $11,437,168. Boynton Yards is estimated at $13,842,330.

Figure C10: General Fund License and Permit Revenue Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Licenses and Permits	Club Restr LIC-7 Day	$20,800	FIXED	$0.00
	Common Victuallers	$55,000	FIXED	$0.00
	Innholder License	$1,500	FIXED	$0.00
	Malt & Wines EDC Int	$3,200	FIXED	$0.00
	Malt Bev & Wine Store	$22,500	POP AND JOBS	$0.22
	Malt Bev/Wine Restrn	$32,000	POP AND JOBS	$0.32
	Package Store LLC	$64,000	FIXED	$0.00
	Restaurant LIC-Liqur	$250,000	POP AND JOBS	$2.48
	Spec Alcohol License	$2,500	FIXED	$0.00
	Auto Amusement Device	$0	FIXED	$0.00
	Bill/Pool/Bowl/LIC	$1,500	FIXED	$0.00
	Builders License	$350	FIXED	$0.00
	Close out Sale	$0	FIXED	$0.00
	Constables License	$3,750	FIXED	$0.00
	Dog Kennel License	$0	FIXED	$0.00
	Dog License	$42,000	POPULATION	$0.55
	Drainlayer License	$10,000	FIXED	$0.00
	Entertainment LIC	$32,800	FIXED	$0.00
	Funeral Direct LICS	$380	FIXED	$0.00
	Hawker/Peddler Lion	$1,800	FIXED	$0.00
	Junk Dealther License	$3,750	FIXED	$0.00
	Livery/Limousine	$300	FIXED	$0.00
	Lodging License	$22,000	FIXED	$0.00
	Milk License	$7,500	FIXED	$0.00
	Moving Vans & Pods	$50,000	POPULATION	$0.66
	Outdoor Parking Space	$14,000	FIXED	$0.00
	Outdoor Seating	$5,100	FIXED	$0.00
	Physical Therapy Lic	$8,500	FIXED	$0.00
	Physicians/Osteopth	$0	FIXED	$0.00
	signs and Awning	$5,000	FIXED	$0.00
	Swim Pool Lic	$1,440	FIXED	$0.00
	Taxi Stand Lic	$4,500	FIXED	$0.00
	Taxicab Medallion	$30,250	FIXED	$0.00
	Used Car Dealer Lic	$30,250	FIXED	$0.00
	Fortune Teller	$500	FIXED	$0.00
	Urban agriculture	$200	FIXED	$0.00
	BOA Mobile Food Venor	$600	FIXED	$0.00
	Burial Permits	$3,100	FIXED	$0.00
	Dumpster Contractors	$5,280	FIXED	$0.00
	Explosive Stor Flamb	$13,000	FIXED	$0.00
	Extended Retail Hour	$8,250	FIXED	$0.00
	Flammable Permit	$24,750	FIXED	$0.00
	Garage Permits	$60,500	FIXED	$0.00
	Marriage Permit	$27,500	FIXED	$0.00
	Police Revolver Permit	$6,500	FIXED	$0.00
	Raffle/Bazaar Permit	$250	FIXED	$0.00
	Residnet Park Permit	$1,596,000	POPULATION	$21.07
	Retail&Food Permit	$190,000	POPULATION	$2.51
	Sworn Weigher	$0	FIXED	$0.00
	Building Permit	$3,838,660	DIRECT ENTRY	$0.00
	Dumpster Permit	$48,000	FIXED	$0.00
	Electrical Permit	$250,000	DIRECT ENTRY	$0.00
	Gas Permit	$63,000	FIXED	$0.00
	Grant of Location	$11,000	FIXED	$0.00
	Housing certificate	$330	FIXED	$0.00
	Inspection	$60,000	DIRECT ENTRY	$0.00
	Occupancy Permit	$31,500	DIRECT ENTRY	$0.00
	Plumbing Permit	$120,000	DIRECT ENTRY	$0.00
	Sidewalk Opening	$100,000	FIXED	$0.00
	Open air Vendor	$0	FIXED	$0.00

Fines and Forfeitures

City General Fund Fines and Forfeitures revenue and projection factors used in the Fiscal Impact Analysis is shown in Figure C11. For example, it is expected that parking violation-related revenue is a function of increased vehicular traffic. Library fines are projected to increase with population. Ordinance violations are expected to increase with additional population and job growth. Several revenue categories are considered fixed relative to new growth.

Figure C11: General Fund Fines and Forfeitures Level of Service Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Fines and Forfeits	Court Fines	$5,000	FIXED	$0.00
	Mass Court Moving	$370,000	TOTAL TRIPS	$2.60
	Farking Fines	$5,187,507	TOTAL TRIPS	$36.47
	Parking Fine Surcharge	$66,000	TOTAL TRIPS	$0.46
	Library Fines	$20,000	FIXED	$0.00
	Landcourt/Recording	$10,000	FIXED	$0.00
	Ordinance Violations	$283,660	POP AND JOBS	$2.82
	Restitution	$500	FIXED	$0.00
	RMV Non Renewal	$66,000	FIXED	$0.00
	Tobacco Fines	$1,200	FIXED	$0.00
	Delinquent Parking	$30,000	TOTAL TRIPS	$0.21
	Expired Reg & Safety Insp.	$170,000	FIXED	$0.00
	Towing Charges	$45,000	FIXED	$0.00

Investment Income

General Fund Investment Income totals $200,000 in FY2015. This revenue source is not considered a growth-related revenue source in the Fiscal Impact Analysis.

Miscellaneous Recurring Revenue

Miscellaneous Recurring revenue and projection factors used in the Fiscal Impact Analysis are shown in Figure C12. This revenue source is not considered a growth-related revenue source in the Fiscal Impact Analysis.

Figure C12: General Fund Miscellaneous Recurring Revenue Level of Service Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Misc Recurring	Medicare Reimbursement	$500,000	FIXED	$0.00
	Medicad Reimbursement	$700,100	FIXED	$0.00
	Bank Revenue Share	$100,000	FIXED	$0.00

State Revenue

Revenue from State sources to the General Fund projection factors used in the Fiscal Impact Analysis are shown in Figure C13. School Aid Chapter 70 revenue is projected to increase with enrollment.

Unrestricted General Government revenue is projected to increase with population. The remaining revenue sources are considered fixed relative to new development.

Figure C13: General Fund State Revenue Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
State Revenue	Reim Abate surv/Elderly	$298,796	FIXED	$0.00
	School Aid Chapter 70	$19,582,488	TOTAL ENROLLMENT	$4,094.19
	Construction of School	$4,230,955	FIXED	$0.00
	Charter School	$1,504,680	FIXED	$0.00
	Unrestricted General Government	$22,420,271	POPULATION	$295.96
	Veterans and Benefits	$298,065	FIXED	$0.00
	State Qualified Bonds	$0	FIXED	$0.00

Other Financing Sources

Revenue from Other Financing Sources consist of Transfers from the Parking Fund, transfers for indirect costs, as well as free cash. For purposes of this analysis, these revenue sources are not considered growth related.

Figure C13: General Fund Other Financing Sources Factors/Projection Methodologies

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Other Financing	Transfers from Parking	$1,736,899	FIXED	$0.00
	Indirectr Costs/Enterprise	$1,105,382	FIXED	$0.00
	Free Cash	$3,500,000	FIXED	$0.00

OPERATING EXPENDITURES

Board of Alderman

Figure C14 provides an inventory of the City's General Fund *Board of Alderman* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C14 all operating expenditures are considered fixed relative to new development.

Figure C14: General Alderman Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Board of Alderman			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$284,922	FIXED	$0.00
Ordinary Maintenance	$40,660	FIXED	$0.00

Clerk of Committees

Figure C15 provides an inventory of the City's General Fund *Clerk of Committees* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C15 non-personnel operating expenditures are projected based on an increase in population and jobs. For personnel, discussions with staff indicate these positions are not impacted by additional development within the City.

Figure C15: Clerk of Committees Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Clerk of Committees			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$56,244	SEE BELOW	$0.00
Ordinary Maintenance	$1,000	POP AND JOBS	$0.01
TOTAL	$57,244		
Clerk of Committees STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Clerk of Committees	1.0	FIXED	0
Asst. Clerk of Committees	1.0	FIXED	0
Asst. Clerk of Committees	1.0	FIXED	0

Office of Sustainability

Figure C16 provides an inventory of the City's General Fund *Office of Sustainability* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C16 discussions with staff indicate these expenditures are not impacted by additional development within the City.

Figure C16: Office of Sustainability Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Office of Sustainability and Environment			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$155,867	FIXED	$0.00
Ordinary Maintenance	$4,500	FIXED	$0.00
TOTAL	$160,367		
Office of Sustainability and Environment STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Director	1.0	FIXED	0
Environmental Coordinator	1.0	FIXED	0

Communications and Community Engagement

Figure C17 provides an inventory of the City's General Fund *Communications and Community Engagement* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level

of service. As shown below in Figure C17 non-personnel operating expenditures are projected based on an increase in population or population and jobs. One staff position is considered variable related to new development, and is projected based on additional population growth.

Figure C17: Communications and Community Engagement Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Communications and Community Engagement			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$322,338	SEE BELOW	$0.00
Ordinary Maintenance	$24,825	POP AND JOBS	$0.25
TOTAL	$347,163		
Communications and Community Engagement STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Media Manager	1.0	FIXED	0
Social Media Specialist	1.0	FIXED	0
Principal Clerk	1.0	FIXED	0
Language Liaison	3.0	POPULATION	20,201

Personnel

Figure C18 provides an inventory of the City's General Fund *Personnel* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C18 an average cost approach is used to personnel and operating costs that assumes *general development* in the City, represented by both population and jobs, will impact the department.

Figure C18: Personnel Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Personnel			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$716,337	POP AND JOBS	$7.11
Ordinary Maintenance	$277,775	POP AND JOBS	$2.76
Personnel Special ITE	$61,010	FIXED	$0.00
TOTAL	$1,055,122		

Information Technology

Figure C19 provides an inventory of the City's General Fund *Information Technology* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C19 operating expenditures are projected based on an increase in *general development*

in the City, represented by both population and jobs. Conversations with staff indicate additional personnel are not expected as a result of Union Square and Boynton Yards.

Figure C19: Information Technology Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Information Technology			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$682,828	FIXED	$0.00
Ordinary Maintenance	$1,239,380	POP AND JOBS	$12.31
TOTAL	$1,922,208		

Elections

Figure C20 provides an inventory of the City's General Fund *Elections* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C20 some of the *personnel and operating* expenditures are projected to increase with population growth in the City.

Figure C20: Elections Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Elections			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$350,833	POPULATION	$4.63
Ordinary Maintenance	$98,370	POPULATION	$1.30
TOTAL	$449,203		

Veterans Services

Figure C21 provides an inventory of the City's General Fund *Veterans Services* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C21 *personnel* expenditures are considered fixed relative to new development. *Operating* expenditures are projected to increase with population growth in the City.

Figure C21: Veterans Services Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Veterans Services			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$114,878	FIXED	$0.00
Ordinary Maintenance	$606,669	POPULATION	$8.01
TOTAL	$721,547		

Treasurer/Collector

Figure C22 provides an inventory of the City's General Fund *Treasurer/Collector* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C22 operating and personnel expenditures are projected based on an increase in *general development* in the City, represented by both population and jobs.

Figure C22: Treasurer/Collector Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Finance - Treasurer/Collector			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$633,094	POP AND JOBS	$6.29
Ordinary Maintenance	$286,740	POP AND JOBS	$2.85
TOTAL	$919,834		

Auditing

Figure C23 provides an inventory of the City's General Fund *Auditing* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C23 non-personnel *operating* expenditures are projected to increase with additional population and employment growth. Most staff position are considered fixed relative to new development. However, the Principal Clerk position is considered variable and is projected to increase with population and employment growth.

