

Linkage Nexus Study

Final Report

to

Mayor's Office of Strategic Planning and Community Development

Submitted by:

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September 2017

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Executive Summary

Somerville established a Housing linkage policy in 1990, codified under Section 15 of the Somerville Zoning Ordinance. Under the city linkage policy, as amended in 2013, non-residential development projects exceeding 30,000 gross square feet pay a linkage fee of \$5.15 per square foot on the amount of space over 30,000 square feet. In August 2016, the State Legislature and Governor approved a home rule petition to allow Somerville to establish a jobs linkage fee to fund education and job training programs to prepare Somerville residents to secure new jobs created at new developments in the city. This report provides an updated nexus study to quantify the impact of future non-residential development on the demand for affordable housing and need for employment and training services in Somerville and the linkage fee rates to mitigate these impacts. It also recommends linkage fee rates, policies and administrative practices.

Housing Demand. Based on projected new development of 2.21 million square feet over the next ten years and the likely mix of tenant businesses, 8,899 new jobs are estimated to be generated in Somerville by this development. Information on the occupations and earnings of these new employees was combined with data on the distribution of households by size and number of workers and the likely percentage of these new workers who will move to the city to estimate their impact on the demand for new housing units by income level. This analysis projected the need for 591 new housing units over the next ten years, including 133 very low-income units, 182 low-income units and 276 moderate-income units¹.

Development Costs and Financing Gap. A separate analysis of the development costs and financing gap was conducted based on 110 ownership units and 482 rental units². Development costs were estimated from recent comparable affordable housing projects built in Somerville. For rental projects, the financing gap was calculated as the difference between total development costs and the amount of debt and equity that could be supported by the housing cash flow using affordable rents at 30% of household income and comparable operating costs. For ownership projects, the financing gap was the difference between total development costs and the affordable purchase price based on home mortgage payments, insurance and property taxes at 30% of household income and a 5% down payment. The results of this analysis are:

- Total development costs of \$248.03 million; and total financing gap of \$162.48 million with a gap of \$56.95 million for the very low-income units, \$52.39 million for the low-income units and \$52.14 million for the moderate-income units; and
- The linkage fee rate on non-residential development projects needed to provide the full \$162.48 million financing gap is \$86.43 per square foot.

¹ A very low-income unit is for a household with income less than 50% of the Boston region's area median income, a low-income unit is for a household between 50 and 80%, and a moderate-income unit is for a household between 81% and 110% of area median income.

² This mix is based on all of the very low-income units developed as rental units, 90% of low-income units built as rental and 10% ownership, and moderate-income units divided into 33% ownership housing and 67% rental housing units. Total units were increased by one unit to 592 due to the rounding of fractional units that occurred from the distribution of housing demand among rental and ownership units and households of different sizes.

Since affordable housing development leverages other federal and state funding, linkage fees only need to address a portion of the financing gap. In recent years, Somerville's Affordable Housing Trust fund has supplied 22.8% of the financing gap for affordable housing projects, while all city funds supplied 31.7% of the gap. The housing linkage fee levels that would fill these proportions of the financing gap are \$19.73 and \$27.36 per square foot, respectively.

Training Needs and the Financing Gap. Somerville's non-residential development over the next ten years is expected to create 4,434 jobs in low-skill and middle-skill occupations that are the most accessible to low-income and moderate-income workers. Using the 30% resident employment goal that Somerville applied to Assembly Square development projects, the jobs linkage fee would support training for Somerville residents to fill 1,330 of these jobs, at an estimated cost of \$6.055 million. An additional \$1.62 to \$1.89 million is needed to provide English language, adult basic education services, and career advancement services so that Somerville residents have the educational level and competencies required for training programs and can advance from entry-level to better paying jobs once employed. After adjusting for training provided by the vocational education system and other programs, the net financing gap to be addressed by the jobs linkage fee is \$4.58 to \$5.05 million. A maximum jobs linkage rate of \$2.44 to 2.69 per square foot is needed to fund this educational and job training funding gap.

Impact on Competitiveness. An important consideration in adjusting Somerville's linkage fees is the rate's potential impact on attracting new development and tenants. This is particularly important since the maximum combined rate of \$89.12 per square foot is seventeen times the current rate of \$5.15, more than six times the rate in Cambridge (\$13.50), and almost nine times Boston \$10.01 linkage fees. If the maximum rate is fully passed on to tenants as higher rents, it represents a 21% increase in Somerville's Class A office rent. This would leave rent differentials of almost \$10 with Boston's Financial District and over \$26 with Kendall Square, but erase the city's advantage over the Alewife section of Cambridge and make Somerville less competitive with suburban locations by more than doubling its rent premium over Waltham and inner suburbs. If developers cannot pass on the fee increase to their commercial tenants, they will need to increase their required equity investment and reduce their rate of return. Based on the maximum exaction increase of \$83.97 per square foot being fully paid with developer equity, the annual return on investment is estimated to decrease by 41% for a 200,000 square foot building; this impact on returns is likely to reduce investment in Somerville's office development.

For two alternative scenarios, in which combined linkage fees are set at \$22.17 (the housing linkage fee at \$19.73 and the jobs linkage fee at \$3.44) and \$11.00 (the housing linkage fee at \$8.50 and the jobs linkage fee at \$2.50) and the increase in other city exactions (\$7.74) are also considered, the impact on rents and returns is greatly reduced. Rents would increase by 6.1% and 3.4%, respectively, if the full fee increase is passed on to tenants. Investment returns would drop by .61 to 1.36 percentage points, respectively, if the full fee cost was paid by increases in developer equity.

Recommendations. Since adoption of the maximum determined contribution rate is likely to impair Somerville's regional competitiveness, and because its parity in linkage fees with Boston

and Cambridge is important as the city seeks to expand its role as an employment center, it is recommended that Somerville establish combined linkage fees in the range of \$10.00 to \$12.50. At this fee level, the housing linkage fee should be between \$8.00 and \$10.00 per square foot and the jobs linkage fee between \$2.00 and \$2.50. The recommended policy for deploying jobs linkage fees is a hybrid approach in which fees collected from a project would first be reserved for—and efforts made to create job training and education services linked to—employers and jobs at the project. When “project-linked” job training is not feasible, the fees would go into the Municipal Job Creation and Retention Trust’s general fund and used for citywide programs selected through a competitive request for proposal process.

Recommended Housing and Jobs Linkage Fee Rates

Fee Type	Recommended Linkage Fee Rate
Jobs Fee Rate	\$2.00 to \$2.50
Housing Fee Rate	\$8.00 to \$10.00
Combined Rate	\$10.00 to \$12.50

Source: Karl F. Seidman Consulting Services

Several changes to Somerville’s current linkage fee policies are recommended to simplify policies and their administration, and accelerate fee collection:

- Shorten the housing linkage fee payment schedule to three payments made at the building Certificate of Occupancy date; one year after C of O and two years after C of O;
- Use of a single payment at the building permit date for the jobs linkage fee to provide the upfront payment needed to fund job training in advance of building occupancy and employment;
- Consolidate the payment schedule for each annual payment after C of O to January 15 (for initial C of O between January 1 and June 30) and July 15 (for initial C of O between July 1 and December 31) to simplify book keeping and administration of fee collection;
- Continue the current policy of reevaluating and updating linkage fees based on a nexus analysis every five years; and
- Establish an annual inflation rate adjustment based on the Boston CPI or alternative index.

Introduction

The City of Somerville established a Housing linkage policy in 1990, codified under Section 15 of the Somerville Zoning Ordinance. Under the city linkage policy, as amended in 2013, non-residential development projects exceeding 30,000 gross square feet pay a linkage fee of \$5.15 per square foot on the amount of space exceeding 30,000 square feet. Developers can pay the linkage fee either in one installment or over five years through equal annual payments. Linkage fees are paid to the Somerville Affordable Housing Trust Fund, which allocates the funds to supply housing for low-income and moderate-income households in Somerville.

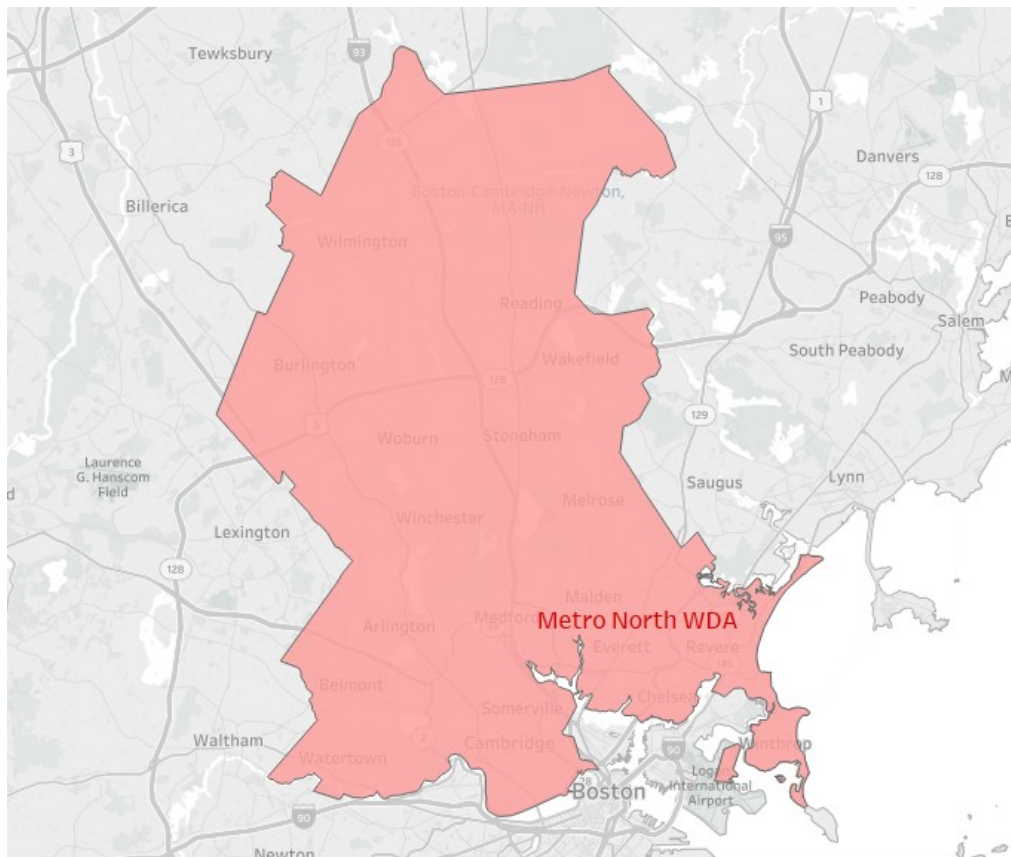
Based on the recommendations from a 2013 study, Somerville passed a Home Rule Petition submitted to the Massachusetts legislature to allow Somerville to establish a jobs linkage fee to be levied on non-residential development projects. The jobs linkage fee would fund education and job training programs to prepare Somerville residents to secure new jobs created at new commercial developments in the city. In August of 2016, the State Legislature and Governor approved the Home Rule Petition, giving the City the authority to create the Somerville Municipal Job Creation and Retention Trust and fund it through a linkage fee.

The City of Somerville selected Karl F. Seidman Consulting Services and ConsultEcon, Inc. to complete a new nexus study to update and review policies for its current housing linkage fee and recommend the appropriate rate for the newly authorized job linkage fee along with policies to implement this fee. Since the prior 2013 Nexus study, important changes have occurred in Somerville's economy and real estate market that impact the type of new development, the associated jobs created in Somerville, and their income levels and workforce needs. Housing market conditions also have changed, with increased housing development costs, rents and prices and changes to the financing environment for affordable housing development. These housing market conditions affect the funding needed to build affordable housing to address the impacts of new development and the associated housing linkage fees. This report details the analysis undertaken to assess the impact of economic and market conditions on Somerville's future development and associated employment training and affordable housing needs to ensure that Somerville sets appropriate linkage fee levels and effectively implements the new jobs linkage fee.

Somerville Economic and Development Trends and Future Development

Somerville’s future development and associated impacts will be shaped by the nature of economic growth in the city and region. This section summarizes the city’s economic composition and recent growth trends, and how these trends have translated into new real estate development and leasing activity. Since Somerville’s development is influenced by surrounding cities, this analysis includes trends for the Metro North Workforce Development Area³ (WDA), an area in the Boston region used for workforce development planning that includes Somerville, shown in Map 1. Similarly, real estate market conditions and trends in surrounding cities are also considered.