Figure C23: Auditing Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Finance - Auditing			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$726,519	SEE BELOW	$0.00
Ordinary Maintenance	$107,095	POP AND JOBS	$1.06
TOTAL	$833,614		
Finance - Auditing STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Finance Director/City Auditor	1.0	FIXED	0
Deputy City Auditor	1.0	FIXED	0
Internal Auditor	1.0	FIXED	0
Accounting Analyst	1.0	FIXED	0
Accounts Payable Supervisor	1.0	FIXED	0
Systems Accountant	1.0	FIXED	0
Grant Accountant	1.0	FIXED	0
Administrative Assistant	1.0	FIXED	0
Principal Clerk I	2.0	POP AND JOBS	35,581
Senior Clerk	1.0	FIXED	0

Purchasing

Figure C24 provides an inventory of the City's General Fund *Purchasing* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C24 operating and personnel expenditures are projected based on an increase in *general development* in the City, represented by both population and jobs.

Figure C24: Purchasing Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Finance - Purchasing			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$372,717	POP AND JOBS	$3.70
Ordinary Maintenance	$34,570	POP AND JOBS	$0.34

Board of Assessors

Figure C25 provides an inventory of the City's General Fund *Board of Assessors* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C25 non-personnel *operating* expenditures are projected to increase with additional population and employment growth. Several staff position are considered fixed relative to new development.

However, several positions are considered variable and is projected to increase with population and employment growth.

Figure C25: Board of Assessors Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Finance - Board of Assessors			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$511,594	SEE BELOW	$0.00
Ordinary Maintenance	$68,100	POP AND JOBS	$0.68
TOTAL	$579,694		
Finance - Board of Assessors STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Chief Assessor/Chairman of Board	1.0	FIXED	0
Board Member/Assessor	2.0	FIXED	0
Dir. Of Comm assessments	1.0	FIXED	0
Mgr of Residential Assessments	1.0	FIXED	0
Sales/Personal Prop. Analyst	1.0	POP AND JOBS	65,455
Assessor Analyst	1.0	POP AND JOBS	62,938
Administrative Assistant	1.0	FIXED	0
Principal Clerk II	1.0	POP AND JOBS	62,938
Jr. Clerk II	1.0	POP AND JOBS	65,455

Grants

Figure C26 provides an inventory of the City's General Fund *Grants* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C26 operating and personnel expenditures are considered fixed relative to new development in the City.

Figure C26: Grants Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Finance - Grants			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$127,364	FIXED	$0.00
Ordinary Maintenance	$5,776	FIXED	$0.00

City Clerk

Figure C27 provides an inventory of the City's General Fund *City Clerk* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C27

non-personnel *operating* expenditures are projected to increase with additional population and employment growth. Several staff position are considered fixed relative to new development. However, the Principal Clerk position is considered variable and is projected to increase with population and employment growth.

Figure C27: City Clerk Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
City Clerk			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$423,855	SEE BELOW	$0.00
Ordinary Maintenance	$167,617	POP AND JOBS	$1.66
TOTAL	$591,472		
City Clerk STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
City Clerk	1.0	FIXED	0
Archivist	1.0	FIXED	0
Admin. Assisstant	1.0	FIXED	0
Executive Secretary	1.0	FIXED	0
Head Clerk	1.0	FIXED	0
Principal Clerk II	2.0	POP AND JOBS	39,105

Law

Figure C28 provides an inventory of the City's General Fund *Law* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C28 operating and personnel expenditures are projected based on an increase in *general development* in the City, represented by both population and jobs.

Figure C28: Law Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Law			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$671,778	POP AND JOBS	$6.67
Ordinary Maintenance	$175,275	POP AND JOBS	$1.74
TOTAL	$847,053		

OSPCD-Administration

Figure C29 provides an inventory of the City's General Fund *OSPCD-Administration* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C29 personnel expenditures are considered fixed relative to new development, while operating expenditures are projected to increase with population and employment growth.

Figure C29: OSPCD Administration Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
OSPCD - Administration			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$246,407	FIXED	$0.00
Ordinary Maintenance	$21,550	POP AND JOBS	$0.21
TOTAL	$267,957		

OSPCD-Planning and Zoning

Figure C30 provides an inventory of the City's General Fund *OSPCD-Planning and Zoning* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C30 non-personnel *operating* expenditures are projected to increase with additional population and employment growth. However, the Planner position is considered variable and is projected to increase with population and employment growth.

Figure C30: OSPCD Planning and Zoning Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
OSPCD - Planning and Zoning			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$601,928	SEE BELOW	$0.00
Ordinary Maintenance	$285,558	POP AND JOBS	$2.84
TOTAL	$887,486		
OSPCD - Planning and Zoning STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Director of P & Z	1.0	FIXED	0
Planners	2.0	POP AND JOBS	36,084
Planner	0.0	FIXED	0
Administrative Assistant	1.0	FIXED	0
Senior Planner - Station area	1.0	FIXED	0
Senior Planner - Zoning	1.0	FIXED	0
Planner - Plan & Historic Pres.	1.0	FIXED	0
Director of Historic Pres.	1.0	FIXED	0
Planner Historic Pres.	1.0	FIXED	0
Board Member Planning	7.0	FIXED	0
Board Member ZBA	5.0	FIXED	0
Assoc. Board Member ZBA	2.0	FIXED	0

OSPCD-Housing

Figure C31 provides an inventory of the City's General Fund *OSPCD-Housing* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure

type, budget amount, projection methodology, and current level of service. As shown below in Figure C31 personnel and operating expenditures are projected to increase with population growth.

Figure C31: OSPCD Housing Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
OSPCD - Housing			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$220,398	POPULATION	$2.91
Ordinary Maintenance	$2,000	POPULATION	$0.03
TOTAL	$222,398		

OSPCD-Economic Development

Figure C32 provides an inventory of the City's General Fund *OSPCD-Economic Development* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C32 personnel and operating expenditures are projected to increase with population and employment growth.

Figure C31: OSPCD Economic Development Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
OSPCD - Economic Development			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$244,394	POP AND JOBS	$2.43
Ordinary Maintenance	$90,417	POP AND JOBS	$0.90
TOTAL	$334,811		

OSPCD-Transportation and Infrastructure

Figure C32 provides an inventory of the City's General Fund *OSPCD-Transportation and Infrastructure* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C32 non-personnel *operating* expenditures are projected to increase with additional population and employment growth. However, the Planner positions are considered variable and is projected to increase with population and employment growth.

Figure C32: OSPCD Transportation and Infrastructure Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
OSPCD - Transportation & Infrastructure			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$231,272	SEE BELOW	$0.00
Ordinary Maintenance	$197,080	POP AND JOBS	$1.96
TOTAL	$428,352		
OSPCD - Transportation & Infrastructure STAFFING INPUT			Estimated Service Capacity
Category	FY2015 FTE Positions	Project Using Which Demand Base?	Per Position
Director Trans & Infrastructre	1.0	FIXED	0
Director of Parks & Open Space	1.0	FIXED	0
Seniro Planner Landscape	1.0	FIXED	0
Planners	3.0	POP AND JOBS	29,371

Inspectional Services

Figure C33 provides an inventory of the City's General Fund *Inspectional Services* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C33 personnel and operating expenditures are projected to increase with population and employment growth. However, since these expenditures are related to development review, they are one-time costs that occur annually. In other words, they do not increase on a cumulative basis.

Figure C33: Inspectional Services Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
OSPCD - Inspection Services			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$1,635,046	POP AND JOBS	$16.24
Ordinary Maintenance	$316,093	POP AND JOBS	$3.14
TOTAL	$1,951,139		

Emergency Management

Figure C34 provides an inventory of the City's General Fund *Emergency Management* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C34 operating expenditures are projected to increase with population and employment growth. Personnel expenditures are assumed to be fixed relative to new development.

Figure C34: Emergency Management Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Emergency Management			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$20,747	FIXED	$0.00
Ordinary Maintenance	$5,700	POP AND JOBS	$0.06
TOTAL	$26,447		

Fire

Figure C35 provides an inventory of the City's General Fund *Fire* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C35 operating expenditures are projected to increase with additional fire calls for service generated by new development. Conversations with City staff indicate additional fire companies will not be added as a result of Union Square and Boynton Yards.

Figure C35: Fire Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Fire			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$15,105,523	FIXED	$0.00
Ordinary Maintenance	$405,600	TOTAL FIRE CALLS	$33.61
TOTAL	$15,511,123		

Fire Alarm

Figure C36 provides an inventory of the City's General Fund *Fire Alarm* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C36 operating expenditures are assumed to remain fixed relative to development in Union Square and Boynton Yards.

Figure C36: Fire Alarm Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Fire Alarm			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$914,540	FIXED	$0.00
Ordinary Maintenance	$0	FIXED	$0.00
TOTAL	$914,540		

Police E-911

Figure C37 provides an inventory of the City's General Fund *Police E-911* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C37 non-personnel operating expenditures are projected to increase with additional public safety (police and fire) calls for service. Conversations with City staff indicate additional E-911 operators will not be added as a result of Union Square and Boynton Yards.

Figure C37: Police E-911 Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Police E-911			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$495,500	SEE BELOW	$0.00
Ordinary Maintenance	$0	FIXED	$0.00
TOTAL	$495,500		
Police E-911 STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
E-911 Operator	14.0	TOTAL PUBLIC SAFETY CALLS	3,354

Police

Figure C38 provides an inventory of the City's General Fund *Police* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C38 non-personnel *operating* expenditures are projected to increase with additional increases in police calls for service. Most of the supervisory positions are assumed to remain fixed relative to new development. Lieutenant, Sergeant and Patrol Officer positions are projected to increase additional police calls for service.

Figure C38: Police Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Police			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$14,277,463	SEE BELOW	$0.00
Ordinary Maintenance	$589,883	TOTAL POLICE CALLS	$16.15
Rental - Buildings	$51,314	TOTAL POLICE CALLS	$1.41
Station Lease	$0	DIRECT ENTRY	$1,734,000
TOTAL	$14,918,660		
Police STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Chief	1.0	FIXED	0
Deputy Chief	2.0	FIXED	0
Captain	4.0	FIXED	0
Lieutenant	11.0	TOTAL POLICE CALLS	3,112
Sergeant	16.0	TOTAL POLICE CALLS	2,182
Patrol Officers	97.0	TOTAL POLICE CALLS	373

Animal Control

Figure C39 provides an inventory of the City's General Fund *Animal Control* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C39 non-personnel *operating* expenditures are projected to increase with additional population growth in the City. Animal Control Officers are projected to also increase with additional population growth.

Figure C39: Animal Control Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Police - Animal Control			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$101,980	SEE BELOW	$0.00
Ordinary Maintenance	$16,395	POPULATION	$0.22
TOTAL	$118,375		
Police - Animal Control STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Animal Control Officer	2.0	POPULATION	31,564

Traffic and Parking

Figure C40 provides an inventory of the City's General Fund *Traffic and Parking* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure

C40 non-personnel *operating* expenditures are projected to increase with additional vehicle trips within the City. Discussions with staff indicate many of the positions in this department are not likely to be impacted by additional development. However, several positions are projected to be impacted by additional need for parking enforcement on new streets, generated by additional vehicle trips.

Figure C40: Traffic and Parking Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Traffic and Parking			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$2,497,911	SEE BELOW	$0.00
Ordinary Maintenance	$1,363,918	TOTAL TRIPS	$8.57
TOTAL	$3,861,829		
Traffic and Parking STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Department Leadership	5.0	FIXED	0
PT Hearing Officer	2.0	TOTAL TRIPS	66,310
PT Office Staff	1.0	FIXED	0
Administrative Assistant	1.0	FIXED	0
Head Clerk	2.0	FIXED	0
Principal Clerk	2.0	FIXED	0
Junior Clerk	6.0	TOTAL TRIPS	23,758
Repairman	4.0	TOTAL TRIPS	33,420
Foreman	1.0	FIXED	0
PCO Working Supervisor	2.0	FIXED	0
Parking Control Officer	27.0	TOTAL TRIPS	5,738
Sr. Projects Manager	1.0	FIXED	0

Human and Human Services

Figure C41 provides an inventory of the City's General Fund *Health and Human Services* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C41 non-personnel *operating* expenditures are projected to increase with additional population growth within the City. Discussions with staff indicate many of the positions in this department are not likely to be impacted by additional development. However, School Nurses are projected to be impacted by additional school enrollment. Public Health Nurses are projected to increase with additional population growth.

Figure C41: Health and Human Services Expenditures - Level of Service Factors/Projection Methodologies

Health and Human Services			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$1,759,683	SEE BELOW	$0.00
Ordinary Maintenance	$160,330	POPULATION	$2.12
TOTAL	$1,920,013		
Health and Human Services STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Director of Health of Human Svcs	2.0	FIXED	0
Director of Commissions	1.0	FIXED	0
ADA Coordinator	1.0	FIXED	0
Administrative Assistant	1.0	FIXED	0
Public Health Nurse	2.0	POPULATION	27,145
School Nurse	17.0	TOTAL ENROLLMENT	270
Clinical Youth Specialist	1.0	FIXED	0
School Nurse Leader	1.0	FIXED	0
Shape of Somerville Dir.	1.0	FIXED	0
Grants Administrator	1.0	FIXED	0
Director of Prevention Services	1.0	FIXED	0
SUS Coordinator	1.0	FIXED	0
Data Entry Clerk	1.0	FIXED	0
Hearing Vision Tester	1.0	FIXED	0
SCAP & Tobacco Control DIRECTOR	2.0	FIXED	0
Gay/Lesbian/Transgender	1.0	FIXED	0
Board of Health/Chair/Member	3.0	FIXED	0
Board of Health/Vision Tester	2.0	FIXED	0
	40.0		

Library

Figure C42 provides an inventory of the City's General Fund *Library* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C42 non-personnel *operating* expenditures are projected to increase with additional population growth within the City. Discussions with staff indicate many of the positions in this department are not likely to be impacted by additional development. However, Librarians and Library Technicians are projected to increase with additional population growth.

Figure C42: Library Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS

Libraries

Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Salaries and Wages	$1,643,651	SEE BELOW	$0.00
Ordinary Maintenance	$321,000	POPULATION	$4.24
TOTAL	$1,964,651		

Libraries STAFFING INPUT

Category	FY2015 FTE Positions	Project Using Which Demand Base?	Estimated Service Capacity Per Position
Library Director	1.0	FIXED	0
Administrative Assistant	1.0	FIXED	0
Branch Librarian	2.0	FIXED	0
Librarians	11.0	POPULATION	6,600
Library Technicians	13.0	POPULATION	5,619

Recreation

Figure C43 provides an inventory of the City's General Fund *Recreation* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C43 non-personnel *operating* expenditures are projected to increase with additional population growth within the City. Discussions with staff indicate many of the positions in this department are not likely to be impacted by additional development. However, Outreach Coordinators are projected to increase with additional population growth.

Figure C43: Recreation Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Recreation			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$340,515	SEE BELOW	$0.00
Ordinary Maintenance	$211,125	POPULATION	$2.79
Part-Time Help	$240,000	POPULATION	$3.17
TOTAL	$791,640		
Recreation STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Recreation Superintendent	1.0	FIXED	0
Program Developer	1.0	FIXED	0
Outreach Coordinator	2.0	POPULATION	25,756
Administrative Assistant	1.0	FIXED	0

Public Works-Administration

Figure C44 provides an inventory of the City's General Fund *Public Works-Administration* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C44 operating expenditures are assumed to increase with *general* growth in the City, represented by population and jobs.

Figure C44: DPW-Administration Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
DPW - Administration			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$573,831	FIXED	$0.00
Ordinary Maintenance	$811,450	POP AND JOBS	$8.06
TOTAL	$1,385,281		

Public Works- Electrical

Figure C45 provides an inventory of the City's General Fund *Public Works-Electrical* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown in Figure C45 non-personnel *operating* expenditures are projected to increase with additional vehicle trips within the City. Discussions with staff indicate several of the positions in this department are not likely to be impacted by additional development. However, Signal Maintainers are projected to increase with additional additional vehicle trips within the City.

Figure C45: DPW-Electrical Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
DPW - Electrical			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$291,079	FIXED	$0.00
Ordinary Maintenance	$229,000	TOTAL TRIPS	$1.44
TOTAL	$520,079		
DPW - Electrical STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
PV Foreman	1.0	FIXED	0
Electrician	1.0	FIXED	0
Signal Maintainer	2.0	TOTAL TRIPS	55,701

Public Works-Engineering

Figure C46 provides an inventory of the City's General Fund *Public Works-Engineering* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C46 operating expenditures are assumed to increase with *general* growth in the City, represented by population and jobs. Personnel are assumed to be fixed relative to new development.

Figure C46: DPW-Engineering Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
DPW - Engineering			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$156,834	FIXED	$0.00
Ordinary Maintenance	$207,100	POP AND JOBS	$2.06
TOTAL	$363,934		

Public Works-Highways

Figure C47 provides an inventory of the City's General Fund *Public Works-Highways* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C47 non-personnel *operating* expenditures are projected to increase with additional vehicle trips within the City. Discussions with staff indicate several of the positions in this department are not likely to be impacted by additional development. However, three positions are projected to increase with additional additional vehicle trips within the City.

Figure C47: DPW-Highway Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
DPW - Highway			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$2,244,425	FIXED	$0.00
Ordinary Maintenance	$953,845	TOTAL TRIPS	$5.99
TOTAL	$3,198,270		
DPW - Highway STAFFING INPUT			Estimated Service Capacity Per Position
Category	FY2015 FTE Positions	Project Using Which Demand Base?	
Highway Superintendent	1.0	FIXED	0
Fleet Manager	1.0	FIXED	0
Yard Foreman	1.0	FIXED	0
Motor Equipment Foreman	1.0	FIXED	0
Waste Collection Inspector	3.0	FIXED	0
PW Laborer-Other	4.0	TOTAL TRIPS	33,023
Motor Equipment Repairman	3.0	TOTAL TRIPS	41,776
Public Works Laborer	18.0	TOTAL TRIPS	8,446
HMEO\PWL	1.0	FIXED	0
Temporary Laborer	1.0	FIXED	0
Watchman	1.0	FIXED	0

Public Works-Snow Removal

Figure C48 provides an inventory of the City's General Fund *Public Works-Snow Removal* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C48 snow removal is provided on a contract basis. Since the increase in new lane miles resulting from Union Square and Boynton Yards is minimal when compared to the amount of existing lane mileage citywide, these expenditures are considered fixed in the fiscal impact analysis.

Figure C48: DPW-Snow Removal Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Snow Removal			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$0	FIXED	$0.00
Ordinary Maintenance	$0	FIXED	$0.00
Snow Removal	$900,000	FIXED	$0.00
Police Detail	$36,000	FIXED	$0.00
TOTAL	$936,000		

Public Works-Solid Waste

Figure C49 provides an inventory of the City's General Fund *Public Works-Solid Waste* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C49 solid waste collection is provided to primarily residential properties and schools. Therefore, these expenditures are projected to increase with additional population growth.

Figure C49: Public Works-Solid Waste Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Solid Waste			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$0	FIXED	$0.00
Ordinary Maintenance	$4,607,000	POPULATION	$60.82

Public Works-Buildings and Grounds

Figure C50 provides an inventory of the City's General Fund *Public Works-Buildings and Grounds* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C50 buildings and grounds expenditures are expected to increase with additional square footage of City building space.

Figure C50: Public Works-Buildings and Grounds Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
DPW - Buildings and Grounds			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$2,072,503	FACILITY SF	$5.08
Ordinary Maintenance	$7,153,742	FACILITY SF	$17.53
TOTAL	$9,226,245		

Public Works-School Custodians

Figure C51 provides an inventory of the City's General Fund *Public Works-School Custodians* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C51 non-personnel *operating* expenditures are projected to increase with additional school building square footage. Discussions with staff indicate many of the positions in this department are not likely to be impacted by additional development. However, Jr. Building Custodians are projected to increase with additional additional vehicle trips within the City.

Figure C51: DPW-School Custodians Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
School Custodians			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$1,697,651	SEE BELOW	$0.00
Ordinary Maintenance	$854,000	SCHOOL SF	$0.66
TOTAL	$2,551,651		
School Custodians STAFFING INPUT			Estimated Service Capacity
Category	FY2015 FTE Positions	Project Using Which Demand Base?	Per Position
Facilities Supervisor	1.0	FIXED	0
Asst. Super of Night Constodians	1.0	FIXED	0
Sr. Custodian 1	2.0	FIXED	0
Sr. Custodian 2	5.0	FIXED	0
Jr. Bldg Custodian	23.0	SCHOOL SF	54,301

Public Works-Weights and Measures

Figure C52 provides an inventory of the City's General Fund *Public Works-Weights and Measures and Grounds* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C52 weights and measures expenditures are assumed to be fixed relative to new growth.

Figure C52: Public Works-Weights and Measures Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Weights and Measures			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Salaries and Wages	$119,554	FIXED	$0.00
Ordinary Maintenance	$2,790	FIXED	$0.00

School Committee

Figure C53 provides an inventory of the City's General Fund *School Committee* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C53 expenditures for the School Committee are assumed to be fixed relative to new growth.

Figure C53: School Committee Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
School Committee			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Staff	$73,549	FIXED	$0.00
Services	$13,400	FIXED	$0.00
Supplies	$2,100	FIXED	$0.00
Other	$200	FIXED	$0.00
Equipment		FIXED	$0.00
TOTAL	$89,249		

School Administration

Figure C54 provides an inventory of the City's General Fund *School Administration* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C54 non-personnel expenditures are expected to increase with additional enrollment.

Figure C54: School Administration Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
School Administration			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Staff	$1,291,348	FIXED	$0.00
Services	$280,500	TOTAL ENROLLMENT	$58.65
Supplies	$51,672	TOTAL ENROLLMENT	$10.80
Other	$47,900	TOTAL ENROLLMENT	$10.01
TOTAL	$1,671,420		

Curriculum

Figure C55 provides an inventory of the City's General Fund *Curriculum* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C55 non-personnel expenditures are expected to increase with additional enrollment.

Figure C55: Curriculum Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Curriculum			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Staff	$1,404,923	FIXED	$0.00
Services	$212,300	TOTAL ENROLLMENT	$44.39
Supplies	$199,304	TOTAL ENROLLMENT	$41.67
Other	$16,200	TOTAL ENROLLMENT	$3.39
Equipment	$0	FIXED	$0.00
TOTAL	$1,832,727		

Student Services

Figure C56 provides an inventory of the City's General Fund *Student Services* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C56 non-personnel expenditures are expected to increase with additional enrollment.

Figure C56: Student Services Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Student Services			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Staff	$482,868	FIXED	$0.00
Services	$724,280	TOTAL ENROLLMENT	$151.43
Supplies	$34,600	TOTAL ENROLLMENT	$7.23
Other	$900	TOTAL ENROLLMENT	$0.19
TOTAL	$1,242,648		

Technology

Figure C57 provides an inventory of the City's General Fund *Technology* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C57 non-personnel expenditures are expected to increase with additional enrollment.

Figure C57: Technology Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Technology			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Staff	$460,768	FIXED	$0.00
Services	$75,300	TOTAL ENROLLMENT	$15.74
Supplies	$398,840	TOTAL ENROLLMENT	$83.39
Other	$2,360	TOTAL ENROLLMENT	$0.49
TOTAL	$937,268		

Facilities

Figure C58 provides an inventory of the City's General Fund *Facilities* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C58 non-personnel expenditures are expected to increase with additional square footage of school space.

Figure C58: Facilities Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
Facilities			LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Staff	$263,000	FIXED	$0.00
Services	$5,500	SCHOOL SF	$0.00
Supplies	$185,453	SCHOOL SF	$0.14
Other	$64,000	SCHOOL SF	$0.05
TOTAL	$517,953		

PK-12 Programs

Figure C59 provides an inventory of the City's General Fund *PK-12 Programs* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C59 non-personnel expenditures are expected to increase with additional enrollment.

Figure C59: PK-12 Programs Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS			
PK-12 Programs	Early Childhood School Day Programs & Readi		LOS Std
Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	$ per Demand Unit
Staff	$0	FIXED	$0.00
Services	$416,258	K-8 ENROLLMENT	$119.61
TOTAL	$416,258		

District Programs

Figure C60 provides an inventory of the City's General Fund *District Programs* expenditure factors used in the fiscal impact analysis. The table provides the departmental budget broken down into expenditure type, budget amount, projection methodology, and current level of service. As shown below in Figure C60 non-personnel expenditures are expected to increase with additional enrollment.