Map 1. Metro North Workforce Development Area

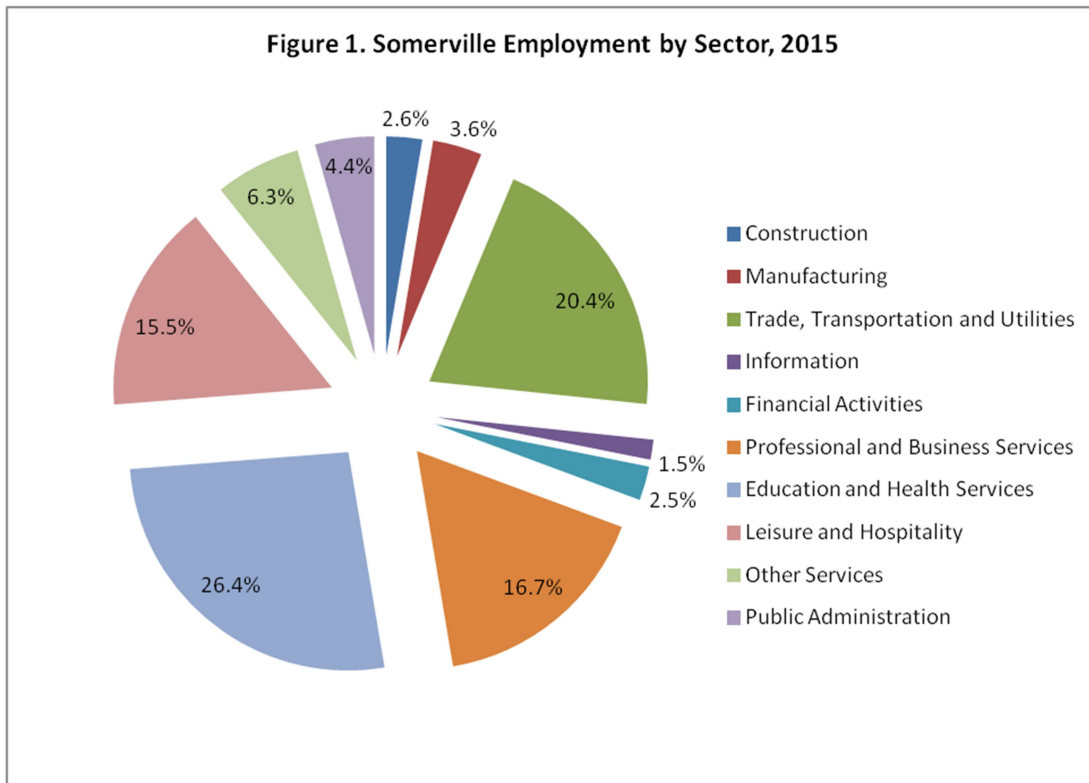


Source: http://lmi2.detma.org/lmi/map_box.asp

³ This area includes the following 20 communities: Arlington, Belmont, Burlington, Cambridge, Chelsea, Everett, Malden, Medford, Melrose, North Reading, Reading, Revere, Somerville, Stoneham, Wakefield, Watertown, Wilmington, Winchester, Winthrop, and Woburn.

Existing Employment Base

As shown in Figure 1, Somerville's employment⁴ located within the city in 2015 (the last full year for which city employment data is available) was concentrated in four sectors⁵: Education and Health Services, Trade Transportation and Utilities, Professional and Business Services and Leisure and Hospitality, which together provided 79% of the city's 26,188 jobs. Other sectors are much smaller, contributing from 1.5% (Information) to 6.3% (Other Services) of total jobs.



Source: Massachusetts Department of Labor and Workforce Development ES-202 Data Series

Employment is further concentrated within these sectors (see Table 1), reflecting Somerville's emergence as a center for retail and dining with sizable health care, education, and service activities. Retail stores employed 3,630 workers in 2015 and accounted for 68% of the Trade, Transportation and Utilities sector and 14% of all Somerville jobs. Restaurants and drinking

⁴ Employment in this report refers to jobs located within Somerville or other indicated areas. Employment data is from the ES-202 data series (also known as the Quarterly Census of Employment and Wages), which covers all jobs subject to unemployment insurance system. Part-time and full-time employment is included for all people working one or more days in each of 13 weeks during a calendar year, or are paid wages of \$1,500 or more in any calendar quarter. Not included are members of the armed forces, self-employed workers, proprietors, domestic workers, unpaid family workers, and railroad workers covered by the railroad unemployment insurance system. Labor force or work force refers to non-institutionalized civilian residents 16 or older within the area who are employed or unemployed and looking for work.

⁵See Appendix A for the definitions of economic sectors. Several similar sectors were combined to simplify the presentation of data on the 19 non-agricultural sectors. These combinations are explained in Appendix A.

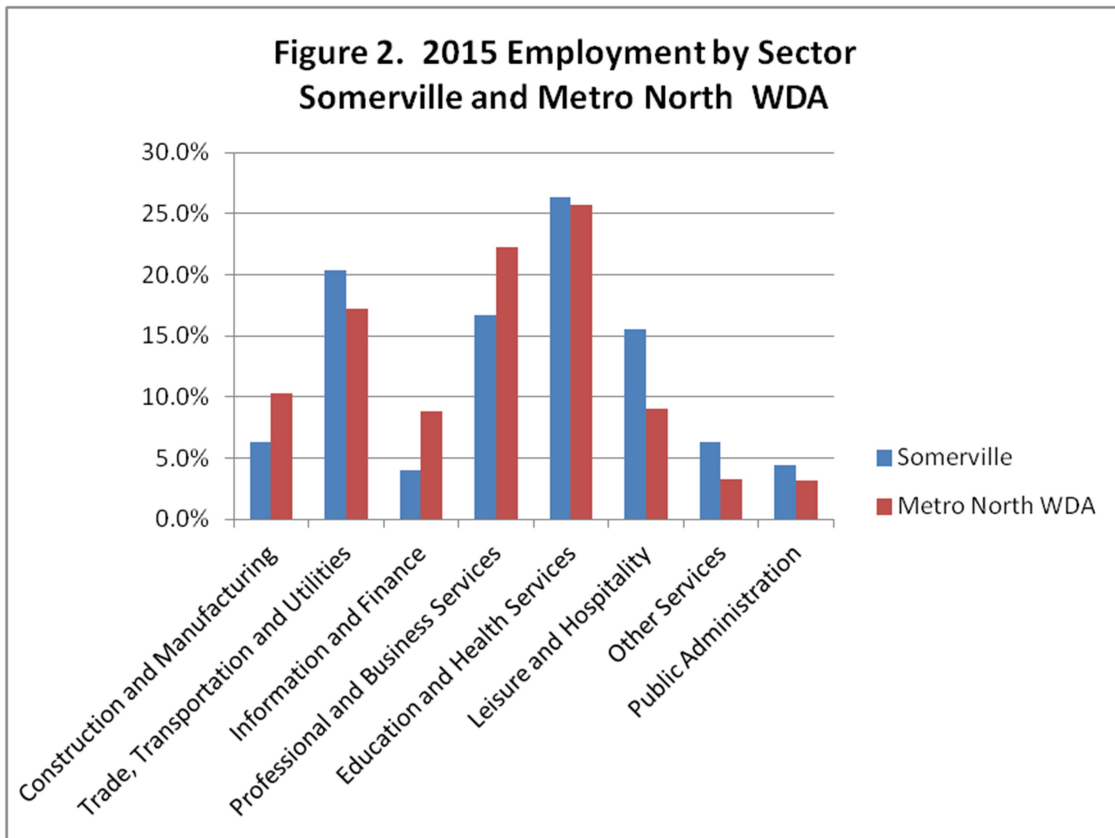
places were almost as large with 3,446 workers, which constituted 75% of the Leisure and Hospitality Sector and 11.6% of total city employment. Education and Health Services jobs were more evenly distributed across the five main industries, with Ambulatory Care and Hospitals the largest components at 2,489 and 1,791 jobs, respectively. Professional and Business Services include many specialized industries, most of which employ 116 to 330 people in Somerville. The major exception is Administrative and Support Services, which employed over 2,200 workers in 2015. Architecture, Engineering and Design Services and Computer Systems Design were also relatively large with 441 and 567 employees, respectively.

Table 1. Industry Mix for Somerville’s Largest Sectors, 2015

Sector and Industry	2015 Payroll Jobs	Percent of Sector Total
<u>Trade, Transportation and Utilities</u>	5,333	
Wholesale Trade	445	8.3%
Retail Trade	3,630	68.1%
Transportation and Warehousing	1,078	20.2%
Utilities	180	3.4%
<u>Education and Health Care</u>	6,912	
Educational Services	1,317	19.0%
Ambulatory Health Care Services	2,489	36.0%
Hospitals	1,791	25.9%
Nursing and Residential Care Facilities	322	4.7%
Social Assistance	993	14.4%
<u>Professional and Business Services</u>	4,370	
Legal Services, Accounting and Bookkeeping	130	3.0%
Architectural, Engineering and Design Services	441	10.1%
Computer Systems Design and Related Services	567	13.0%
Management and Technical Consulting Services	117	2.7%
Scientific Research and Development Services	148	3.4%
Advertising and Related Services	116	2.6%
Other Professional and Technical Services	135	3.1%
Management of Companies and Enterprises	143	3.3%
Administrative and Support Services	2,244	51.3%
Waste Management and Remediation Services	330	7.6%
<u>Leisure and Hospitality</u>	4,061	
Arts, Entertainment, and Recreation	486	12.0%
Accommodation	128	3.1%
Food Services and Drinking Places	3,446	84.9%

Source: Massachusetts Department of Labor and Workforce Development ES-202 Data Series

When compared to the Metro North WDA, Somerville has a much larger share of employment in the Leisure and Hospitality sector and slightly higher concentrations in Trade, Transportation and Utilities and Education and Health Services. However the Metro North region has higher employment shares for Construction and Manufacturing, Information and Finance and Professional and Business Services.

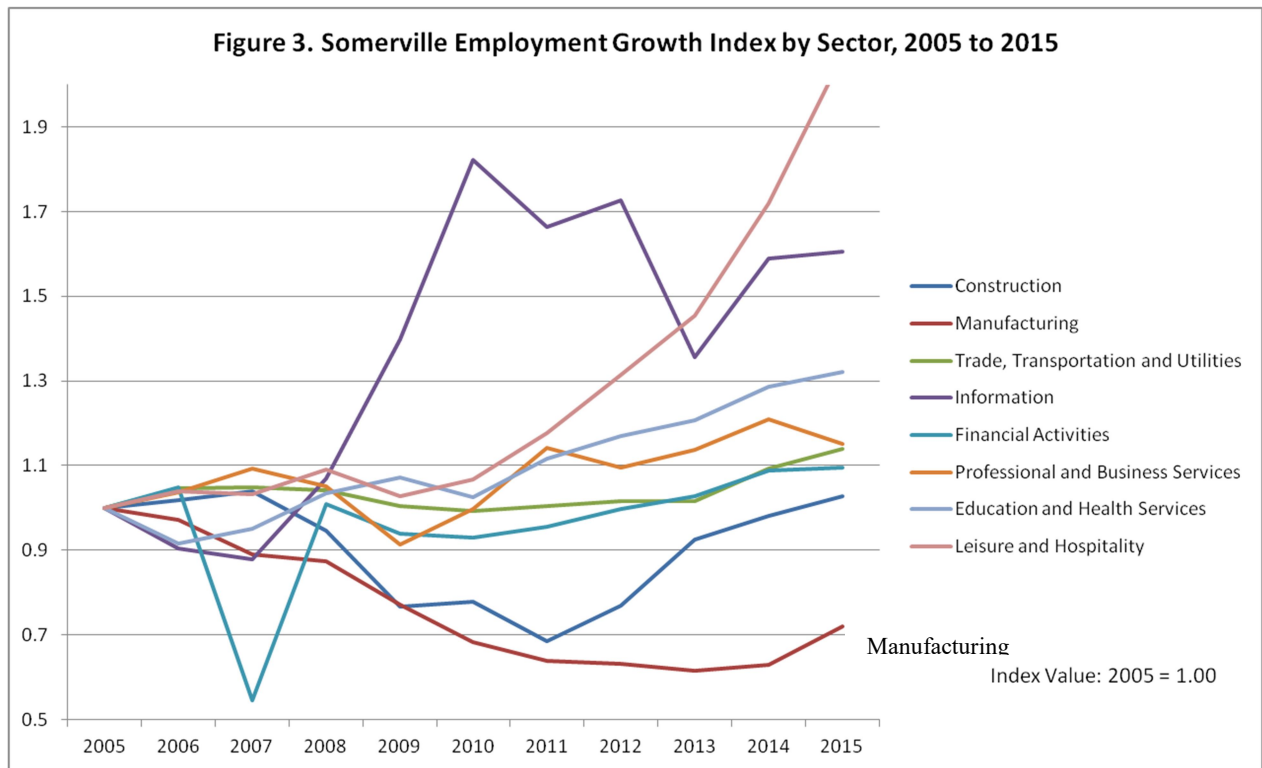


Source: Massachusetts Department of Labor and Workforce Development ES-202 Data Series

Employment Trends and Growth Industries

Somerville’s economy had strong job growth from 2005 to 2015, significantly exceeding the growth rate for the Metro North WDA region, and adding employment across multiple sectors and industries. Somerville added 5,150 total jobs between 2005 and 2015, with payroll employment expanding from 21,038 to 26,188, a 24.5% increase. Between December 2007 and August 2009⁶, during the great recession, Somerville had a net loss of 1,691 jobs but the city’s economy has rebounded very well since 2010. Between 2010 and 2015, total payroll employment grew by 4,913 jobs, averaging almost 1,000 net new jobs per year—an average annual growth rate of 4.2%. In contrast, total payroll employment for the Metro North WDA grew 12.2% from 2005 to 2015, and during the post-recessionary period, the WDA region grew at one-half the rate of Somerville, or 2% average annual employment growth.

⁶ The official end of the recession was June 2009 but the low point of Somerville’s employment was August 2009.



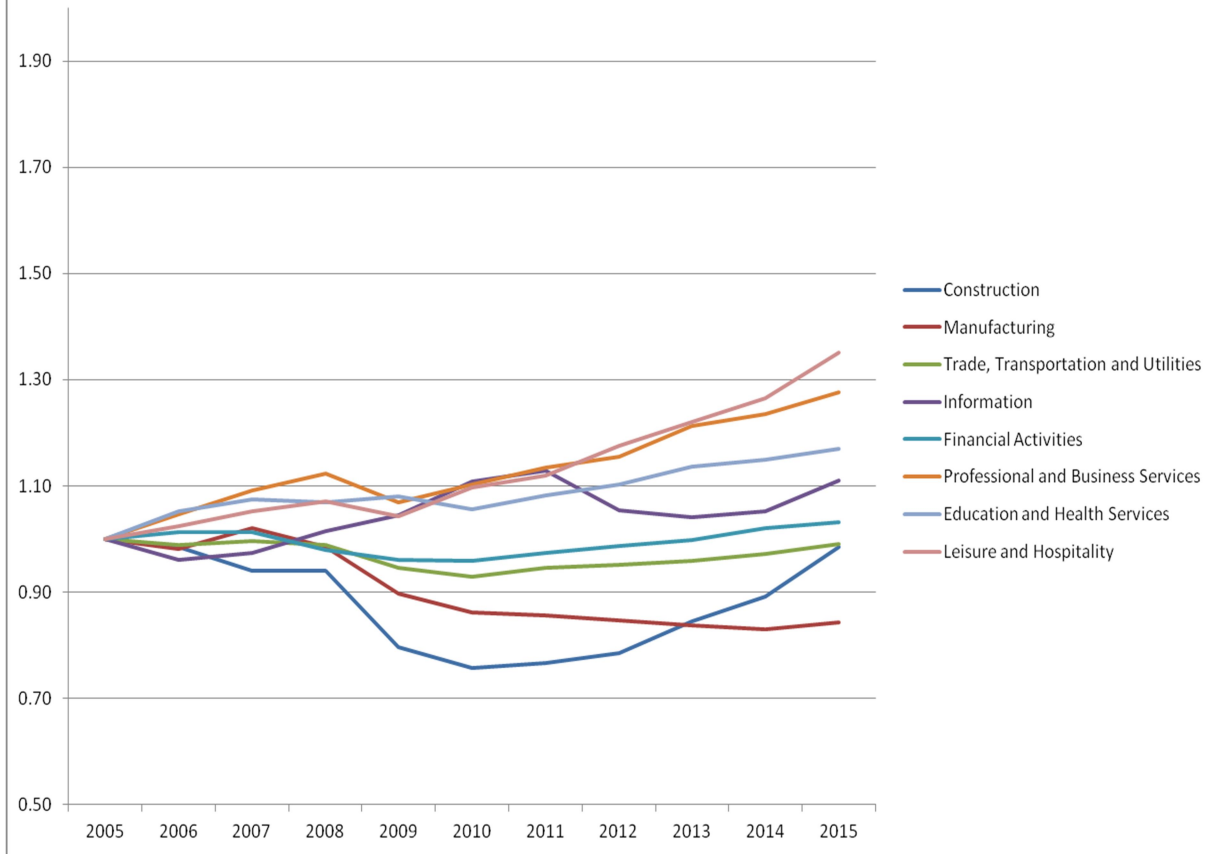
Source: Massachusetts Department of Labor and Workforce Development ES-202 Data Series

Somerville and the Metro North WDA’s recent employment growth provide a good indicator for the likely sector and industry composition of future development. An employment index that tracks job growth relative to 2005 by major sector from 2005 to 2015 is presented for Somerville in Figure 3 and the Metro North WDA in Figure 4. In comparing trends for these areas, it is important to recognize that Somerville has a much smaller employment base that constitutes 6.4% of total jobs in the Metro North region.

Both areas had steady job growth for Leisure and Hospitality and Education and Health Services, with Somerville growing at a faster rate. This was especially notable for Leisure and Hospitality in which Somerville’s employment doubled from 2005 to 2015 compared to 35% growth for the WDA. The Metro North WDA had stronger employment growth for Professional and Business Services, increasing by 28% over the period compared to a 15% increase in Somerville. Manufacturing declined in both areas, although more steeply in Somerville, and the city’s construction employment was very cyclical dropping by close to 30% before rebounding in 2011.

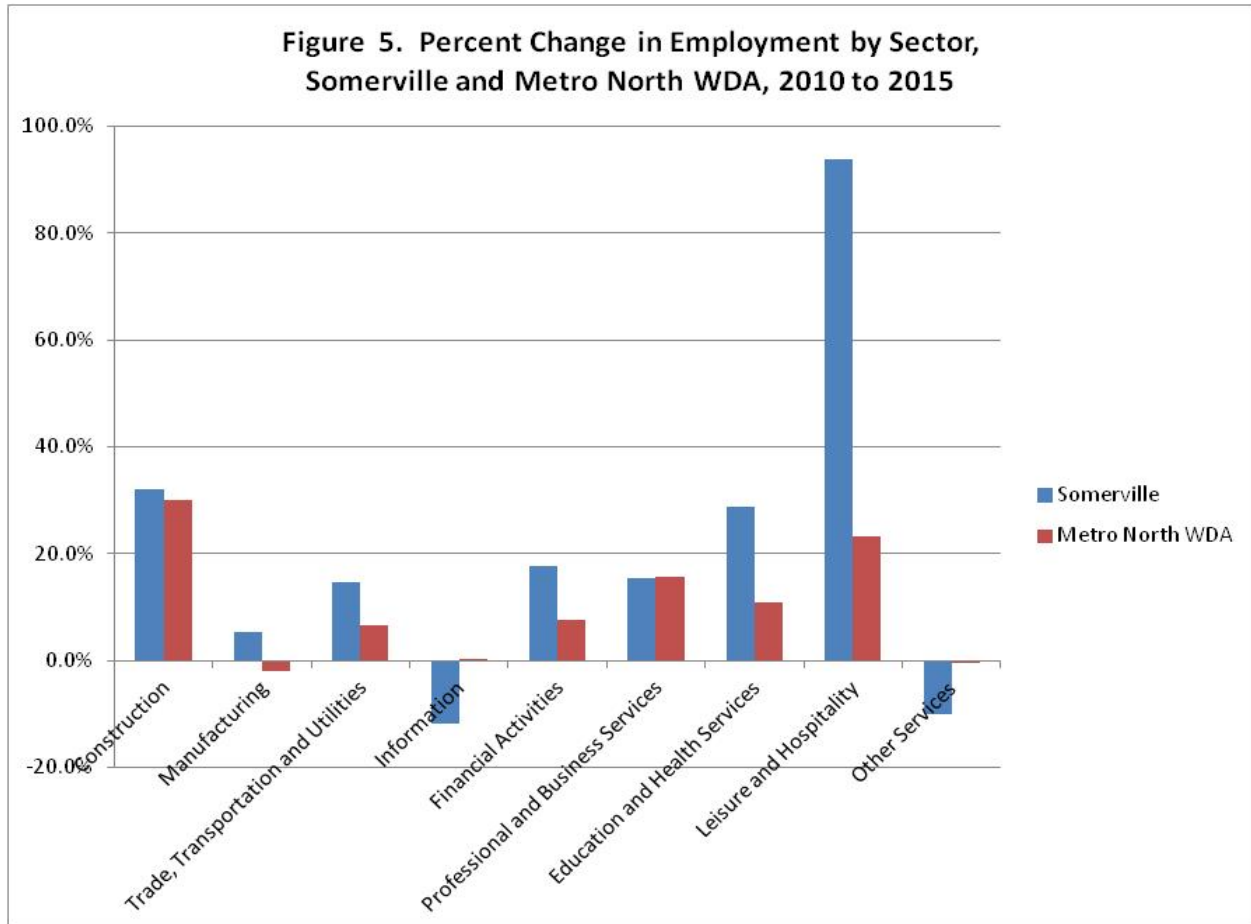
Employment changes were more erratic for Somerville in several sectors, most notably Information and Professional and Business Services. This is not surprising since Somerville has a much smaller economic base that is 1/15 that of the Metro North region and thus any given shift in employment, such as the loss of a medium sized employer or major expansion or addition of a new firm, will have a much greater relative impact on the city.

Figure 4. Metro North WDA Employment Index by Sector, 2005 to 2015



Source: Massachusetts Department of Labor and Workforce Development ES-202 Data Series

Growth patterns shifted during the post-recession period from 2010 to 2015, as shown in Figure 5. Somerville had higher percentage employment growth in most sectors with the differences most pronounced for Leisure and Hospitality and Education and Health Services. Growth rates were almost equal for Professional and Business Services, a marked improvement from 2005 to 2010 when Somerville was flat but the WDA grew by 10%.



Source: Massachusetts Department of Labor and Workforce Development ES-202 Data Series

Since sector data combines patterns across many component industries, more detailed industry level data was examined to identify the industries with the largest job gains from 2005 to 2015. Table 2 presents absolute job growth from 2005 to 2015 for expanding Somerville industries that had the largest employment increases and added at least 100 jobs during this period. Fifteen industries meet this criterion and combined to add 5,244 jobs. Restaurants, Health Care and Retail were key sources of growth over this period. Restaurants and Other Eating Places accounted for one-third (33.8%) of these new jobs. Three health-related industries (Ambulatory Health Services⁷, Hospitals, and Individual and Family Services) combined to generate 1,569 new jobs, or 30% of the growth, among the 15 fastest growing industries. Five retail store types together expanded to add 842 jobs. Technology-based industries lagged these other sectors but

⁷ Offices and clinics for medical practitioners.

were still important sources of growth, with Computer Systems Design and Related Services generating 439 new jobs and Scientific Research and Development adding 100 jobs.

Table 2. Somerville Industries with Largest Job Growth, 2005 to 2015⁸

Industry	Job Growth	Percent of Total for 15 Industries
Restaurants and Other Eating Places	1,773	33.8%
Ambulatory Health Care Services	1,038	19.8%
Computer Systems Design	439	8.4%
Individual and Family Services	362	6.9%
Clothing and Clothing Accessories Stores	312	5.9%
Hospitals	169	3.2%
Office Supply, Stationery & Gift Stores	155	3.0%
Dry Cleaning and Laundry	152	2.9%
Educational Services	150	2.9%
Food and Beverage Stores	144	2.7%
General Merchandise Stores	126	2.4%
Offices of Real Estate Agents and Brokers	119	2.3%
Furniture and Home Furnishings Stores	105	2.0%
Amusement, Gambling and Recreation	100	1.9%
Scientific Research and Development	100	1.9%
Total	5,244	100.0%

Source: Massachusetts Department of Labor and Workforce Development ES-202 Data Series

There was considerable overlap in the industries driving job growth for the Metro North region. Sixteen industries added at least 1,000 jobs in Metro North from 2005 to 2015. Eight of these were also on Somerville’s list of the largest sources of new jobs, including Restaurants, Computer Systems Design, all three of the health care industries, Educational services and grocery stores. However, technology-based industries were more significant job generators for Metro North than for Somerville, accounting for 32% of job growth among the top sixteen industries, compared to 10% for Somerville. On the other hand, restaurants, retail, and health care industries were less important sources of job growth for the region than for Somerville. Finally, the Metro North WDA benefited from growth in several industries that did not add many jobs in Somerville, including insurance, Other Professional and Technical Services, and Administrative and Support Services.

⁸ These figures do not include the 4,500 new jobs at Partners Health Care’s headquarters in Assembly Square which was occupied in the summer of 2016.