Figure C60: PK-12 Programs Expenditures - Level of Service Factors/Projection Methodologies

BASE YEAR BUDGET AND FACTOR PROJECTION METHODOLOGY INPUTS

District Programs

Expenditure Name	FY2015 Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Staff	$4,374,763	FIXED	$0.00
Services	$314,000	TOTAL ENROLLMENT	$65.65
Supplies	$0	FIXED	$0.00
Other	$230,000	TOTAL ENROLLMENT	$48.09
TOTAL	$4,918,763		

CAPITAL EXPENDITURES

General Government

According to conversations with City staff, there will be no construction of additional general government space as a result of Union Square or Boynton Yards.

Police

As documented elsewhere in this report, additional Police space will be needed as a result of demolition of the existing facility in Union Square. It is assumed this space will be leased, so it appears as an operating cost to the Police Department. The need for additional Police vehicles will be generated as new Police officers are hired by the fiscal impact model. The cost of these vehicles is assumed to be $35,000, with a two-year useful life.

Parks

There are no assumed park acquisition and construction costs because the zoning strategy requires this of private development.

Road/Streetscape

City staff provided cost assumptions for required streetscape improvements necessary for Union Square and Boynton Yards. The estimated cost for Union Square is $25 million. The estimated cost for Boynton Yards is $18.8 million. It is assumed these costs are incurred in year one through the issuance of a 15-year bond, with an interest rate of 2.5 percent.

Public Utilities

City staff provided cost assumptions for required public utility improvements necessary for Union Square and Boynton Yards. The estimated cost for Union Square is $35 million. The estimated cost for Boynton Yards is $21.2 million. The recently received $3,340,000 in grant revenue to offset these costs. It is assumed these costs are incurred in year one through the issuance of a 30-year bond, with an interest rate of 4.0 percent.

Fire

As documented elsewhere in this report, additional Fire Station space will be needed as a result of demolition of the existing facility in Union Square. City staff providing a cost estimate of $21 million. It is assumed these costs are incurred in year one through the issuance of a 20-year bond, with an interest rate of 2.0 percent.

Library

There are no assumed costs in this report for a branch library for Union Square and Boynton Yards. The expectation is that any Library facilities will be funded through other means.

Schools

It was decided with City and School District staff, that an average cost per student seat would be used to estimate impacts on school facilities. A primary reason for this approach is that it has not been determined if additional capacity needs would be provided through a new school or additions to existing schools. Additional enrollment was projected using pupil generation rates calculated by TischlerBise, using the most recent US Census Bureau Public Use Microsample Data. The assumptions for multifamily units are highlighted in the shaded text.

Figure C61: Pupil Generation Rates

Somerville Public School Students Per Housing Unit

K to 8 Students	*0-2 Bdrms*	*3 Bdrms*	*4 Bdrms*	*5+ Bdrms*	*Wt Avg*
Single Unit	0.08	0.14	0.26	0.30	0.15
2+ Units	0.06	0.16	0.24	0.00	0.092

9 to 12 Students	*0-2 Bdrms*	*3 Bdrms*	*4 Bdrms*	*5+ Bdrms*	*Wt Avg*
Single Unit	0.00	0.09	0.01	0.23	0.05
2+ Units	0.02	0.08	0.02	0.00	0.036

Total Students Per Housing U	*0-2 Bdrms*	*3 Bdrms*	*4 Bdrms*	*5+ Bdrms*	*Wt Avg*
Single Unit	0.08	0.23	0.28	0.53	0.20
2+ Units	0.08	0.25	0.26	0.00	0.13

Source: TischlerBise estimates for Somerville using
Census Bureau, 1-Year 2013 5% Public Use Microdata Sample
for Massachusetts PUMA 00507 (calibrated to Somerville enrollment and 2013 ACS housing unit estimate).

The assumed capital cost per student seat for a K-8 school was estimated at $18,462. This is based on a cost per school of $21,488,000 divided by capacity of 650. The assumed capital cost per student seat for a high school was estimated at $52,045. This is based on a cost per school of $57,2500,000 divided by capacity of 1,100.

APPENDIX B – TRIP AND PARKING GENERATION METHODOLOGY FOR UNION SQUARE

1 TRIP GENERATION

Traditional transportation impact studies seek to estimate the number of vehicle trips a building or set of uses will generate. The most widely accepted source of this information is the Institute of Transportation Engineers (ITE) database of vehicle trips generated based on counts across the United States. The following memo outlines how these rates have been adjusted for Union Square's walkable, mixed-use, transit-rich, bicycle accessible urban area. The analysis also includes a breakdown of the remaining person-trips that are not in private vehicles into bicycling, transit, and walking trips.

VEHICLE TRIP GENERATION MODELING METHODOLOGY

Program

The Union Square team created a detailed, parcel-by-parcel program. For trip generation purposes, the Nelson\Nygaard team used a summary of proposed land uses by site, outlined below:

Table 1 Union Square Proposed Program Summary

Use	D Parcels	Boynton Yards	Milk Square	Scattered Sites
Apartments	533	1,030	566	220
Hotel Rooms	175	0	0	0
Retail (SF)	131,550	169,039	172,273	73,250
Office (SF)	624,900	1,808,894	987,726	170,000

ITE Demand Rates

ITE rates account for vehicular trips as they are primarily derived from observations at suburban locations where all trips are made by automobile. In a mixed-use, transit-oriented context the overall number of person trips (in/out of a particular use) tends to be higher than typical ITE rates. To account for the overall higher rate of person trips, and since additional vehicle trip reduction factors are being applied, the ITE rate + 1 standard deviation is used to estimate the

overall number of person trips (Table 2). One standard deviation is still within a "normal" range of trip generation, but at the high end.

Table 2 shows the maximum and minimum rates used for each land use category.

Table 2 ITE +1 standard deviation rates for each general land use category

		Apartment rate per unit (ITE Code)	Hotel rate per key (ITE Code)	General Retail rate per 1,000 sf (ITE Code)	Office rate per 1,000 sf (ITE Code)
Minimum	Weekday	6.26 (233)	8.79 (311)	59.84 (826)	13.95 (76)
	AM Peak Hour	0.85 (222)	1.21 (311)	2.27 (820)	2.53 (76)
	PM Peak Hour	0.94 (222)	1.31 (311)	4.54 (826)	2.25 (76)
Maximum	Weekday	9.43 (221)	14.96 (310)	63.59 (820)	17.18 (710)
	AM Peak Hour	1.5 (231)	1.51 (310)	10.39 (826)	2.96 (710)
	PM Peak Hour	1.71 (231)	1.57 (310)	6.45 (820)	2.86 (710)

The Union Square build-out plan is planning level, with general use categories assumed for trip generation purposes. The team thus applied ITE vehicle trip generation rates adjusted by one standard deviation for each relevant ITE use code within a given category to calculate a minimum and maximum trips generated. The reported number is the average of the minimum and maximum. Use categories are outlined below:

- Apartments:
  - Apartment (220)
  - Low Rise Apartment (221)
  - High Rise Apartment (222)
  - Mid Rise Apartment (223)
  - Residential Condominium/Townhouse (230)
  - Low-Rise Residential Condominium/Townhouse (231)
  - High-Rise Residential Condominium Townhouse (232)
  - Luxury Condominium/Townhouse (233)
- Hotel:
  - Hotel (310)
  - All Suites Hotel (331)
  - Business Hotel (312)
- Retail:
  - Shopping Center (826)
  - Specialty Retail Center (826)
- Office
  - General Office Building (710)
  - Research and Development Center (76)

If no rate was given for a certain time, it was not included. For example, there is no Weekday daily rate for Luxury Condominium/Townhouse (233).

To convert trips generated to entering and exiting for the peak hours, the team used a weighted average of the calculated entering/exiting trips for each use within a general category, while holding the trips generated constant.

Thus, the following equation represents the *ITE + 1 std* for a given use:

$$Average\ (Maximum\ (ITE\ Rate + 1\ std\ dev) * Land\ Use\ Program, Minimum\ (ITE\ Rate + 1\ std\ dev) * Land\ Use\ Program)$$

Trip Adjustments

Based on Union Square's urban context, mix of uses, and access by a mix of modes, the team used the following equation and inputs to model vehicle demand:

Convert ITE Standards to Person Trips:

ITE's rates are for motor vehicle trips and do not account for the number of passengers within an automobile when counted. To fully convert ITE rates to person trips, the ITE rate + 1 standard deviation is adjusted for vehicle occupancy. In 2000, the average vehicle occupancy for Middlesex County was 1.13 persons/vehicle. The equation is as follows:

(ITE + 1 *standard deviation*[1]) * Vehicle Occupancy

Motor Vehicle Trips:

To convert from person trips to motor vehicle trips, the model starts with the total number of person trips (see above) and uses a number of adjustments to estimate the number of new trips that will be made by motor vehicle:

(ITE + 1 *standard deviation*) * Vehicle Occupancy * Mode Share * Internal Capture * Mobility Management

or

(ITE+1*sd*) * 1.13 * 0.50 * 0.85 * 0.90

The first adjustment comes from the SomerVision objective that at least 50% of all new trips should be made by transit, walking, or bicycling. This **mode share** variable immediately sets aside at least 50% of the total person trips into the desired modes of travel.

The second adjustment accounts for **internal capture**, which are trips that remain on the local street network in the same neighborhood where development is located and do not have regional transportation implications. A study of 239 mixed-use sites in Atlanta, Boston, Houston, Portland, Sacramento and Seattle found an average of 18% internal capture. Fifty-nine of these sites were located in Boston, which had an internal capture rate of 16.9%.[2] The equation used for Union Square uses an internal capture rate of 15%.

The last adjustment applies a reduction for **mobility management**, another important objective from SomerVision. Mobility management helps people know about and use all of the transportation services that are available in their location. Reductions for mobility management

[1] As calculated above

[2] Ewing et al., "Traffic Generated by Mixed-Use Developments-Six-Region Study Using Consistent Built Environmental Measures." P.252

are set at 10% to account for services, information, and incentives that will decrease driving demand even lower than today's multimodal context provides.

Motor Vehicle Trip Generation Results

The methodology above resulted in trips entering and exiting each cluster of developments as well as a daily total, shown in Table 3 below.

Table 3 Vehicle Trips Generated

Site[1]	D Parcels	Boynton Yards	Milk Square	Scattered Sites
Daily	9,259	17,919	11,689	3,419
AM Entering	803	1,849	1,110	260
AM Exiting	451	774	518	181
PM Entering	409	697	458	156
PM Exiting	772	1,737	1,041	255

Note: Vehicle trips are different from person-trips in vehicles.

WALKING, BICYCLING AND TRANSIT TRIP GENERATION

Estimating transit, walking, and bicycling trips is rarely a part of traditional urban trip generation studies. This study used a combination of commute data on mode shares and national standards on vehicle trip generation to estimate pedestrian, bicycle, and transit trips. However, this methodology is unproven and imperfect and simply provides a planning-level estimate of multimodal trips.

To more accurately estimate trips using these modes, future studies should draw on observed counts at comparable sites.

The original charge of this project was to estimate the number of vehicle trips at peak hour and for a whole day from each building. As described above, this included applying some factors that accounted for 50% travel by other modes, internal capture, and transportation demand management. Nelson\Nygaard used a very conservative (higher) base trip generation rate based on national standards set out in the ITE manual, which are typically based on suburban land use patterns. To account for an overall increase in "trips" in an urban context (i.e. running out to do an errand in the middle of the day, breakfast across the street from one's house before work) we used these suburban ITE rates + 1 standard deviation above. This may still underestimate the number of trips!

The 50% travel by other modes is derived from a journey-to-work (JTW) mode share estimate for Union Square as well as development requirements. This addresses travel in the peak two hours (AM and PM) but by some estimates only accounts for 20% of all trips.[3]In reality, pedestrian trips are likely much higher than, for example, ~15% of all trips in Union Square – consider a Starbucks in an urban area.

Internally captured trips for the purposes of vehicle trip generation are irrelevant, as the assumption is that someone may park at an office and walk to get a cup of coffee across the street or within the same development. However, for a "heat map" of pedestrian activity, these trips should be included.

Given these issues, the methodology for these trips is described briefly below and shown in greater detail in the following section:

1. Estimate vehicle demand based on previously established model (50% ITE trip gen + 1 std dev converted to person-trips w/credits for TDM and internal capture) - ~40%
2. Assume 20% of all remaining person-trips trips use transit
3. Assume the remainder of trips (~40%) are 2/5 bike, 3/5 walk. This would include "internally captured" trip credits taken from vehicle trip generation

[3] US Department of Commerce, "American Community Survey Reports: Commuting in the United States: 2009". Published September 2011. Accessed at http://www.census.gov/content/dam/Census/library/publications/2011/acs/acs-15.pdf see footnote 2.

Table 4 shows the summary results. Note that for this analysis, no “trips” are calculated to be work from home or any other mode (i.e. taxis). Overall, in this estimate, approximately 40% of person-trips are in vehicles.

Table 4 Estimated Person-Trips by Mode, Union Square

		D Parcels	Boynton Yards	Milk Square	Scattered Sites
Transit Trips (Person)	Daily	5,517	10,677	6,965	2,037
	AM Entering	478	1,102	661	155
	AM Exiting	269	461	308	108
	PM Entering	243	416	273	93
	PM Exiting	460	1,035	620	152
Ped Trips (Person)	Daily	6,909	17,919	8,723	2,551
	AM Entering	599	1,849	828	194
	AM Exiting	337	774	386	135
	PM Entering	305	697	342	117
	PM Exiting	576	1,737	777	191
Bike Trips (Person)	Daily	4,606	13,373	5,815	1,701
	AM Entering	399	1,380	552	129
	AM Exiting	224	577	258	90
	PM Entering	203	521	228	78
	PM Exiting	384	1,296	518	127
Person Trips Total*	Daily	27,583	8,915	34,823	10,185
	AM Entering	2,392	920	3,306	773
	AM Exiting	1,343	385	1,542	540
	PM Entering	1,217	347	1,363	466
	PM Exiting	2,301	864	3,102	761

*Note: Includes person-trips in vehicles.

This analysis results in the following mode split assumptions for new development in the Union Square plan area:

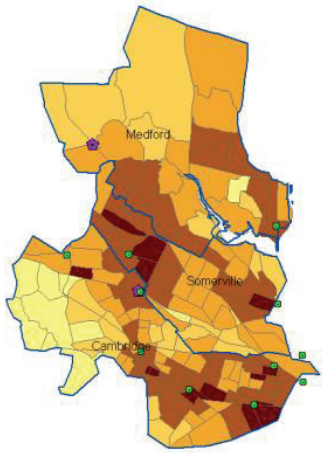
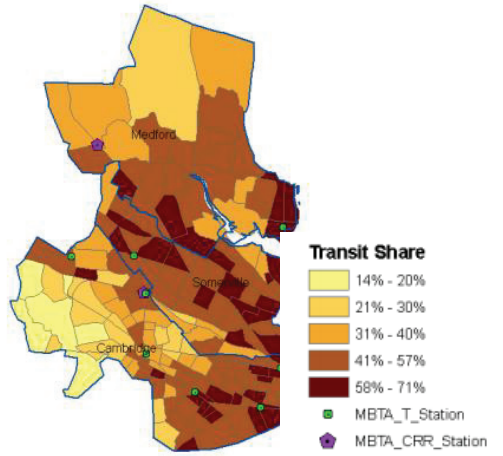
Mode Type	%
Driving	38%
Public Transit	20%
Walking	25%
Bicycling	17%
Total	**100%**

ADDITIONAL INFORMATION:

Several of Union Square's context variables both now and into the future indicate that the vehicle trip estimate above is likely conservative (higher than expected). These include:

Union Square Transit Infrastructure Is Improving

The Central Transportation Planning Staff (CTPS) of the Boston Region Metropolitan Planning Organization conducts the federally required metropolitan transportation planning process for the area. CTPS has modeled transit mode share in 2030 after the Green Line is built and found that it will increase dramatically, matching those of Somerville areas near the MBTA Red Line.[4]

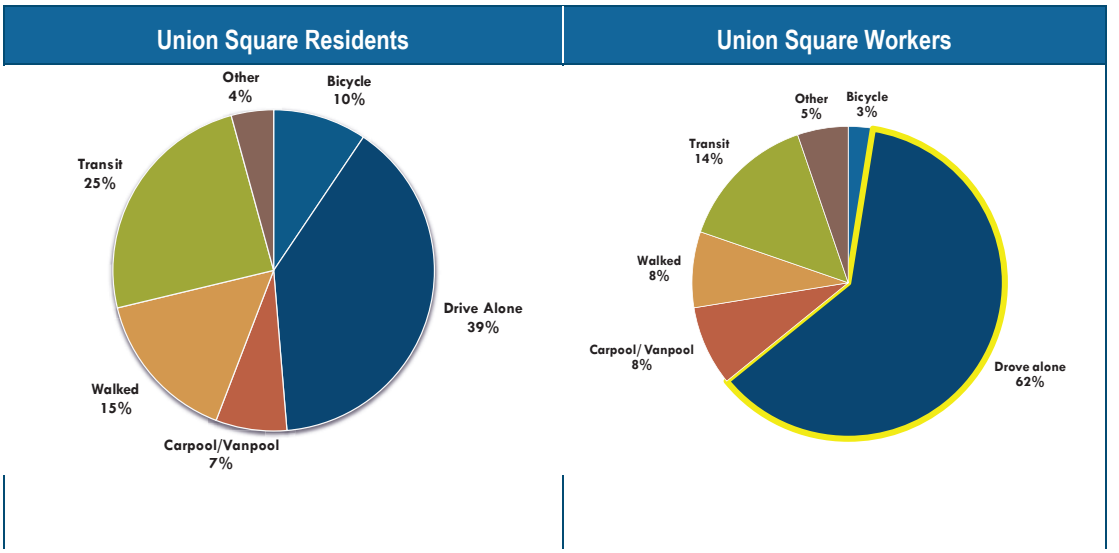
Residency Transit Share 2006 – Trips to Boston and Cambridge	Residency Transit Share – CTPS Model 2030 HBW– Trips to Boston and Cambridge
	

Source: Kaplan, Bruce and Scott Peterson. April 29, 2009. *Representation of Somerville Transit Mode Shares in the CTPS Model*. Boston, MA Central Transportation Planning Staff. Accessed at http://greenlineextension.eot.state.ma.us/documents/about/Topics/ModeShareMemo_090429.pdf September 7, 2015.

Union Square Has Low Rates of Driving Already

As shown in the graphs below, Union Square residents *and* commuters already drive at relatively low rates (39% and 62%, respectively):

[4]Kaplan, Bruce and Scott Peterson. April 29, 2009. *Representation of Somerville Transit Mode Shares in the CTPS Model*. Boston, MA Central Transportation Planning Staff. Accessed at http://greenlineextension.eot.state.ma.us/documents/about/Topics/ModeShareMemo_090429.pdf September 7, 2015.



Source: American Community Survey 2013 5-year estimates

Source: American Community Survey 2006-2010 extracted through the Census Transportation Planning Package

External Retail Walk Trips Will Be At Least 12%

A survey of local-serving retail in multiple residential neighborhoods used a combination of counts and an intercept survey to show that walking rates were high amongst those living near local-serving shopping districts.[5] **Walk rates were between 12 and 58% for residents within a half mile**. In Union Square, some of this will be internally captured trips, but other trips will be from residential areas to the new retail available in the US2 parcels.

The New Walking Network Will Increase Walk Shares

In addition to studies focused on retail uses, a 2010 meta-study of mode choice and the built environment found that the elasticity of walking with respect to intersection/ density is 0.39. The US2 developments will add multiple alleys, which will decrease circuitous routes and make it easier for pedestrians to access the area. For each percentage increase in intersection density, the **walking share could increase by up to 39%.**

[5] Kuzmyak et al., NCHRP Report 95: Traveler Response to Transportation System Changes - Chapter 15: Land Use and Site Design. P.15-51 Based on 6 surveys in California.

TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) measures collectively work to change how, when, where, and why people travel. Supporting alternative modes - cycling, walking, transit, and carpooling - gives employees, residents, and visitors incentives to reduce reliance on the single-occupant vehicle. Typical TDM measures and impacts are described below:

TDM Measure	Cost Estimates- Planning Level (Cost in US Dollars unless noted)	Traffic/ Parking / Mode Split Benefit	Cost/ Benefit
Parking Cash-Out	**Varies on depending on location and parking supply factors.** Effective cash out for employees/ residents ranges around $30-$150/ month, but requires less parking to be built (cost of parking ranges $5,000-$40,000)	Reduces automobile commuting by 10-30% Reduces parking demand and saves cost of providing parking.	High
Unbundling Parking	**None** Reduces rent/lease costs as parking is not subsidized	Reduces vehicle ownership and parking demand 10-20%.	High
Shared Parking	Staff/ management costs to administer	Reduction of 10-30% of parking required	High
Bicycle Infrastructure	$3,100 to $31,000 per kilometer depending on the condition of the pavement, the need to remove and repaint the lane lines, and other factors.	In U.S. cities with more than 250,000 residents, each additional mile of bike lanes per square mile is associated with a 1% increase bicycle commute mode share.	Medium
Bike Share*	**Capital Cost per unit:** Approximately $50,000 **Operational Costs***: $27,300 ($CAN) **Yearly Memberships**- $80-100 (a majority provide bulk discounts)	Increase in mode share of bicyclists 1-2% Reduction in automobile usage by 5%-30%	Medium
Bike Depot	**Construction Costs:** $500,000-$1,000,000 (depending on size and amenities) **Operating Costs**: $100,000- $150,000 **Membership:** $80-$100/ year	Reduces parking and traffic by 5-15%	Low-Medium
On-Site Secure Bicycle Parking	**Varies with number of bicycle parking and type of storage** Ranges: $200-$600	Reduces parking and traffic by 5-15%	High
Bike Rack	$150-300 (for a two bicycle rack)	Reduces parking and traffic by 1-5%	Medium
On-Site Bicycle Changing Facilities	**Construction costs associated with development.**	Reduces parking and traffic by 5-15%	Medium
On-Site Bicycle Repair	$100-$300 (basic bicycle repair tools)	Reduces parking and traffic by 1-5%	Medium

TDM Measure	Cost Estimates- Planning Level (Cost in US Dollars unless noted)	Traffic/ Parking / Mode Split Benefit	Cost/ Benefit
Pedestrian Infrastructure Improvements	**Varies by type of improvement** **Sidewalks:** $5-$10 per square foot **Handicap accessible curb ramp:**$800-$1,000 **Crosswalk:** $100-$400 (one leg) **Curb Extensions**: $3,000-7,000) **Planting Tree**: ($150-$300)	Reduces parking and traffic by 5-15%	Medium -High
District- Based Shuttle	**Service Operation:** $80-$100 / hour **Purchase of shuttle/ bus:** $30,000 (10-14 passenger) -$100,000 (30-passenger)	Reduces up to 40% of vehicle trips to shuttle trips *This percentage varies dramatically depending on type of service, frequency, location/ geography, origin/destination etc.*	Medium -High
Car Share	**Designating Car Share Spaces in Development:** No cost associated with designating carshare parking locations within development, however surface lots must be accessible 24/7 to public users and on-street parking near the development must be within the "Home Area" zone. **Purchasing Corporate/ Bulk Memberships:** There is often a bulk discount associated with purchasing bulk memberships for employees or residents.	Each car share vehicle eliminates demand for 15-20 private vehicles and each car share member reduces their driving by an average of 50%	High
TMA Coordinator	**Varies- based on staffing from part time responsibilities to full time coordinator**	Reduce requirements 10-40% at worksites with effective parking and mobility management programs. (Cannot combine reduction effects with the Coordinator's TMA implementation strategies.)	High
Carpool/ Vanpool	**Carpool:** None **Vanpool**: $30,000-$40,000 (purchase of 10-14 person shuttle/ bus) **Operating costs** can be offset by charging participants- average $100/ month	Reduces parking and traffic by 5-10%	Low-Medium
Rideshare	**None**	Reduces parking and traffic by 1-5%	Medium -High
Guaranteed Ride Home	**Varies depending on the number of rides designated to employee/ resident and form of transportation)**	Reduces automobile commuting by 15-25%	Medium -High
Discount Transit Passes	$50-$120/ month	Reduces automobile commuting by 4% to 22% with an average reduction of 11%	Medium

TDM Measure	Cost Estimates- Planning Level (Cost in US Dollars unless noted)	Traffic/ Parking / Mode Split Benefit	Cost/ Benefit
	(depending on subsidy discount rate, generally 50%-60% of a full price monthly transit pass for full time employees)		

2 PARKING GENERATION

This technical memorandum provides a brief overview of the process and analysis methodology to model weekday parking demand in Union Square, as well as results and strategic recommendations.