Table 3. Industries in the Metro North WDA Region with Largest Job Growth, 2005 to 2015

Industry	Job Growth	Percent of Total for 16 Industries
Computer Systems Design	8,119	14.6%
Restaurants and Other Eating Places	7,946	14.3%
Scientific Research and Development	6,103	11.0%
Employment Services	4,818	8.7%
Administrative and Support Services	4,679	8.4%
Ambulatory Health Care Services	4,235	7.6%
Individual and Family Services	4,167	7.5%
Grocery Stores	2,695	4.9%
Elementary and Secondary Schools	2,647	4.8%
Software Publishers	2,237	4.0%
Hospitals	2,166	3.9%
Data Processing and Related Services	1,258	2.3%
Other Professional and Technical Services	1,243	2.2%
Insurance Carriers	1,060	1.9%
Insurance Agencies, Brokerages and Support	1,043	1.9%
Other Schools and Instruction	1,084	2.0%
Total	55,500	100.0%

Source: Massachusetts Department of Labor and Workforce Development ES-202 Data Series

Somerville Development Trends

Somerville has build-out capacity and plans to support new retail and commercial development. The SomerVision comprehensive plan calls for developing 10.5 million square feet of new development over the next 20 years to house 30,000 new jobs. The bulk of this new development is envisioned through utilizing buildable land in five targeted transformation areas: Assembly Square, Inner Belt, Brickbottom, Boynton Yards and Union Square. Assembly Square and Union Square/Boynton Yards account for the vast majority of the planned new development. Assembly Square is well under development as a commercial and employment center with two new fully leased office buildings and the Assembly Row retail and entertainment center. An additional 2,683,000 square feet of retail, office and hotel development is planned but not yet permitted for Assembly Square. The Union Square Neighborhood Plan calls for a major employment center in Union Square catalyzed, in part, by expansion of the MBTA Green Line. At full development, the plan includes 4.2 million square feet of new commercial development, including office (3,592,000 SF), retail (546,000 SF) and arts/creative economy space (90,000 SF). Substantial new commercial development in Union Square is expected to occur with completion of the Green Line expansion and therefore is several years away from permitting and construction.

Considerable non-residential development has taken place in Somerville in recent years, fueled by strong regional economic growth. Table 4 summarizes Somerville’s non-residential development projects over 30,000 square feet (i.e., projects subject to current housing linkage

fees) completed from 2010 to 2016 along with projects under construction and those that are permitted but have not yet begun construction. Almost two million square feet of non-residential development has been built in Somerville over this period with another 573,000 square feet under construction and permitted.

**Table 4. Somerville Development Projects
2010 to 2016 Development Completed, under Construction and Planned**

Development Use	Completed	Under Construction	Permitted Preconstruction
Retail Square Feet	447,307	100,802	29,974
Office/Commercial Square Feet	1,016,346	78,534	17,652
Hotel Square Feet	0	112,000	0
Other Uses	425,886	38,311	195,229
Total	1,889,539	329,647	242,855

Source: Somerville OSPCD

Market Demand and Expected Absorption

Housing demand and the need for job training will result from Somerville’s success in attracting business growth within the Boston region. Based on interviews with developers and brokers, Somerville is competing for tenant businesses with Cambridge, parts of the Boston office market and nearby suburbs along I-95/Route 128. Thus, future commercial development in Somerville is linked to demand in these real estate markets. Historic absorption data for these market areas are an important indicator for the level of planned and permitted development that is likely to be built. Costar, a private database of commercial buildings and leasing activity, was the source of this information. Table 5 summarizes the supply and absorption of office space for Somerville and these competing markets. Two periods are used for space absorption: (1) the ten year period from 2007 through the first quarter of 2017; and (2) the more recent five-year period from 2012 to 2016. The latter period reflects recent trends and sustained growth without a recession. The increase in the total supply of space is reported just for the ten year period from 2007 to the present.

**Table 5. Class A Office Market Real Estate Supply and Absorption,
Somerville and Competing Markets**

	Total Change in Supply, 2007-Present	Average Annual Change in Supply, 2012- Present	Supply, 2017	Vacant SF 2017	Vacant % 2017	Average Annual Net Absorption, 2007 to 2017	Average Annual Net Absorption, 2012 to 2016	2017 Average Base Rent
Somerville	1,049,257	95,387	2,828,203	52,637	1.9%	117,772	46,170	\$31.15
Arlington Lexington	382,276	34,343	5,173,820	518,437	10.0%	66,757	90,538	\$19.64
Malden Medford	289,721	4,240	3,564,607	444,203	12.5%	10,824	20,756	\$15.51
Cambridge	4,618,345	654,117	31,325,954	763,678	2.4%	540,348	916,070	\$40.67
Boston, 4 Submarkets*	5,283,730	743,746	77,460,056	6,745,188	8.7%	445,450	1,027,377	\$39.34
Total, All Market Areas	11,623,329	1,531,833	120,352,640	8,524,143	7.1%	1,181,151	2,100,912	\$37.94
Somerville Share	9.0%	6.2%	2.3%	0.6%		10.0%	2.2%	82.1%

*Back Bay, Charlestown/East Boston, Financial District, Seaport, Source: Costar Database
Absorption figures for 2017 covers the first quarter only

Based on this data from Costar, the supply of office space in these five market areas grew by 11.6 million square feet since 2007. Somerville added just over 1 million square feet or 9% of the increase. Cambridge and the Boston submarkets accounted for 85% of the growth, adding 9.9 million square feet. Annual net absorption of new office space in this geography averaged 1.81 million square feet from 2007 to the present, as follows:

- Somerville accounted for 117,717 square feet or 10% of net absorption, which was one-fifth and one-quarter of the space absorbed in Cambridge and Boston, respectively;
- From 2012 through 2016, net absorption has been much higher, averaging 2.1 million square feet, 92% of which occurred in Cambridge and Boston;
- Somerville’s net absorption was boosted by Partners HealthCare’s new building in Assembly Square. In the 2010 to 2016 period, without this project, Somerville’s share of average net absorption was 2.2%
- Neighboring suburban markets are attracting far less development and absorption of space than the urban markets. The Malden/Medford and Arlington/Lexington areas added 672,000 square feet of space since 2007, most of which was built before 2010. Annual net absorption averaged slightly below 78,000 square feet since 2007 and almost 111,000 from 2012 to 2016.

Vacant space is moderate at 7% of total supply but is especially tight in Somerville and Cambridge. This indicates that new development will be needed to accommodate business needs if the region’s steady economic growth continues. The low vacancy rate and recent levels of absorption in Cambridge also increase the opportunity for Somerville to attract tenants who might have difficulty securing space in Cambridge.

Somerville is well positioned to increase its absorption of new Class A office and lab space over the next decade. The strong demand for space among major pharmaceutical and technology companies may crowd out small and mid-sized East Cambridge businesses. Furthermore, Kendall Square rents are now the highest in the region and are likely to cause more tenants to seek less costly alternatives when their current leases expire. Assembly Square is now a developed urban alternative to Boston and Cambridge with the addition of an Orange Line station and the dining, shopping and entertainment amenities at Assembly Row. With completion of the Green Line expansion, Union Square, which is already developed with urban amenities, has the potential to become another Somerville alternative to Cambridge and Boston for a range of industries.

Somerville has also seen significant new retail development in the past decade, led by the Assembly Row project. According to City of Somerville records, almost 500,000 square feet of new retail development has been built since 2010, with the vast majority of this development in the Assembly Square area and 90% occurring in larger buildings over 30,000 square feet.

Interviews with brokers and developers confirm that Somerville can be a competitive location for a range of businesses but is currently constrained by the lack of available space. Assembly Square has successfully leased space to several early stage life science companies that were priced out of Cambridge along with the new Partners HealthCare building. It has attracted interest to its planned new office building among information technology, life science and financial service firms from Boston, Cambridge and suburban locations. However, developers and brokers note that Somerville needs to provide a sizable rent discount to Cambridge and Boston's Seaport and Financial districts to be competitive.

A growing area of demand is among small early stage product-focused technology firms that are leaving incubators and laboratories. These firms are seeking smaller amounts (several thousand square feet) of multiuse space that includes offices, production space, and a research area. In some cases, they are reclaiming and converting former car repair, retail, and smaller industrial buildings. Consequently, these firms are unlikely to occupy new office buildings and when they occupy converted existing buildings, they are likely to fall below the 30,000 square foot threshold for linkage fees.

With large amounts of new development approved in Cambridge and Boston, Somerville will still face considerable competition for tenants to fill future development projects. Despite the intensive development that has already occurred in East Cambridge, the city has permitted 4.5 million square feet of new office and laboratory space, including 1.8 million square feet at Northpoint and 1.75 million square feet in four projects in Kendall Square⁹. Redevelopment of the Volpe Center site in Kendall Square may add another large block of commercial space. As of mid-2016, Boston had over 12.1 million square feet of development permitted but not yet built, with close to half of this space for non-institutional office development.

⁹ Cambridge Development Log, October to December 2016

Projected New Office, Retail and Hotel Development

Based on a growing local economy with strong demand for commercial space and Somerville's improving market position, Somerville is projected to build 1.68 million square feet of new office space over the next decade. This amount reflects combined net absorption of office space within Boston, Cambridge, and Somerville and nearby suburbs at the recent rate of 2.1 million square feet per year with Somerville gaining 10% of this regional demand. Allowing for two to three years of little or no development due to a recession, Somerville would absorb an average of 210,000 square feet over eight years for a total of 1.68 million square feet¹⁰. An additional 420,000 square feet of retail space is also projected at 20% of new office development. This ratio is below the 40% ratio of retail/office that was built from 2010 to 2016 and closer to the 15% retail/office proportion in the Union Square Neighborhood Plan. Given the amount of retail and restaurant space already built in Assembly Square, the next wave of development in this area is likely to have a lower proportion of retail space, closer to that planned for Union Square. An increment above 20% is projected to account for some mid-size retail projects outside the main employment center, such as a supermarket. Somerville is also projected to add another hotel project with 110,000 square feet, comparable to the current hotel project in Assembly Square.

The components of projected new development in Somerville over the next decade, as summarized in Table 6, include:

- 1.68 million square feet of office space;
- 420,000 square feet of retail and restaurant space; and
- 110,000 square feet of new hotel development.

Table 6. Summary of Expected Development, 10 Year Period

Type of Use	Projected Square Feet of New Development
Office Development	1,680,000
Retail and Restaurant	420,000
Hotel	110,000
Total	2,210,000

Source: Karl F. Seidman Consulting Services

Expected Tenant Businesses

To determine the likely jobs and earnings from this new development, the industries likely to occupy newly built space must be projected. Since new development in Somerville is competing for tenants with Boston, Cambridge and surrounding suburbs, new tenants are likely to reflect the diversity of growth industries within the region, not only Somerville, and thus have a larger share of information technology, financial and professional services and research and development industries than the city's current economic base. Moreover, since housing and job linkage fees

¹⁰ Cambridge Development Log, October to December 2016.

are tied to new development, the projections used for this analysis focus on new business and employment growth, which will also differ from Somerville and the region's overall net job growth. Somerville has experienced a decline in some parts of the economy, such as construction, manufacturing, and financial services, which offsets growth in other sectors to yield overall net employment changes. Since the growing sectors require different facilities, have different workforce needs and provide the basis for new development, it is Somerville's growth industries that occupy new large development growth projects and the resulting employment that will generate new housing and labor demand and constitute the nexus for the housing and job linkage fees to address this demand.

Based on Somerville's market position and trends in the Metro North regional economy, the distribution of tenants for the estimated 1.68 million square feet of new office development over the next decade is expected to be:

- Research and Development Services 20%
- Computer Systems Design and Related Services 20%
- Software Publishers 10%
- Data Processing and Related Services 5%
- Ambulatory Health Services 10%
- Individual and Family Services 5%
- Other Professional and Technical Services 5%
- Advertising and Related Services 5%
- Architecture and Engineering Services 5%
- Management of Companies and Enterprises 5%
- Employment Services 5%
- Insurance 5%

The first three are fast growing industries that are likely to continue expanding, support demand for new space and be willing to pay the higher rents associated with new development. Consequently, they are projected to account for 50% of new office space. The balance of absorption is divided among 9 industries, all of which have been growing in Somerville or the region and most of which have an existing base in the city. Although Ambulatory Health Care (health practitioners' offices) accounted for over 25% of the job growth among the city's high growth industries in the past decade, they are now expected to be a smaller share of occupants for new large office development as they are more likely to be spread across the city and less likely to occupy new buildings with higher rents. Furthermore, many Individual and Family Services tenants are small firms and non-profit organizations that are not able to afford the high rents in newly constructed large office buildings.

Retail Tenants

Based on the fast growth in restaurants and diverse growth across various types of retail stores, the projected growth in retail space is concentrated in restaurants (40% of space) with the balance occupied by growing retail sectors that include food and beverage stores, pharmacies and

miscellaneous stores (e.g., florists, gift stores, office supply stores, etc.) along with day care centers, bank branches and real estate offices. A sizable share of retail space (15%) is projected for arts, entertainment, and recreation related businesses, reflecting the Union Square Plan for a 5% requirement for creative space and the role these types of businesses have played in both the Davis Square and Assembly Square development.

Table 7 summarizes the projected development by use, tenant type and employment over the next ten years. Employment projections are based on square feet per employee on parameters used for the Union Square Neighborhood Plan along with industry wide data for restaurants.

The projected job growth in this report may differ from figures in the SomerVision plan because the SomerVision Plan addresses a longer time period, includes job growth from development projects under 30,000 square feet and also includes new jobs from growth of existing firms. These projections in Table 7 will be used to estimate the occupations and wage levels for new employees working in the expected new buildings and the associated impact on housing and workforce training needs.

Table 7. Projected New Development and Employment by Use and Industry, 2018 to 2027

Use/Tenant Type	Projected Square Feet	Square Feet per Employee	Estimated New Employment
<u>Office Tenants</u>			
Computer Systems Design and Related Services	336,000	200	1,680
Insurance	84,000	200	420
Research and Development Services	336,000	440	764
Employment Services	84,000	200	420
Software Publishers	168,000	200	840
Data Processing and Related Services	84,000	200	420
Doctor's Offices	168,000	200	840
Advertising and Related Services	84,000	200	420
Individual and Family Services	84,000	200	420
Architecture and Engineering Services	84,000	200	420
Other Professional and Technical Services	84,000	200	420
Management of Companies and Enterprises	84,000	200	420
<u>Retail and Ground Floor Tenants</u>			
Food and Beverage Stores	63,000	500	126
Pharmacy	21,000	500	42
General Merchandise	21,000	500	42
Clothing Stores	21,000	500	42
Arts, Entertainment and Recreation	63,000	500	126
Day Care Center	21,000	350	60
Bank Branches	21,000	350	60
Real Estate Offices	21,000	350	60
Restaurants	168,000	225	747
Hotel	110,000	1,000	110
Total	2,210,000		8,899

Source: Karl F. Seidman Consulting Services

Somerville Housing Market Conditions

This section summarizes current housing market conditions in Somerville to inform analysis and recommendations for the city’s affordable housing linkage policies.

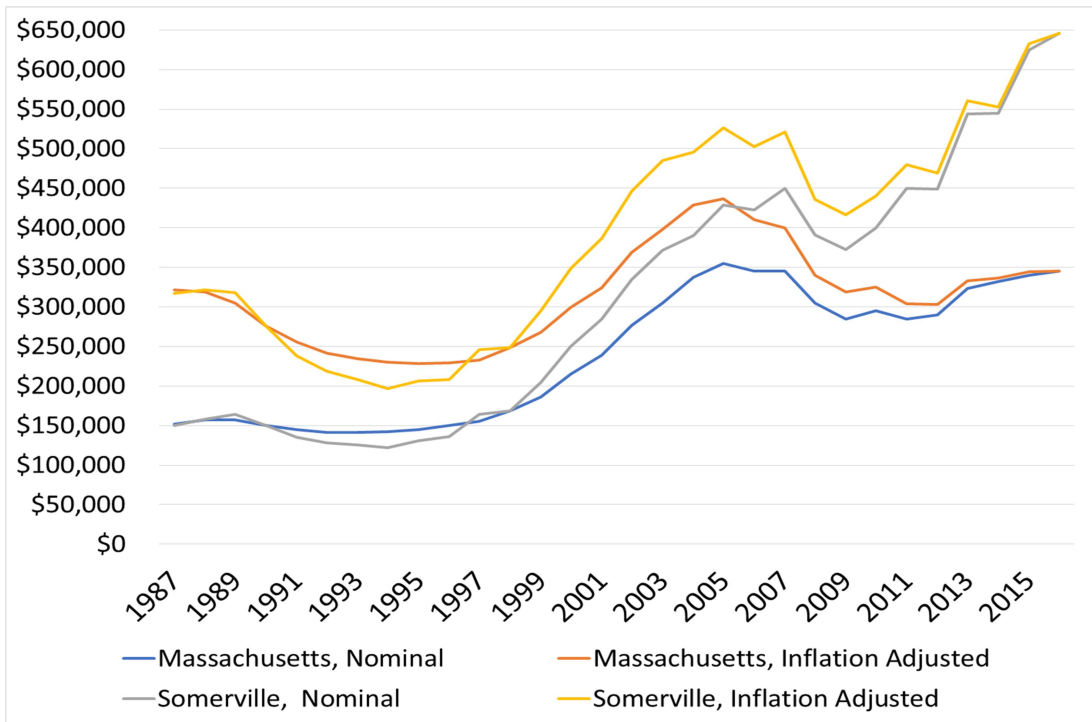
Housing Conditions in Somerville¹¹

The City of Somerville is experiencing a sustained and severe affordable housing shortage, because demand for affordable units is outstripping the supply of housing affordable to low and moderate-income households.

Ownership Housing

There has been a sustained run up in housing prices for condos and single-family homes in Somerville, as shown by data in Figure 6 and in Figure 7. The median price in 2016 of a single-family home was over \$646,000 and the median price of a condo was \$580,000.

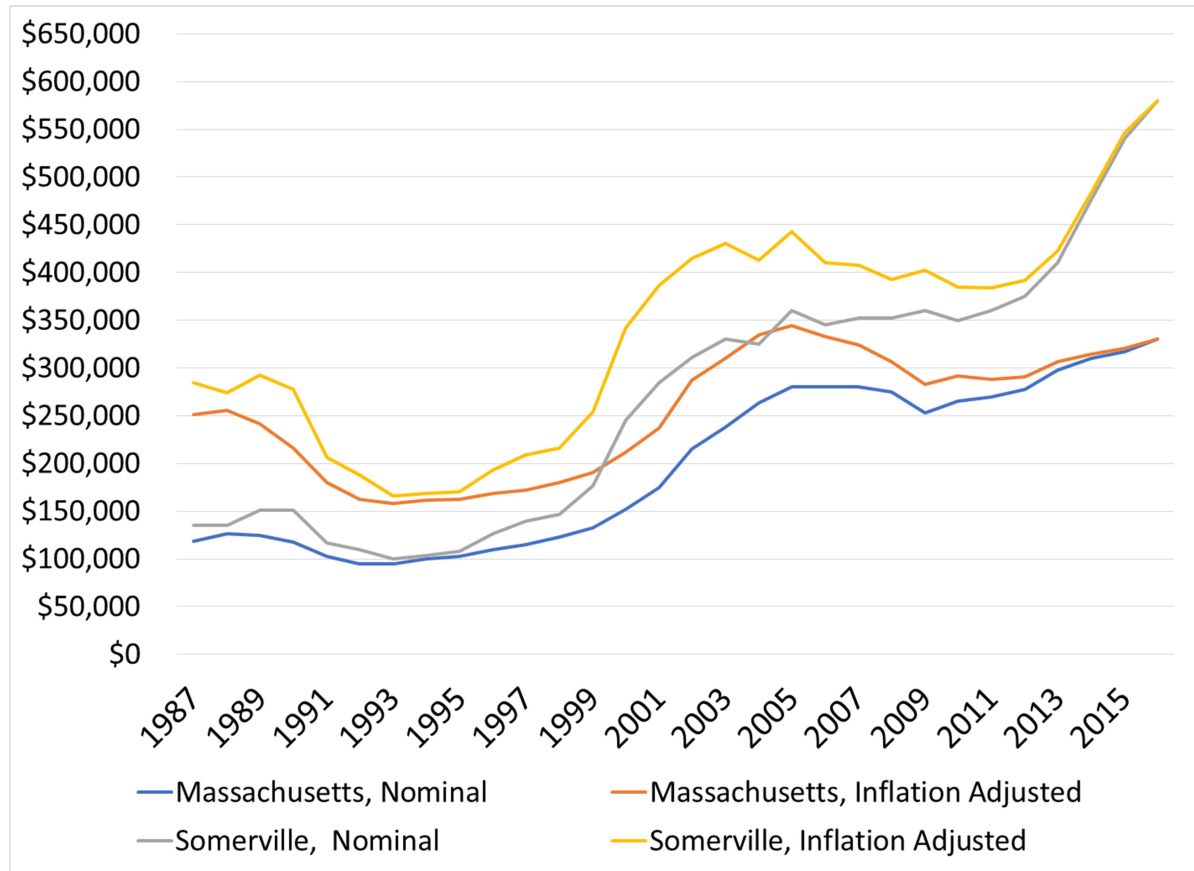
Figure 6. Trend in Median Sales Price of Single-family Units, Somerville and Massachusetts, in Nominal Value and 2017 Value of the Dollar



Source: Warren Group and ConsultEcon, Inc.

¹¹ Detailed statistical data on Somerville’s population, household, housing stock, and housing market conditions appear in Appendix B.

Figure 7. Trend in Median Sales Price of Condo Units, Somerville and Massachusetts, in Nominal Value and 2017 Value of the Dollar



Source: Warren Group and ConsultEcon, Inc.

Rental Housing

In addition to ownership housing prices that have far outpaced the growth in prices statewide, Somerville and surrounding areas have had a relatively low rental vacancy rate in recent years. As reported by the U.S. Census Bureau in the 2000 and 2010 censuses, the rental vacancy rate in Somerville increased from 1.6% in 2000 to 3.6% in 2010. Despite this increase, the rental vacancy rate is low when compared to the rates across the Boston region and the Commonwealth of Massachusetts as a whole. In 2010 the rental vacancy rates were 5.9% in the Boston region and 6.5% in the Commonwealth; early estimates for 2015 indicate that the rental vacancy rate is decreasing, to 3.3% in the Boston region and to 3.5% in the Commonwealth as a whole. Somerville continues to have low availability of affordable rental units. These trends continue to be a factor in the availability and cost of housing in Somerville.

Data from the Census Bureau also indicates that the median gross monthly rental payment among Somerville renting households has increased 30.6% from \$1,299 in 2010 to \$1,696 in

2015.¹² Assuming 30 percent of income used for housing costs, the average rent in 2015 was affordable to households earning \$67,840 or more annually. By comparison, the general rate of inflation nationally, as indicated by the Consumer Price Index (CPI), is much more modest. Between 2010 and 2015, CPI increased from 218.1 to 237.0, an 8.7% increase, which would indicate that Somerville households are devoting an increasing share of their financial resources to housing.

Asking rents for current rental housing are shown by data in Table 8. Average asking rents for all listings was just over \$3,000 per month. The majority of listings were in 2- and 3- bedroom apartments. Two-bedroom apartments leased for an average of \$2,700 or \$2.69 per square foot. Three-bedroom apartments averaged \$3,000 per month or \$2.54 per square foot. Smaller apartments earned a higher per square foot cost; studios rented at \$4.42 per square foot, while one-bedrooms rented at \$3.36 per square foot.

Table 8. Asking Rents by Unit Size in the City of Somerville, May 4, 2017

Unit Size	Number of Listings	Average Asking Rent	Average Square Feet ^{1/}	Average Rent Per Square Foot ^{1/}
Studio	4	\$2,293	526	\$4.42
1 Bedroom	33	\$2,424	789	\$3.36
2 Bedrooms	70	\$2,700	1,017	\$2.69
3 Bedrooms	67	\$3,011	1,221	\$2.54
4 Bedrooms	41	\$3,956	1,686	\$2.45
5 Bedrooms	3	\$4,242	2,157	\$1.85
6 Bedrooms	2	\$5,700	2,154	\$2.51
All Listings	220	\$3,028	1,123	\$2.77

^{1/} Square footage available for 142 listings or 65% of the total listings.

Source: Realtor.com and ConsultEcon, Inc.

Housing Costs as a Percent of Household Income

Due to the high cost of housing, many Somerville households devote a large portion of their incomes to housing. As shown by data in Table 9, 32.7% of all occupied housing units in Somerville in 2015 were “cost burdened,” which means the household was paying more than 30 percent of its income on housing costs. Housing is typically considered affordable if housing costs are no more than 30 percent of household incomes. In Somerville, both renters and homeowners are cost burdened. In 2015, about 32.6% of renters were cost-burdened, compared to 32.8% of homeowners. This is an improvement compared to 2010, when nearly half (47.2%) of renters were cost burdened and 40.2% of renters were cost burdened. The Somerville share of households paying over 30 percent of their income for housing was estimated at 32.6%, a great

¹² This 2015 figure is based on the Census Bureau’s American Community Survey 1-year (2015) estimate and reflects average tenant rent payments not including any rental subsidies.

improvement over 2010, when the estimate was 45.6%, and overall slightly lower than the ratio for the Boston MSA and Massachusetts, both at between 36 and 37%.