Overall, the modeled demand is higher than the parking provided in the Neighborhood Plan build-out plan. Regardless, in order to properly manage parking, there are several measures to take that are recommended for the City, building managers, and developers alike.

APPROACH

Typically, in mixed use developments, customers and visitors can visit multiple destinations, though only park once. Moreover, throughout the day, different uses have different peak demands: for example, an office may have a high demand until 5pm, and a restaurant open for dinner may have a high demand only after 5pm.

Union Square, in total, acts like a large mixed-use development, where each land use or building would not require its own dedicated supply of parking. However, traditional analysis and zoning are typically based on such assumptions. In fact, an analysis of current parking demand in Union Square showed that only about **65% of existing spaces** are utilized at the highest observed period of demand (counts taken in September 2015).

When modeling expected parking demand for the proposed buildout of Union Square, the team's parking model includes localized, targeted adjustments that account for the nature of mixed-use developments as well as context-specific factors in Union Square.

MODEL ANALYSIS AND RESULTS

The Institute of Transportation Engineers (ITE) produces a report titled *Parking Generation*, which is the prevailing national standard in determining parking demand for a development. ITE standards are based on parking demand studies submitted to ITE by a variety of parties, including public agencies, developers and consulting firms. ITE parking rates often do not reflect the actual demand profile of mixed use areas.

Based on Union Square's mixed use and accessible context, Nelson\Nygaard used an adapted shared parking model based on Urban Land Institute's (ULI) Shared Parking Manual (2nd

Edition, 2005), and ITE's Parking Generation (4th Edition, 2010) to model demand. This model accounts for the sharing of uses over the course of a day, as shown in Figure 1 below.

Moreover, Union Square is located in a walkable, bikeable, transit-rich environment. The MBTA's Green Line extension will certainly improve access by other modes and further reduce expected parking demand. The proposed buildout of Union Square will also include extensive Transportation Demand Management measures to encourage employees and visitors alike to visit the site using non-drive alone modes. Therefore, a traditional parking demand analysis is not appropriate for this context.

Thus, the expected parking demand model is tailored to include the following inputs:

- Land use in Union Square
- Shared use by time of day
- Context variables, including:
  - Mode shares in Union Square
  - Internal capture (trips that access multiple uses without generating additional parking demand, i.e. walking from a residence to a coffee shop, or from the office to a restaurant)
  - TDM program impacts

The following describes these adjustments in detail.

Demand by Land Use

The parking model starts with the assumed program: land use square footage and number of units provided by the USQ team Table 5.

Table 5 Union Square Proposed Program Summary

Use	D Parcels	Boynton Yards	Milk Square	Scattered Sites
Apartments	533	1,030	566	220
Hotel Rooms	175	0	0	0
Retail (SF)	n/a	n/a	115,275	n/a
Office (SF)	624,900	1,808,894	987,726	170,000

Nelson\Nygaard then applied the rates in Table 6 to create a baseline demand in the shared parking model. Where available from ITE, urban parking generation rates are used (Supermarket and Low/Mid-Rise Apartment). TDM is not assumed in urban rates.

Table 6 ITE Codes and Rates

ITE Code (4th Gen)	ITE Code Description	Project Land Use	Weekday Rate	Units
820	Shopping Center (non-Friday weekday, non-December)	General Retail	2.55	1,000 SF

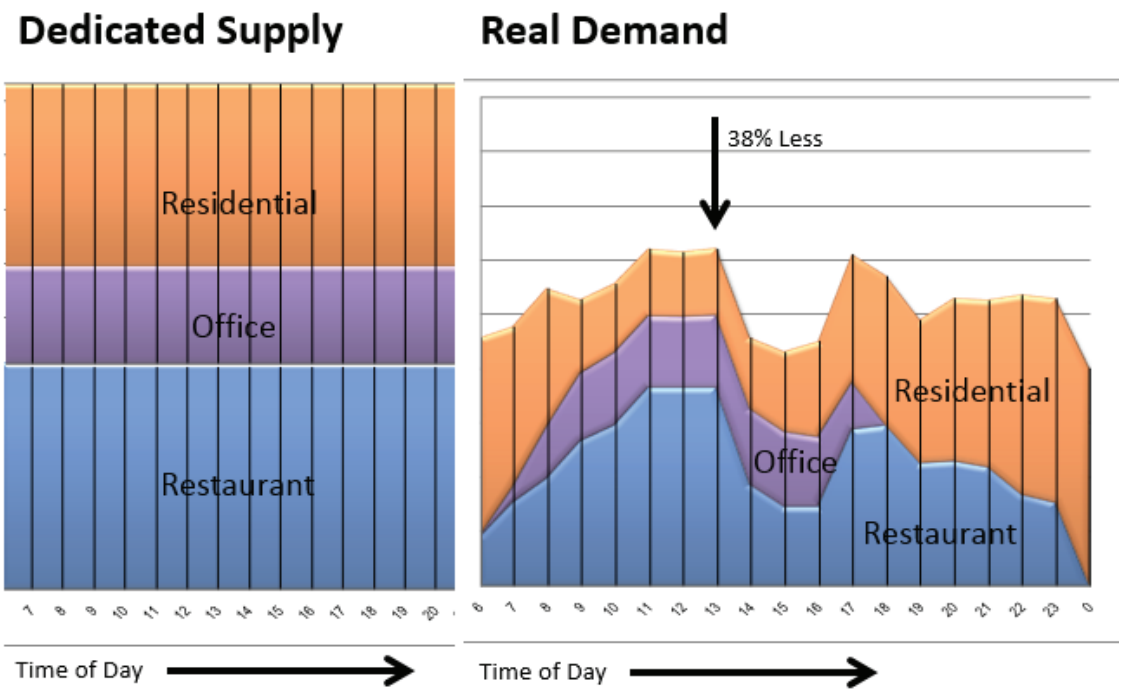
221	Low/Mid-Rise Apartment, Urban	Apartments	1.20	Unit
310	Hotel (Weekday parking demand for five urban study sites, included in Database Description)	Hotel	0.64	Occupied Room[6]
201	Office, Urban	Office	2.47	1,000 SF

Reductions for Demand by Time of Day

Parking demand peaks at different land uses at different times of day. For example, the spaces at a bank are available after close of business (typically 5pm), while those at a residential property may be unused in the middle of the day if residents drive to work. Publically available, or shared private, spaces can therefore serve multiple trips for one user and/or multiple users to different uses.

The Shared Parking Model thus includes parking demand fluctuations at different times of day by land use. These time of day reductions are reviewed initially and occur absent any other parking or travel demand management policies, and usually reduce modeled demand compared to a dedicated supply for each land use (Figure 1).

Figure 1 Example Parking Requirements vs. Real Demand



[6] For the purposes of this study and to create a conservative estimate, all rooms were considered occupied.

Contextual and Environmental Reductions

The Union Square Shared Parking Model adjusts ITE rates based on several factors. These factors were uniquely identified based on Union Square context, shown in Table 8. Factors are applied in different combinations by land use, as outlined in the next section.

An overall parking utilization study was completed in Union Square to understand current parking demand. The observed parking was compared to the existing land use, and calculations showing actual parking demand, rather than modeled, were completed and shown below. The results were used to help benchmark demand calculations and were further compared to other national examples where similar data was available.. The results showed an extremely low demand, as shown in Table 7, even for current Union Square conditions.

Table 7 Parking Demand in American Cities

City/Town	Occupied Square Footage	% Office	% Residential	% Commercial /Retail	% Other	Peak Demand	Weekday Peak	Peak Demand Ratio (per KSF)
St. Paul, MN*	29,000,000	57%	31%	5%	8%	19,170	Midday	0.66
Salem	4,500,000	52%	19%	29%	0%	3,842	10:00 AM	0.86
Savannah, GA	17,200,000	15%	56%	19%	9%	16272	3:00 PM	0.95
Portsmouth, NH*	2,800,000	26%	22%	37%	15%	3,371	12:00 PM	1.18
Santa Monica	4,400,000	Not available				6,900	1:00 PM	1.57
Union Square	3,300,000	12%	57%	16%	15%	2,045	12:00 PM	0.61

Moreover, the land uses are expected to change dramatically with the addition of almost 6 million square feet of build-out. Therefore, while traditional practice is to calibrate the shared parking model with on-the-ground demand, the team took a conservative approach and adjusted down from ITE using context variables shown in Table 8. We note that this approach results in a more conservative (higher) expected parking demand rate than is currently observed in Union Square.

Table 8 Contextual Reductions in Parking Demand

Reduction	% Reduction	Source	Union Square Context
Captive Market Effect: Commercial	32%	Internal capture rates for commercial land uses reported a 32% average reduction.	Union Square has an excellent mix of uses, ranging from retail to office to residential. This

		(Trip Generation Handbook, 2nd Edition. ITE pg. 129 - Districtwide Trip Generation Study, Florida Department of Transportation, District IV, March 1995)	will only improve in the future. Thus, this model input set internal capture to the maximum.
Captive Market Effect: Residential	31%	Internal capture rates from various mixed-use studies --> 11% - 50% residential internal capture observed --> 31% - average residential internal capture (Trip Generation Handbook, 2nd Edition. ITE pg. 129 - Districtwide Trip Generation Study, Florida Department of Transportation, District IV, March 1995)	
Employee TDM Impact	24%	Transportation demand management effectiveness reducing # of commuter vehicles (Trip Generation Handbook, Second Edition. Appendix B - Page 123)	Union Square's accessibility by a mix of modes currently serves as excellent TDM for employees and residents alike. This will only improve in the future – thus the model set this input to the maximum.
Residential TDM Impact	30%	Unbundling the cost of parking from residential property sales/lease cost reduces household vehicle ownership by up to 30% (VTPI Parking Management. (2009))	Living in Union Square does not guarantee one a dedicated parking space. This has been shown to reduce parking demand by residents. The study recommends that future developments "unbundle" parking as a TDM as well as cost-mitigation mechanism.
Transit Access Impact on Retail	0 - 8%	Shopping centers with access to transit services appeared to have lower peak parking demand than those sites without transit service. Range from 1-8% (ITE Parking Generation, 4th ed. P. 227)	Union Square is currently well-served by MBTA bus service and will have high-quality Green Line service. Therefore, this input is set to the maximum.
Residential Mode Adjustment	0% - 30%	Adjustments as low as 50% appear to be appropriate for urban CBD locations. 20% reflects auto ownership in areas that are not downtown but are well served by transit (ULI Shared Parking, Second Edition p.88)	Commute share for residents of Union Square was slightly higher than those commuting to Union Square. Thus the team modeled this in a range.
Office Employee Mode Adjustment	25% - 40%	A mode adjustment of 0.3 to 0.6 is appropriate for downtown office space in areas with paid parking and high-quality transit service (ULI Shared Parking, Second Edition, p.91)	In the future, Union Square will have both paid parking and high-quality transit service. The team used a range for this input.
Employee Parking Share (non-office)	20%	Average share of peak parking demand consumed by employees. (The True Cost of Free Parking. Shoup, Donald. Pg. 86)	Employees respond differently to transportation context changes as they commute in similar patterns daily. Thus it is important to distinguish this group from customers at non-office uses. This was assumed to be consistent across uses.
Office Visitor Parking Share	0 – 4%	Visitor parking accounts for 7-8% of office parking on a per space basis (ULI Shared Parking, Second Edition, p.91)	Visitor parking demand at offices is similarly broken out by the model as influenced by different factors than regular commuters. As the proportion of visitors to different offices varies (i.e. the difference between a call center and a lawyer who sees clients) this number was varied across scenarios.

Note that while the model applies several reductions for Union Square's transit-rich, walkable context, it is still conservative in its estimates. For example, office employee mode share reduction may be as low as 70%, while the model assumed 25-35%.Residential mode share reductions can be as high as 50%, while the model assumed 0-30%.