Table 9. Housing Costs as a Percentage of Household Income in the Past 12 Months by Tenure in the City of Somerville, 2010 and 2015

Percent of Income	Somerville, 2010		Somerville, 2015		Boston MSA, 2015		Massachusetts, 2015	
	Occupied Housing Units	% of Total	Occupied Housing Units	% of Total	Occupied Housing Units	% of Total	Occupied Housing Units	% of Total
Owner-Occupied								
Less than 20 Percent	3,095	29.8%	4,634	44.9%	494,470	45.3%	732,018	46.3%
20 to 29.9 Percent	3,126	30.1%	2,307	22.3%	277,385	25.4%	390,622	24.7%
30 Percent or More	4,175	40.2%	3,383	32.8%	319,048	29.2%	457,313	28.9%
Total	10,395	100.0%	10,324	100.0%	1,090,903	100.0%	1,579,953	100.0%
Renter-Occupied								
Zero, negative, or no cash rent	584	2.7%	1,009	4.7%	36,663	5.3%	59,780	6.1%
Less than 20 Percent	4,784	22.0%	6,462	30.0%	159,795	23.1%	225,400	23.0%
20 to 29.9 Percent	5,952	27.4%	7,021	32.6%	161,870	23.4%	223,440	22.8%
30 Percent or More	10,390	47.9%	7,021	32.6%	333,424	48.2%	471,379	48.1%
Total	21,710	100.0%	21,513	100.0%	691,752	100.0%	979,998	100.0%
Total								
Zero, negative, or no cash rent	584	1.8%	1,009	3.2%	36,663	2.1%	59,780	2.3%
Less than 20 Percent	7,878	24.5%	11,097	34.9%	654,264	36.7%	957,418	37.4%
20 to 29 Percent	9,078	28.3%	9,328	29.3%	439,255	24.6%	614,061	24.0%
30 Percent or More	14,564	45.4%	10,403	32.7%	652,472	36.6%	928,692	36.3%
Total	32,105	100.0%	31,837	100.0%	1,782,655	100.0%	2,559,951	100.0%
Households by Income Level								
Paying 30 Percent or More in Housing Costs								
Less than \$20,000	4,559	14.2%	2,515	7.9%	181,831	10.2%	289,274	11.3%
\$20,000 to \$34,999	3,596	11.2%	1,783	5.6%	140,830	7.9%	215,036	8.4%
\$35,000 to \$49,999	3,371	10.5%	1,433	4.5%	105,177	5.9%	145,917	5.7%
\$50,000 to \$74,999	2,119	6.6%	2,515	7.9%	117,655	6.6%	153,597	6.0%
\$75,000 or more	995	3.1%	2,133	6.7%	105,177	5.9%	122,878	4.8%
Total	14,640	45.6%	10,379	32.6%	650,669	36.5%	926,702	36.2%

Note: Income levels are not adjusted for inflation.

Source: U.S. Census American Community Survey, 2010, 1-Year Estimates; U.S. Census American Community Survey, 2015, 1-Year Estimates; and ConsultEcon, Inc.

Data in Table 10 shows the distribution of households by the percentage of income that was spent on rent in 2010 and 2015. In 2010, the largest household cohort was that paying 50 percent or more on rent. In 2015, this proportion decreased slightly, such that the largest cohorts were those paying between 15 and 20 percent of their income on rent. The cohort paying 50 percent or more of their income on rent decreased to only 15.2% of households. This is unlike the situation in the Boston region and in Massachusetts as a whole, where over 23% of households paid 50 percent or more on rent.

**Table 10. Households by Percent of Income Spent on Rent, 2010 and 2015
City of Somerville**

Percent of Income	Somerville, 2010		Somerville, 2015		Boston MSA, 2015		Massachusetts, 2015	
	Renting Households	% of Total	Renting Households	% of Total	Renting Households	% of Total	Renting Households	% of Total
Less than 10.0 percent	666	3.1%	1,413	6.6%	25,208	3.6%	35,632	3.6%
10.0 to 14.9 percent	1,843	8.7%	1,198	5.6%	52,981	7.7%	76,302	7.8%
15.0 to 19.9 percent	2,667	12.5%	3,833	17.8%	81,309	11.8%	113,151	11.5%
20.0 to 24.9 percent	3,405	16.0%	3,686	17.1%	85,601	12.4%	117,026	11.9%
25.0 to 29.9 percent	2,693	12.7%	3,343	15.5%	76,632	11.1%	106,053	10.8%
30.0 to 34.9 percent	2,070	9.7%	1,353	6.3%	71,428	10.3%	97,349	9.9%
35.0 to 39.9 percent	1,062	5.0%	1,059	4.9%	42,425	6.1%	60,544	6.2%
40.0 to 49.9 percent	1,854	8.7%	1,346	6.3%	55,642	8.0%	79,227	8.1%
50.0 percent or more	4,546	21.4%	3,267	15.2%	163,740	23.7%	234,295	23.9%
Not computed	466	2.2%	1,015	4.7%	36,786	5.3%	60,419	6.2%
Total	21,272	100.0%	21,513	100.0%	691,752	100.0%	979,998	100.0%

Source: U.S. Census Bureau, Decennial Census and 2015 American Community Survey; and ConsultEcon, Inc.

Total Residential Housing

According to the Census housing data, Somerville had 32,477 housing units available in 2000. There was a net gain of 1,243 housing units between 2000 and 2010, with a 3.8% increase in available housing to 33,720 units. Though the total number of housing units increased modestly, the number of vacant housing units increased over 75%, from 922 units to 1,615 units. The vacant units may have been vacant for sale or for rent at the time the survey was conducted. Between 2010 and 2015, homeowner and rental vacancy rates have decreased and more of Somerville’s housing units are occupied. The total estimated housing stock decreased slightly to 33,322, based on ACS 5-year estimates of total housing units. Given the margin of error of 807 units, the time period of the survey, and trend in market demand, the number of housing units in Somerville may have increased slightly between 2010 and 2015.

Summary of Somerville Housing Conditions

Somerville’s population is growing, housing is in high demand, and household composition is changing. Between 2010 and 2015, Somerville’s population surged while its households became slightly larger and more affluent. Data indicate that Somerville’s housing supply has not kept up with population growth during this period (although the ACS data used in this analysis may not adequately reflect the addition of new housing units in Somerville). ACS data indicate low vacancy rates for homeownership and rental housing. Recent sales prices for single-family and condominiums and current asking rents for available units are high and growing higher, although real estate brokers have noticed some leveling off in sales prices between 2016 and 2017. With increases in household income, the proportion of households that were cost burdened in Somerville was lower in 2015 than in 2010. This may indicate that new market rate housing is attracting households better able to afford Somerville’s high prices, and that low- and moderate-income households are leaving the city.

National Housing Market Trends

Somerville’s market experience is reflected in national and regional trends. According to *The State of the Nation’s Housing, 2016*, the national housing market continues to rebound from the economic downturn, largely due to strength in the rental sector. Rental vacancy rates have fallen steadily since 2010, with rents increasing at twice the rate of inflation. Multi-family rental construction accounted for more than 30% of all housing starts, substantially more than the long term average. Capitalization rates for multi-family housing are lower than at the height of the housing boom a decade ago, reflecting the strength of the rental market and the low interest rate environment that has investors looking for a good return on their investment. However, most of the units constructed are at the upper end of the market, which is similar to the situation in Somerville. The strength of the rental market has contributed to an increase in the number of renters that are cost burdened—those households that are paying more than 30% of their income on rent—especially among low-income and very low-income households.

Housing prices for owner-occupied homes continue to increase but have not yet returned to previous levels before the economic downturn except in a few leading markets, like the Boston region. New home sales and new ownership housing construction are at historically low levels and low homeownership vacancy rates are contributing to increases in prices, despite an overall decline in the homeownership rate nationally. The homeownership rate has declined due to a number of demographic and economic factors including the slowing of new household formation as people are delaying marriage and child birth, high levels of foreclosures, low levels of income growth, higher lending standards, and increasing student debt burdens. As the economic recovery continues to support employment and income growth, it is anticipated that household formation will increase and once again provide support for higher levels of homeownership.

Regional Housing Market

According to *Greater Boston Housing Report Card, 2016*, Greater Boston’s housing market is strained under a growing population of millennials, retirees, and low-income immigrants. The region¹³ has a housing supply mismatch that is unable to accommodate the changing demand for housing from the region’s population. The core cities in the region, such as Somerville, Cambridge and Boston, have an undersupply of multi-family housing that is desirable among the younger millennials, born between 1980 and 2000, and aging baby boomers, born between 1946 and 1964. Millennials have indicated a strong desire to locate in dense, walkable neighborhoods.¹⁴ According to *Greater Boston Housing Report Card, 2016*, Boston’s suburbs conversely have a reported oversupply of single-family homes that appeal to families with children because the “baby bust” generation, born between 1965 and 1980, is not large enough to absorb existing homes put on the market by aging baby boomers and the new homes being built, while Millennials, burdened with student debt, are unable to afford those single-family homes.

¹³ The region here is defined as Suffolk, Essex, Middlesex, Norfolk and Plymouth Counties.

¹⁴ Lachman, M. Leanne, and Deborah L. Brett. *Gen Y and Housing: What They Want and Where They Want It*. Washington, D.C.: Urban Land Institute, 2015.

Greater Boston's housing prices continue to increase, but with uneven changes across its communities. Sales in many traditionally desirable and high-priced communities are slowing while sales are increasing in more affordable communities, suggesting that there are limits to sustainable price increases due to affordability issues. Single-family home prices are flattening in many communities while the prices for condominiums are surging, reflecting the uneven and evolving demand for different types of housing.

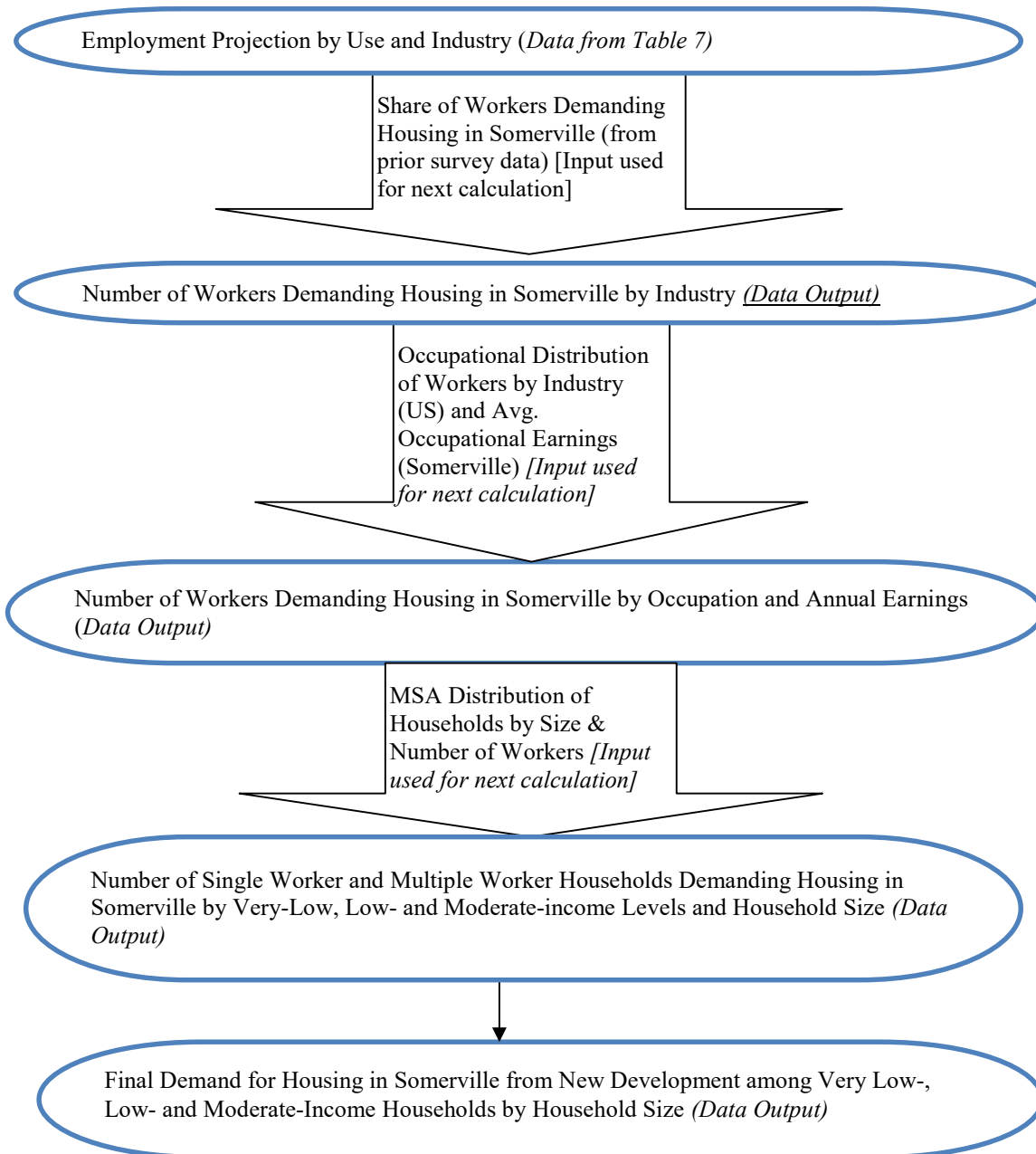
The *Greater Boston Housing Report Card, 2016* refers to and reinforces 2015 analysis of the "housing cost conundrum" that exists because the Boston region's supply of housing has not kept up with housing demand that has been driven by the increase in jobs in the region. Household growth in the region would have likely been higher had the amount of housing produced kept up with demand. The report suggests that supply has lagged because the cost of developing housing is too high to provide housing suitable for the region's working and middle-income households. Another large contributor to the high costs is restrictive zoning controls at the local level. Housing costs are so high that it is "virtually impossible for supply to match demand and therefore the vicious cycle of price appreciation and rent escalation in Greater Boston is fundamentally unmanageable under current economic and political conditions."¹⁵ This indicates that the City of Somerville is not alone in experiencing the high cost of housing production. Therefore, seeking out solutions at a state and regional level that encourage housing production, including affordable units, outside of the city and lowering development costs overall will contribute to easing the pressure on housing demand and production in the city of Somerville.