Modeling Demand by Use

The following section outlines the inputs that affect the parking demand generated by each use. These inputs are generally in the form of reductions for certain or all user groups. Each reduction is applied to the flat line demand generated by ITE-based numbers.

As noted above, the Shared Parking Model includes these reduced rates **plus parking demand fluctuations at different times of day by land use.** Different land uses peak at different times, and the model combines demand across the day to determine an overall peak for the mix of uses.

Each cluster is modeled separately and the results combined, which assumes that parking is shared in each cluster but not across clusters. In reality, parking may be shared across clusters as well.

Retail Uses Peak Demand

For retail uses, the City is following the same policy being used in North Point for retail and restaurant parking. For planning purposes, retail and restaurant parking demand will be accommodated by the on street parking included throughout the new development, but not off-street parking. The exception to this is retail provided at the Target site.

Traditional Peak Parking Demand Ratio: 2.55

Source: ITE *Parking Generation*, 4th Edition (820)

Reduction Factors Applied:

Reduction	% Reduction	Source	Union Square Context
Captive Market Effect: Commercial	32%	Internal capture rates for commercial land uses reported a 32% average reduction. (Trip Generation Handbook, 2nd Edition. ITE pg. 129 - Districtwide Trip Generation Study, Florida Department of Transportation, District IV, March 1995)	Union Square has an excellent mix of uses, ranging from retail to office to residential. This will only improve in the future. Thus, this model input set internal capture to the maximum.
Transit Access Impact on Retail	0 - 8%	Shopping centers with access to transit services appeared to have lower peak parking demand than those sites without transit service. Range from 1-8% (ITE Parking Generation, 4th ed. P. 227)	Union Square is currently well-served by MBTA bus service and will have high-quality Green Line service. Therefore, this input is set to the maximum.
Employee TDM Impact	24%	Transportation demand management effectiveness reducing # of commuter vehicles (Trip Generation Handbook, Second Edition. Appendix B - Page 123)	Union Square's accessibility by a mix of modes currently serves as excellent TDM for employees and residents alike. This will only improve in the future – thus the model set this input to the maximum.
Employee Parking Share (non-office)	20%	Average share of peak parking demand consumed by employees. (The True Cost of Free Parking. Shoup, Donald. Pg. 86)	Employees respond differently to transportation context changes as they commute in similar patterns daily. Thus it is important to distinguish this group from customers at non-office uses. This was assumed to be consistent across uses.

The following equation is used to calculate peak parking demand for retail uses:

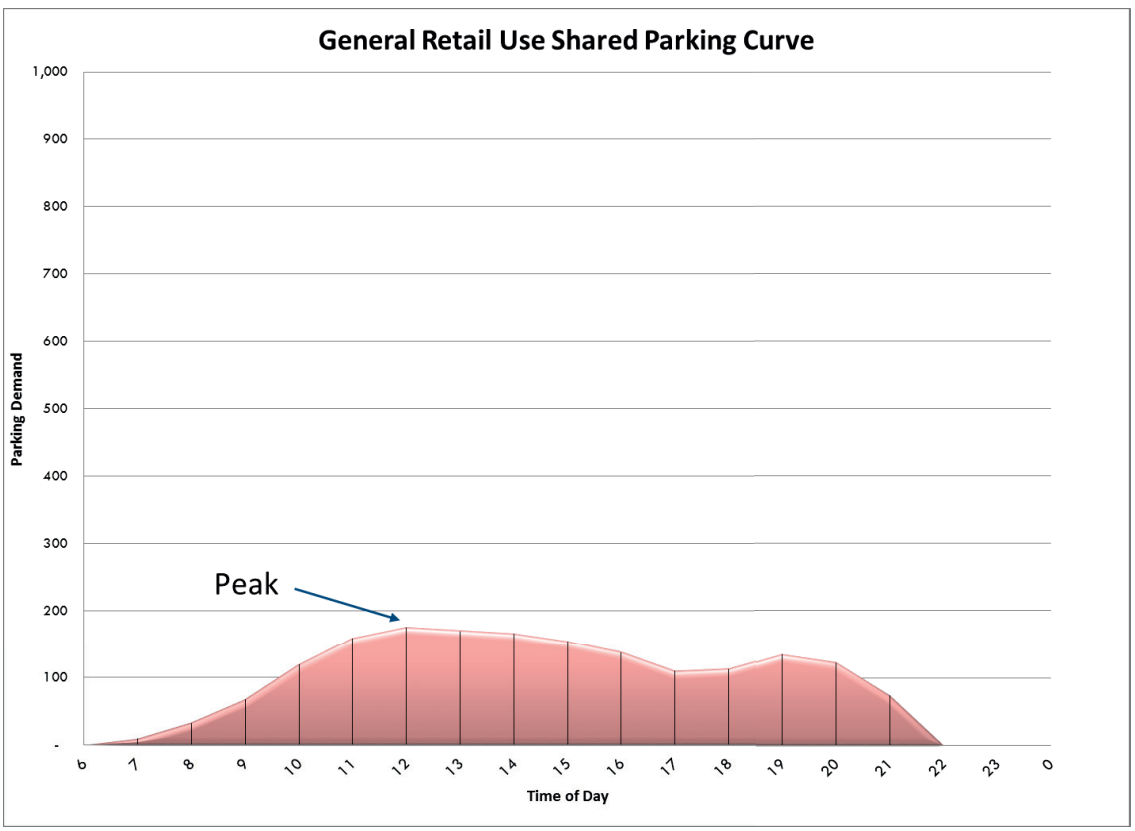
$$(1 - Captive\ Market\ Effect) * (1 - Transit\ Access\ Impact\ on\ Retail\ Demand) * \big((1 - Employee\ TDM\ Impact) * Employee\ Parking\ Share * ITE\ Parking\ Demand + (1 - Employee\ Parking\ Share) * ITE\ Parking\ Demand\big)$$

Or:

$$(1 - 0.32) * (1 - 0.08) * \big((1 - 0.24) * 0.2 * 2.55 + (1 - 0.2) * 2.55\big)$$

The equation can be broken down into three parts. Part 1 accounts for transit access and the captive market effect; this is applied to all retail demand. Part 2 is the employee parking demand, and includes reductions from TDM programming. Part 3 is a calculation of non-employee demand.

Demand by time of day for retail is shown below, based on the retail program modeled for Milk Square:



Office Uses Peak Demand

Traditional Peak Parking Demand Ratio 2.47

Source: ITE *Parking Generation*, 4th Edition (701, urban rate)

Reduction Factors Applied:

Reduction	% Reduction	Source	Union Square Context
Captive Market Effect: Commercial	32%	Internal capture rates for commercial land uses reported a 32% average reduction. (Trip Generation Handbook, 2nd Edition. ITE pg. 129 - Districtwide Trip Generation Study, Florida Department of Transportation, District IV, March 1995)	Union Square has an excellent mix of uses, ranging from retail to office to residential. This will only improve in the future. Thus, this model input set internal capture to the maximum.
Office Visitor Parking Share	0 – 4%	Visitor parking accounts for 7-8% of office parking on a per space basis (ULI Shared Parking, Second Edition, p.91)	Visitor parking demand at offices is similarly broken out by the model as influenced by different factors than regular commuters. As the proportion of visitors to different offices varies (i.e. the difference between a call center and a lawyer who sees clients) this number was varied across scenarios.
Employee TDM Impact	24%	Transportation demand management effectiveness reducing # of commuter vehicles (Trip Generation Handbook, Second Edition. Appendix B - Page 123)	Union Square's accessibility by a mix of modes currently serves as excellent TDM for employees and residents alike. This will only improve in the future – thus the model set this input to the maximum.
Office Employee Mode Adjustment	25% - 40%	A mode adjustment of 0.3 to 0.6 is appropriate for downtown office space in areas with paid parking and high-quality transit service (ULI Shared Parking, Second Edition, p.91)	In the future, Union Square will have both paid parking and high-quality transit service. The team used a range for this input.
Office Visitor Parking Share	0 – 4%	Visitor parking accounts for 7-8% of office parking on a per space basis (ULI Shared Parking, Second Edition, p.91)	Visitor parking demand at offices is similarly broken out by the model as influenced by different factors than regular commuters. As the proportion of visitors to different offices varies (i.e. the difference between a call center and a lawyer who sees clients) this number was varied across scenarios.
Transit Access Impact on Retail	0 - 8%	Shopping centers with access to transit services appeared to have lower peak parking demand than those sites without transit service. Range from 1-8% (ITE Parking Generation, 4th ed. P. 227)	Union Square is currently well-served by MBTA bus service and will have high-quality Green Line service. Therefore, this input is set to the maximum.

The following equation is used to calculate peak parking demand for office uses:

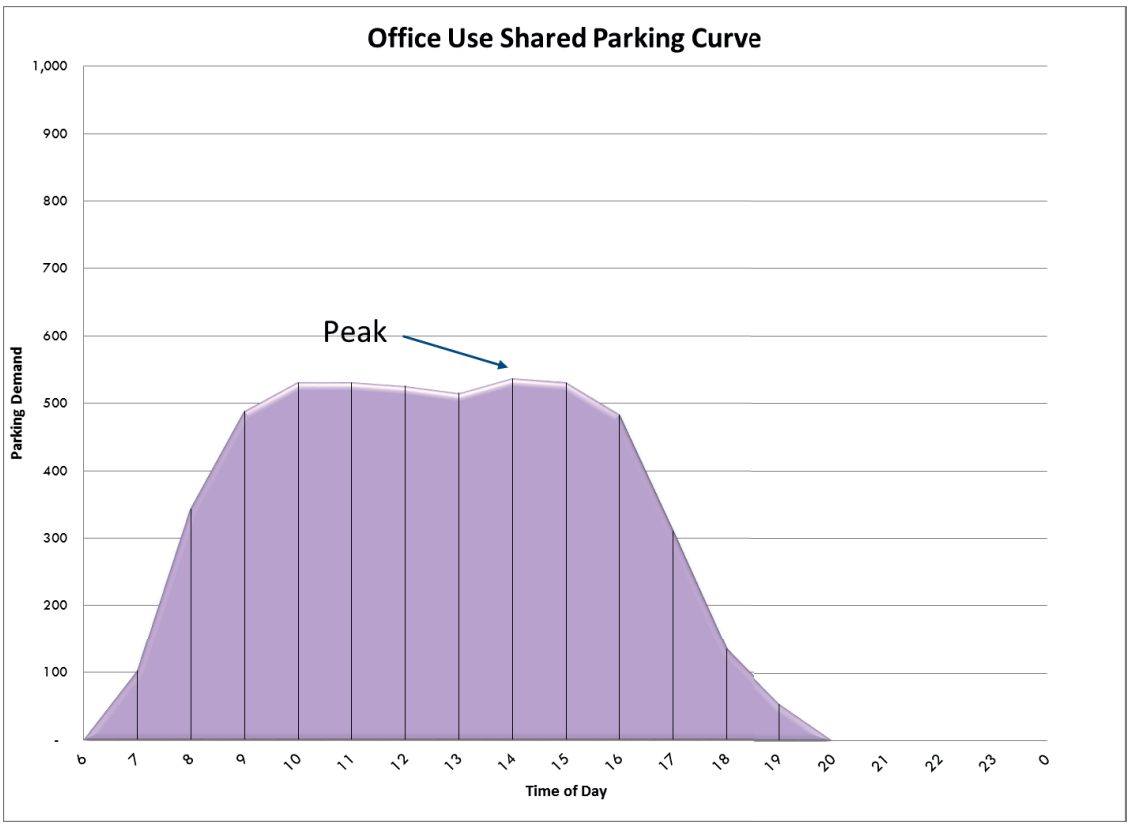
$$(1 - Captive\ Market\ Effect) \\ * \big((1 - Office\ Visitor\ Parking\ Share) * (1 - Employee\ TDM\ Impact) \\ * (1 - Office\ Employee\ Mode\ Adjustment) * ITE\ Parking\ Demand\big) \\ + Office\ Visitor\ Parking\ Share * (1 - Captive\ Market\ Effect) \\ * (1 - Transit\ Access\ Impact\ on\ Retail\ Demand) * ITE\ Parking\ Demand$$

Or (numbers shown below are for the more aggressive estimate, or lower parking demand):

$$(1 - 0.32) * \big((1 - 0.04) * (1 - 0.24) * (1 - 0.40) * 2.47\big) + 0.04 * (1 - 0.32) * (1 - 0.08) * 2.47$$

The equation can be broken down into two parts. Part 1 accounts for the captive market effect on employees only, as well as the Employee TDM Impacts and Office Employee Mode Adjustments. Part 2 applies the captive market effect and transit access impact on retail demand to the non-employee visitors, who are assumed to behave much like visitors of retail establishments.

Demand by time of day for office is shown below, based on the program modeled for the D parcels.



Residential Uses Peak Demand

Traditional Peak Parking Demand Ratio — 1.1 per unit

Source: — ITE *Parking Generation*, 4th Edition (221, lower bound of 95% confidence interval to account for retail analysis showing low parking demand)

Reduction Factors Applied:

Reduction	% Reduction	Source	Union Square Context
Residential TDM Impact	30%	Unbundling the cost of parking from residential property sales/lease cost reduces household vehicle ownership by up to 30% (VTPI Parking Management. (2009))	Living in Union Square does not guarantee one a dedicated parking space. This has been shown to reduce parking demand by residents. The study recommends that future developments "unbundle" parking as a TDM as well as cost-mitigation mechanism.
Captive Market Effect: Residential	31%	Internal capture rates from various mixed-use studies --> 11% - 50% residential internal capture observed --> 31% - average residential internal capture (Trip Generation Handbook, 2nd Edition. ITE pg. 129 - Districtwide Trip Generation Study, Florida Department of Transportation, District IV, March 1995)	Union Square has an excellent mix of uses, ranging from retail to office to residential. This will only improve in the future. Thus, this model input set internal capture to the maximum.
Residential Mode Adjustment	0% - 30%	Adjustments as low as 50% appear to be appropriate for urban CBD locations. 20% reflects auto ownership in areas that are not downtown but are well served by transit (ULI Shared Parking, Second Edition p.88)	Commute share for residents of Union Square was slightly higher than those commuting to Union Square. Thus the team modeled this in a range.

The following equation is used to calculate peak parking demand for residential uses:

$$(1 - Residential\ TDM\ Impact) * (1 - Residential\ Captive\ Market\ Effect) * (1 - Residential\ Mode\ Adjustment) * ITE\ Parking\ Demand$$

Or (numbers shown below are for the more aggressive estimate, or lower parking demand):

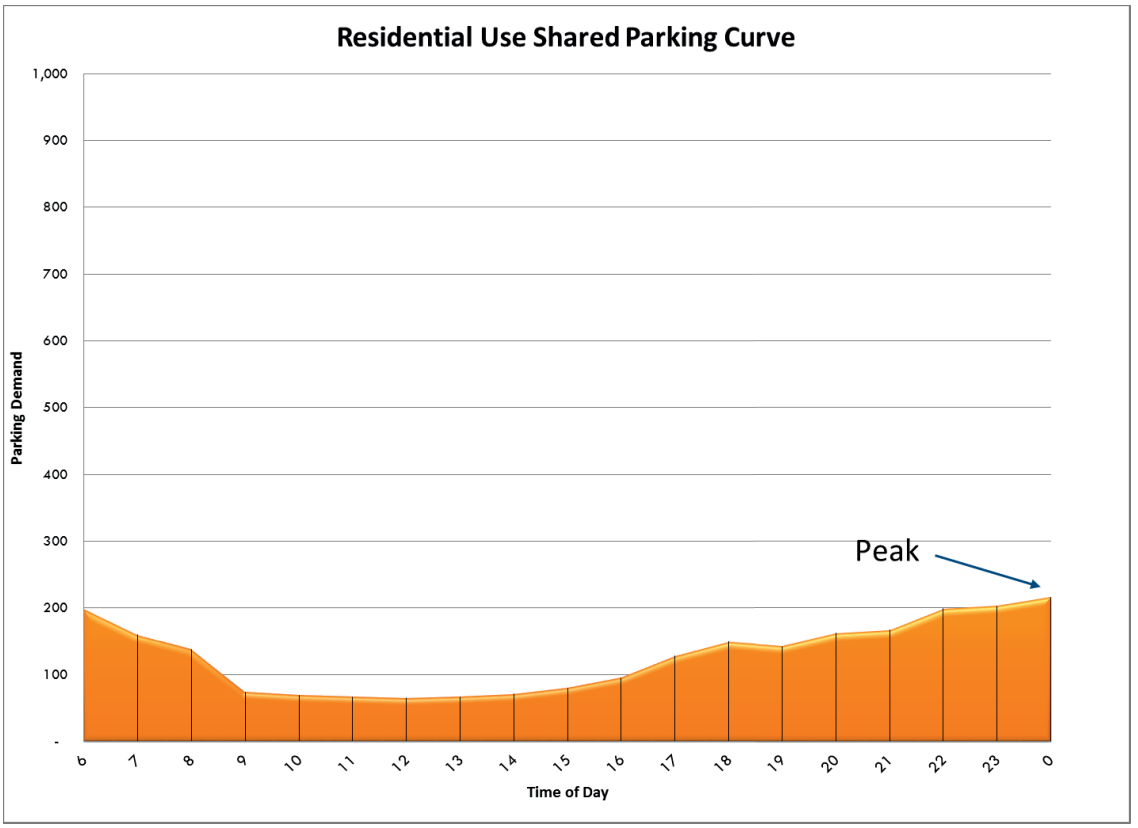
$$(1 - 0.30) * (1 - 0.31) * (1 - 0.30) * 1.1$$

Where variables are as defined above as well as:

This equation is more straightforward and assumes that residents behave similarly to their visitors.

It is worth noting that the lower bound of this analysis (higher reduction factors) produces a final peak demand ratio of 0.37, which is similar to that proposed by the US2 design team (0.3 parked cars/unit).

Demand by time of day for retail is shown below, based on the program modeled for the D parcels.


Residential Use Shared Parking Curve
Parking Demand
1,000
900
800
700
600
500
400
300
200
100
-
Peak
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
0
Time of Day

Hotel Peak Demand

Traditional Peak Parking Demand Ratio 0.6 per room

Source: ITE *Parking Generation*, 4th Edition (312, business hotel)

Reduction Factors Applied:

Reduction	% Reduction	Source	Union Square Context
Captive Market Effect: Commercial	32%	Internal capture rates for commercial land uses reported a 32% average reduction. (Trip Generation Handbook, 2nd Edition. ITE pg. 129 - Districtwide Trip Generation Study, Florida Department of Transportation, District IV, March 1995)	Union Square has an excellent mix of uses, ranging from retail to office to residential. This will only improve in the future. Thus, this model input set internal capture to the maximum.
Transit Access Impact on Retail	0 - 8%	Shopping centers with access to transit services appeared to have lower peak parking demand than those sites without transit service. Range from 1-8% (ITE Parking Generation, 4th ed. P. 227)	Union Square is currently well-served by MBTA bus service and will have high-quality Green Line service. Therefore, this input is set to the maximum.
Employee TDM Impact	24%	Transportation demand management effectiveness reducing # of commuter vehicles (Trip Generation Handbook, Second Edition. Appendix B - Page 123)	Union Square's accessibility by a mix of modes currently serves as excellent TDM for employees and residents alike. This will only improve in the future – thus the model set this input to the maximum.
Employee Parking Share (non-office)	20%	Average share of peak parking demand consumed by employees. (The True Cost of Free Parking. Shoup, Donald. Pg. 86)	Employees respond differently to transportation context changes as they commute in similar patterns daily. Thus it is important to distinguish this group from customers at non-office uses. This was assumed to be consistent across uses.

The following equation is used to calculate peak parking demand for office uses:

$$(1 - Captive\ Market\ Effect) * (1 - Transit\ Access\ Impact\ on\ Retail) * ((1 - Employee\ TDM\ Impact) * Employee\ Parking\ Share * * ITE\ Parking\ Demand + (1 - Employee\ Parking\ Share) * ITE\ Parking\ Demand)$$

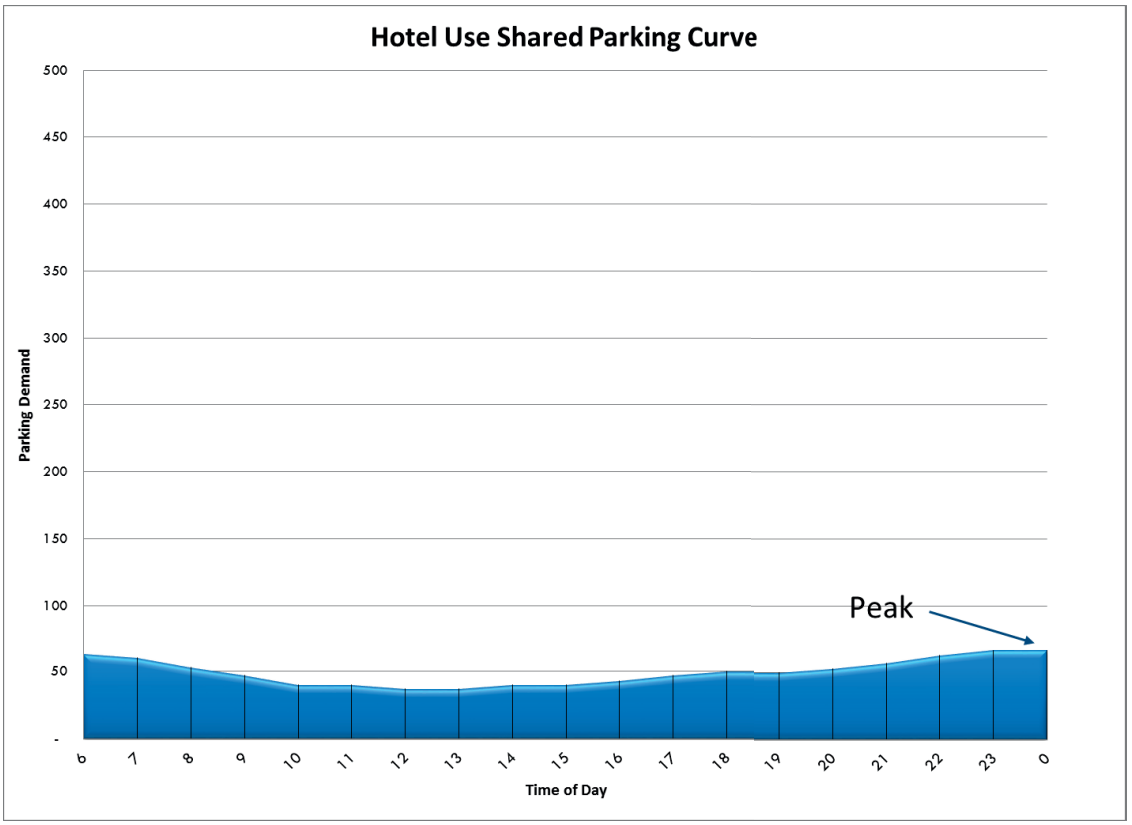
Or:

$$(1 - 0.32) * (1 - 0.08) * ((1 - 0.24) * 0.20 * 0.6 + (1 - 0.20) * 0.6)$$

Where variables are as defined above.

The equation can be broken down into three parts. Part 1 accounts for captive market effect as well as transit access which is applied to both employee and visitor demand. Part 2 is the employee parking demand, and includes reductions from TDM programming. Part 3 is a calculation of non-employee demand.

Demand by time of day for hotel is shown below, based on the program modeled for the D parcels.



Outcomes

The study team modeled four clusters independently. Peaks for these clusters may vary, thus considering all uses together may result in slightly different peak demand than the simple sum of all peaks. However, a conservative total estimate for peak demand as a sum of the individual cluster peaks is noted in Table 9, below.

Table 9 Parking Modeling Results

Cluster	Total GSF	Total Residential	Total Office	Retail	Hotel	Peak Demand	
		Units	GSF	GSF	Keys	Low	High
D Parcels	1,451,425	533	624,900	n/a	175	613	750
Boynton	3,136,742	1,030	1,808,894	n/a		1,582	1,935
Milk Sq	1,796,740	566	987,726	115,275		1,029	1,235
Scattered Sites		220	170,000	n/a		167	208
Total						3,391	4,128