¹⁵ Barry Bluestone et al., *The Greater Boston Housing Report Card 2015: The Housing Cost Conundrum*, Prepared by the Kitty and Michael Dukakis Center for Urban and Regional Policy, Northeastern University, Prepared for the Boston Foundation, Page 8.

Impact of Large Scale Development on Affordable Housing Demand

Using the 10-year development scenario and employment projections summarized in Table 7 of Section 2, this section forecasts the demand for affordable housing in Somerville that will result from this development. Since several data sources and assumptions were used to prepare the forecast, a full explanation of the methodology is provided along with the results. Figure 8 provides an overview of the analytical steps and data sources for the housing demand projections.

Figure 8. Methodology and Data Sources for Housing Demand Analysis



Since demand for affordable housing is tied to household income, the first step in the analysis projects the distribution of the forecasted new jobs by employee earnings. To do this, the number of new jobs was distributed to 22 occupational categories for each of the 22 industries expected to occupy new development in Somerville. The distribution was calculated using 2014 national data for each industry's occupational distribution. Earnings were then estimated for these occupations based on the median annual earnings for the respective occupation in May 2016 for the Metro North Workforce Development Area adjusted for inflation to reflect March 2017 value of the dollar¹⁶. These calculations yield the projected number of new jobs at different annual earning levels by industry.

Since new employees will, for different reasons, desire to live in other communities as well as Somerville, it is necessary to determine the share that will demand housing in Somerville. To estimate the percentage of new employees who will demand housing within the city, the study adapted results from a 2014 survey of Somerville workers on the extent to which they moved to Somerville as a result of obtaining a job in the city. The survey results indicated that 17.5% of Somerville office workers and 6.8% of retail and restaurant workers either moved to the city or sought housing in Somerville but did not move there due to high housing costs. These percentages were multiplied by the gross number of new jobs by occupational distribution in each industry to estimate the number of new workers who will demand housing in Somerville.

The occupational distribution in each industry was then applied to the number of workers in that industry who are expected to seek Somerville housing to estimate their earnings distribution. Table 11 summarizes the resulting earning distribution, focusing on those workers in low- and moderate-income categories, assuming a single worker, 2-person household. While these figures show the earning distribution among projected new jobs in new commercial development, they do not reflect the number of households that will demand housing in each income category for two reasons: (1) many households will be larger and thus a higher income threshold will determine if they are very low-income, low-income or moderate-income; and (2) households with two workers will have higher total incomes that reflect the earnings of both workers and may not be eligible for affordable housing under current income limits.

¹⁶ The Urban Wage Earner CPI was used for this inflation adjustment.

Table 11. Distribution of Annual Earnings for Expected Jobs among New Employees Demanding Housing in Somerville from New Development by Use and Earnings Level

Tenant Use/Industry	Gross New Jobs	Number of Workers Demanding Housing	Number of Workers with Earnings below 50% of AMI (Very Low-income) ^{1/}	Number of Workers with Earnings 50 to 80% of AMI (Low-income) ^{1/}	Number of Workers with Earnings 80% to 110% of AMI (Moderate-income) ^{1/}	Total Workers with Earnings Below 110% AMI ^{1/}
Office-Other	3,060	540	145	143	127	415
Office—IT Related	2,940	515	42	68	63	173
Hospitals and Medical Offices	840	147	26	50	65	141
Research and Development (Hospitals and Private Firms)	764	134	8	15	56	79
Restaurants	747	51	50	0	0	50
Retail, Amusements and Personal Services	438	31	23	4	4	31
Hotel	110	7	5	1	0	6
Total	8,899	1,425	299	281	315	895

^{1/} Income level for annual earnings from one employee in a two person household, the most prevalent household size in Somerville.

Source: Karl F. Seidman Consulting Services and ConsultEcon, Inc.

The next step to project demand for affordable housing units among the 1,425 employees who are expected to seek housing in Somerville requires adjusting for the number of wage-earners and the size of these workers' households. The distribution of households by number of earners and household size is based on the most recent (2011 to 2015) American Community Survey data for the Boston Metropolitan Statistical Area Workers in each occupation seeking housing in Somerville were first divided into one-, two-, three- and four or more-person households based on the region's household size distribution¹⁷. Then each household size group was divided into one-, two- and three-worker households, using the American Community Survey percentages. The results of this analysis are presented in Table 12 and were used to calculate the final affordable housing demand presented in Table 13, as detailed below.

Table 12. Household Size by Number of Wage-Earners, Boston Metropolitan Statistical Area

Workers per Household	Worker Households by Size			
	1 Person	2 Persons	3 Persons	4 or More Persons
1 worker	100.0%	42.0%	32.8%	28.0%
2 worker	0.0%	58.0%	47.5%	46.4%
3 or more workers	0.0%	0.0%	19.7%	25.6%
Total	100.0%	100.0%	100.0%	100.0%

Source: 2011-2015 American Community Survey 5-Year Estimates; and ConsultEcon, Inc.

¹⁷ From the 2011 to 2015 ACS, the ratios for Somerville are: 28.1% one-person, 32.5% two-person, 16.2% three-person and 22.8% four-or-more-persons.

Demand from Single-Earner Households

For single earner households, the average wage for the occupation was used to estimate their household income and determine if they fell below the very low-income, low-income and moderate-income thresholds for their respective household size. Among the single earner households who are expected to demand Somerville housing, 133 are estimated to be very low-income (less than 50% of area median income); 182 are projected to be low-income (between 50% and 80% of area median income); and, 177 are estimated to be moderate-income (80% to 110% of area median income) for a total demand of 492 affordable housing units.

Demand from Multiple-Earner Households

Projecting affordable housing demand among multiple-earner households required estimating the additional household earnings from other wage earners in the household. Since data regarding the distribution of incomes within multi-worker households is not available, this analysis assumes that the second worker’s earnings equaled the median wage for all occupations in Somerville, which was \$55,134 in March 2017 value of the dollar. When the distribution of number of workers is used, this resulted in an additional 99 dual worker households due to new development that will demand housing in Somerville, all in the moderate-income category. Note that in this analysis no three-worker households fall within the very low-, low- or moderate-income ranges.

Across all household sizes and income groups, the total number of affordable housing units needed to meet the demand generated by new commercial development is estimated at 591 units. Data in Table 13 summarizes the total projected demand for new housing by household size and among low-income, moderate-income and middle-income households. Data in Table 14 shows the income limits by household size.

Table 13. New Affordable Housing Demand in Somerville from New Large Developments by Income Type and Household Size, 2017 to 2026

Income Levels	Households by Size				Total Households	1-Worker Households	2-Worker Households
	1 Person	2 Persons	3 Persons	4 or More Persons			
Very Low Income	41	41	15	36	133	133	0
Low Income	120	39	18	5	182	182	0
Moderate Income	55	61	57	103	276	177	99
Total	216	141	90	144	591	492	99

Source: Karl F. Seidman Consulting Services and ConsultEcon, Inc.

Table 14. Somerville Income Limits for Very-Low-Income, Low-Income and Moderate-Income Households by Household Size

Income Level	Description	1 person	2 person	3 person	4 person
Very Low Income	less than 50% of median	\$34,350	\$39,250	\$44,150	\$49,050
Low Income	50% to 80% of median	\$51,150	\$58,450	\$65,750	\$73,050
Moderate Income	81% to 110% of median	\$75,850	\$86,700	\$97,550	\$108,350

Source: U.S. Department of Housing and Urban Development; City of Somerville.

Financing Gap Required to Mitigate Impact of Large Scale Development

This section builds upon the framework established in the affordable housing demand analysis to project the total financing gap required to mitigate the projected increased demand for affordable housing generated by the 10-year forecast of new commercial development in Somerville. Housing affordability is a function of household income and the cost of available rental and for-sale housing units in a given real estate market. The City of Somerville and the entire Boston region suffer from a well-known and demonstrated lack of sufficient affordable housing. This section calculates the financing gap required to create new affordable housing that satisfies the demand for it from new workers in new commercial development by comparing the total development cost of new affordable housing units to the housing rents/prices that can be supported by very-low, low, and moderate-income households. The basis for imposing a linkage fee on new commercial development is that there is a nexus between job-creating commercial development and the increased demand for affordable housing.

Methodology

Following is a summary of data and analyses used in calculating the projected total per square foot financing gap required from new commercial development to support development of new affordable housing for workers. The financing gap would be for very low-, low-, and moderate-income households whose jobs would be located in Somerville’s new commercial development projected over the next 10 years.

The analyses establish that affordable rents and affordable sales prices do not currently support development of affordable housing, due to high development costs. Therefore, a financing gap exists that must be filled to stimulate affordable housing development. These analyses estimate the amount of this financing gap to be filled by the linkage fee collected from new commercial development projects in Somerville. The estimated total required financing gap is the difference between the total development costs of producing new affordable housing units and the capitalized value of affordable rent and unit sale proceeds. The required financing gap is presented as a per square foot cost for projected commercial development.

The previous section projected demand for new housing among 591 very low-, low-, and moderate-income households ranging in size from one-person to four-or-more-persons. This section determines the projected financing gap required to construct housing that will satisfy projected ten-year affordable housing demand generated by worker households in new development commercial buildings, using a modified demand estimate of 592.¹⁸ Following is a review of the methodology used to calculate the total financing gap required:

Estimate the number of very-low-income, low-income and moderate-income households that would be generated by the new development. Specify demand by number of persons in the household, number of bedrooms, and by tenure (i.e. renter-occupied units and owner-occupied units).

Estimate the total development costs of affordable units to satisfy the demand created based on unit costs of recently completed or currently under construction new affordable housing developments.

Estimate the potential capitalized revenue due to annual rents and sales proceeds of affordable units segmented by very-low-income, low-income and moderate-income households. Calculate the difference between the total development costs and the capitalized revenue that is internally generated by renters and owners. This amount is the total financing gap required to produce the targeted new affordable units created by demand from new workers in new commercial developments.

Divide the total financing gap amount by the total commercial square feet subject to calculate the linkage fee, based on the current policy for exempt square feet. This is the fee level required to generate the full financing gap needed to produce the new affordable units created by demand from new workers in new commercial developments.

The majority of state and federal funding programs for affordable housing are targeted to low-income households. Federal and state tax credits prioritize creation of units for households below 60% Area Median Income (AMI). Therefore, because of the targeting of available funding sources, it is likely that much of the new affordable housing created in Somerville will be targeted to these income levels. As the following analysis shows, the amount of the financing gap required to create housing for very-low-income, low-income and moderate-income households is substantial. Yet moderate-income households are also increasingly finding housing to be unaffordable in Somerville's housing market. Focusing on very low-income, low-income, and moderate-income households will expand access to a broader range of funding sources to address the financing gap and enhance development feasibility.

¹⁸ Due to the division of the 591 units among multiple categories of household size, rental units and ownership units, fractional units can result. Rounding is used to insure the analysis occurs for whole numbers of units, rather than partial housing units. Due to rounding results after the distribution of the 591 units across household size and rental versus ownership units, the total number of units demanded increased by one to 592 to maintain consistency and clarity of analysis by only using rounded whole numbers of rental and ownership units. The total number of units is one unit higher than the housing unit demand presented earlier.

The following key assumptions were made to calculate the required housing financing gap.

Mix of Rental and Ownership Units

New affordable housing has primarily been supplied through rental housing, due to the available financing from federal and state sources. This analysis assumes that the affordable housing to be demanded will be a mix of rental and ownership units. The estimated financing gap in this analysis assumes that:

- 33% of units for moderate-income households will be ownership units and the remaining 67% will be rental;
- 10% of units for low-income households will be ownership units and the remaining 90% will be rental; and
- All of the units for very low-income households will be rental units.

Data in Table 15 show the distribution of rental and home ownership housing units by size and income level.

**Table 15. New Affordable Housing Demand in Somerville
by Rental and Ownership Units**

	Households by Size				Total	Percent to Total
	One Person	Two Person	Three Person	Four Person		
<i>Distribution of Units</i>						
Very Low Income	41	41	15	36	133	23%
Low Income	120	39	18	5	182	31%
Moderate Income	55	61	57	103	276	47%
Total Units	216	141	90	144	591	100%
<i>Percent of Households Demanding Rental Housing ^{1/}</i>						
Very Low Income	100%	100%	100%	100%		
Low Income	90%	90%	90%	90%		
Moderate Income	67%	67%	67%	67%		
<i>Number of Rental Units ^{2/}</i>						
Very Low Income	41	41	15	36	133	28%
Low Income	108	35	16	5	164	34%
Moderate Income	37	41	38	69	185	38%
Total	186	117	69	110	482	100%
<i>Percent of Households Demanding Ownership Housing ^{1/}</i>						
Very Low Income	0%	0%	0%	0%		
Low Income	10%	10%	10%	10%		
Moderate Income	33%	33%	33%	33%		
<i>Number of Ownership Units ^{2/}</i>						
Very Low Income	0	0	0	0	0	0%
Low Income	12	4	2	1	19	17%
Moderate Income	18	20	19	34	91	83%
Total	30	24	21	35	110	100%
<i>Units by Tenure (rounded)</i>						
Rental	186	117	69	110	482	81%
Ownership	30	24	21	35	110	19%
Total ^{2/}	216	141	90	145	592	100%

1/ Source: City of Somerville.

2/ Rounding affects totals and the total number of units demanded is increased by one in this table to maintain consistency and clarity of analysis focused on whole numbers of rental and ownership units. The total number of units is one unit higher than the housing unit demand presented prior.

Note: Rounding may affect totals.

Source: City of Somerville; Karl F. Seidman Consulting Services; and ConsultEcon, Inc.

Unit Distribution for New Affordable Housing

The distribution of households by number of persons and income levels was derived previously. The household sizes range from one-person to four-or-more-persons. One-person households are assumed to be 100% one-bedroom units. Two-person households are allocated as 20% to one-bedroom units and 80% to two-bedroom units. Three-person households are allocated 5% one-bedroom units, 80% to two-bedroom units and 15% to three-bedroom units. Four-person or larger households are allocated to three-bedroom units. For the purposes of this analysis, the allocation of households by units by number of bedrooms is assumed to be the same for rental units and ownership units. Data in Table 16 show the estimated distribution of rental housing units by size and income levels (very low-income, low-income and moderate-income). Data in Table 17 show the mix of ownership units, including low-income and moderate-income households.

**Table 16. Rental Units by Number of Persons and Number of Bedrooms
for Low-Income and Moderate-Income Households**

	Households by Size				Total
	One Person	Two Person	Three Person	Four Person	
<i>Number of Rental Units (rounded)</i>					
Very Low Income	41	41	15	36	133
Low Income	108	35	16	5	164
Moderate Income	37	41	38	69	185
Total	186	117	69	110	482
<i>Distribution of Units by Number of Bedrooms ^{1/}</i>					
One Bedroom	100%	20%	5%	0%	44%
Two Bedrooms	0%	80%	80%	0%	31%
Three Bedrooms	0%	0%	15%	100%	25%
Total	100%	100%	100%	100%	100%
<i>Distribution of Very Low Income Rental Units</i>					
One Bedroom	41	8	1	0	50
Two Bedrooms	0	33	12	0	45
Three Bedrooms	0	0	2	36	38
Total	41	41	15	36	133
<i>Distribution of Low Income Rental Units</i>					
One Bedroom	108	7	1	0	116
Two Bedrooms	0	28	13	0	41
Three Bedrooms	0	0	2	5	7
Total	108	35	16	5	164
<i>Distribution of Moderate Income Rental Units</i>					
One Bedroom	37	8	2	0	47
Two Bedrooms	0	33	30	0	63
Three Bedrooms	0	0	6	69	75
Total	37	41	38	69	185
<i>Total Rental Units by Number of Bedrooms</i>					
One Bedroom	186	23	4	0	213
Two Bedrooms	0	94	55	0	149
Three Bedrooms	0	0	10	110	120
Total Rental	186	117	69	110	482

Note: Rounding may affect totals.

1/ Source: City of Somerville.

Source: City of Somerville; Karl F. Seidman Consulting Services; and ConsultEcon, Inc.

Table 17. Ownership Units by Number of Persons and Number of Bedrooms for Low-Income and Moderate-Income Households

	Households by Size				Total
	One Person	Two Person	Three Person	Four Person	
<i>Number of Ownership Units (rounded)</i>					
Very Low Income	0	0	0	0	0
Low Income	12	4	2	1	19
Moderate Income	18	20	19	34	91
Total	30	24	21	35	110
<i>Distribution of Units by Number of Bedrooms ^{1/}</i>					
One Bedroom	100%	20%	5%	0%	33%
Two Bedrooms	0%	80%	80%	0%	33%
Three Bedrooms	0%	0%	15%	100%	35%
Total	100%	100%	100%	100%	100%
<i>Distribution of Low Income Ownership Units</i>					
One Bedroom	12	1	0	0	13
Two Bedrooms	0	3	2	0	5
Three Bedrooms	0	0	0	1	1
Total	12	4	2	1	19
<i>Distribution of Moderate Income Ownership Units</i>					
One Bedroom	18	4	1	0	23
Two Bedrooms	0	16	15	0	31
Three Bedrooms	0	0	3	34	37
Total	18	20	19	34	91
<i>Total Ownership Units by Number of Bedrooms</i>					
One Bedroom	30	5	1	0	36
Two Bedrooms	0	19	17	0	36
Three Bedrooms	0	0	3	35	38
Total Ownership	30	24	21	35	110

Note: Rounding may affect totals.

^{1/} Source: City of Somerville.

Source: City of Somerville; Karl F. Seidman Consulting Services; and ConsultEcon, Inc.

Recent Unit Costs

Somerville's Affordable Housing Trust Fund (AHTF) has supported two affordable rental housing projects: Saint Polycarp Village Phase III, opened in 2014, and 181 Washington, opening in 2017. The total AHTF contribution to both projects was \$295,000, approximately 1 percent of the total development costs. Both projects are owned and managed by the Somerville Community Corporation. Saint Polycarp Village Phase III, with 31 units of new construction, cost \$360,000 per unit (adjusted for inflation) and 181 Washington, with 35 units of new construction and 2,400 square feet of retail space, cost \$436,000. Over three years, the per-unit cost of producing new affordable housing units in Somerville increased 21%. On both projects, the distribution of costs by type was roughly the same, averaging 61% of total development costs (TDC) for construction costs, 19% for soft costs, 10% for acquisition costs, and 10% for developer fees, developer overhead, and capitalized reserves.

Development costs for new housing are high, driven by increasing construction costs and increasing acquisition costs. Interviews with housing developers active in Somerville and the Boston area report construction costs ranging from \$200 per square foot (SF) to \$260 per SF for stick frame construction over podium, which is predominant and in scale with Somerville's urban design and density. One construction cost estimate for a proposed affordable housing project in Somerville was \$281 per SF. Higher density high-rise developments are reportedly costing \$305 per SF. Construction costs are reportedly high due to the higher costs of construction labor, of which there is a shortage in the Boston area due to the amount of development activity.

Acquisition costs for land and buildings in Somerville are also very high. The average acquisition cost per unit was \$40,000 per unit for the two affordable housing projects in Somerville. Market rate developers are reporting unit acquisition costs exceeding \$100,000 per unit for new construction. High acquisition costs and high construction costs combine to make the overall cost of producing new housing in Somerville very high. However, market rate development in the city is sustained because of the high price of housing. Average prices for condominiums in Somerville exceeded \$600,000 per unit in 2016.

The Massachusetts Department of Housing and Community Development advised in 2017 that the cost of a unit of affordable rental housing produced with Low-income Housing Tax Credits in the urban areas of the Boston area, such as Somerville, should not exceed \$399,000 per unit. Recent trends in the housing market in Somerville indicate that if construction and acquisition costs remain as high as they are in the future, the City of Somerville and its affordable housing developers will have a difficult time producing newly constructed affordable housing units.

Development Project Costs

The average costs of housing development projects supplied by the City of Somerville and the costs based on developer interviews are used as the basis for calculating the costs of new affordable housing in Somerville over the next ten years. It is likely, however, that housing development costs will vary considerably according to the particulars of individual projects and

may change over time. If development activity slows in the Boston area and housing prices decline in Somerville, the cost of construction may come down, thereby lowering the potential cost of affordable housing. However, according to the City of Somerville, there are few large city-owned land parcels that can support the development of hundreds of housing units, so the cost of land and building acquisition may be higher in the future thus increasing the cost to provide affordable housing.

Rental Housing

Data in Table 18 summarize total development costs (TDC) of developing affordable rental units in Somerville.

Table 18. Calculation of Total Development Costs of Affordable Rental Housing Units in Somerville over a 10-Year Period in 2017 Dollars

<i>Project and Cost Assumptions</i>		
Number of Units		482
Average Unit Size GSF ^{1/}		1,068.5
Total Project GSF		515,000
<i>Cost Assumptions</i> ^{2/}		
Soft Costs, including Design, Permitting, Overhead, Profit, and Contingency, as a Percent of Construction Cost		40.0%
Construction Cost and Construction Contingency per SF		\$250
Land/Acquisition per Unit Costs		\$40,000
<i>Development Costs</i>		
	Amount	Percent to Total
Soft Costs, including Design, Permitting, Overhead, and Developer's Fee, and Project Contingency	\$51,500,000	25.8%
Construction Cost and Construction Contingency	128,750,000	64.5%
Land/Acquisition	19,280,000	9.7%
Total Development Costs (TDC)	\$199,530,000	100.0%
TDC per Unit	\$413,963	
TDC per GSF	\$387	

1/ See Table A-1 in Appendix for mix of units by size.

2/ Development cost assumptions are based on recent experience of selected housing projects in Somerville, and interviews with housing developers. Due to the variation in the size of the units demanded, construction costs are based on project size in square foot costs, with a percentage increase for soft costs and per unit acquisition costs for land and buildings.

Source: City of Somerville; Karl F. Seidman Consulting Services; and ConsultEcon, Inc.

Ownership Housing

Data in Table 19 summarize TDC of developing affordable ownership units in Somerville. The development cost factors used for ownership housing are the same as rental housing due to the lack of ownership projects included in the available housing data supplied by the City. Further, the cost of rental housing on a per square foot basis is considered representative of the costs for multi-family ownership housing. Total development costs per unit are higher for ownership units than for rental units because they are expected to house large households on average and thus have a larger average unit size.

Table 19. Calculation of Total Development Costs of Affordable Ownership Housing Units in Somerville over a 10-Year Period in 2017 Dollars

Project Assumptions		
Number of Units		110
Average Unit Size GSF ^{1/}		1,145.5
Total Project GSF		126,000
Cost Assumptions ^{2/}		
Soft Costs, including Design, Permitting, Overhead, Profit, and Contingency, as a Percent of Construction Cost		40.0%
Construction Cost and Construction Contingency per SF		\$250
Land/Acquisition per Unit Costs		\$40,000
Development Costs		
	Amount	Percent to Total
Soft Costs, including Design, Permitting, Overhead, and Developer's Fee, and Project Contingency	\$12,600,000	26.0%
Construction Cost and Construction Contingency	31,500,000	64.9%
Land/Acquisition	4,400,000	9.1%
Total Development Costs (TDC)	\$48,500,000	100.0%
TDC per Unit	\$440,909	
TDC per GSF	\$385	

1/ See Table A-2 in Appendix for mix of units by size.

2/ Development cost assumptions are based on average costs for recent experience of selected housing projects in Somerville. Due to the variation in the size of the units demanded, construction costs are based on project size in square foot costs, with percentage increase for soft costs and per unit acquisition costs for land and buildings.

Source: City of Somerville; Karl F. Seidman Consulting Services; and ConsultEcon, Inc.

Rental Housing Development Project Revenue

An important step in calculating the financing gap required to create new affordable housing units is to define the development project’s revenue that will be used to support the development and operations of new affordable housing. This analysis assumes that the new rental housing will solely be supported by rental income from tenant households and ownership housing will be supported by the sales of affordable units. Affordable rents and sales prices are based on household income. In prior sections of this report, annual occupational wages were the input for establishing the household income and resulting demand for affordable housing by very-low, low, moderate-income households of new workers in new commercial development in Somerville. The weighted average gross income for each income level, as shown by the data in Table 20, is the basis for calculating affordable rents and sales prices that in turn support the development of affordable housing.

Table 20. Weighted Average Income by Income Group and Household Size, Households of Workers in Projected Commercial Development in 2017 Dollars

	Households by Number of Persons			
	One Person	Two Person	Three Person	Four Person
<i>Distribution of Weighted Average Income</i>				
Very Low Income	\$28,677	\$32,429	\$32,456	\$37,724
Low Income	\$41,553	\$45,295	\$47,193	\$57,766
Moderate Income	\$70,390	\$77,344	\$87,454	\$90,733

Source: Bureau of Labor Statistics, Karl F. Seidman Consulting Services; and, ConsultEcon, Inc.

The financing gap for new affordable rental housing is calculated first, followed by the calculation of the required financing gap for affordable ownership housing.

Affordable Rent Levels

The affordable rents for rental units are based on the estimated annual income of workers in the new commercial developments in Somerville. Construction costs for the rental affordable housing units projected in this analysis are supported by rental revenue from tenants with additional funding sources used to fill the gap between rental revenue and the cost of developing the housing. In general, the federal department of Housing and Urban Development (HUD) is a source of much of the funding for affordable housing. HUD defines housing costs as affordable to a household when the total cost of shelter consumes no more than 30% of gross (total) income. For this analysis, households are assumed to pay 30% of household income in rent. Data in Table 21 detail the assumed income levels of households to derive the total gross rental revenue for the units, based on the distribution of households by size and income. Total annual gross rental revenue for the units is estimated at \$8.0 million.

Table 21. Annual Rental Revenue by Household Income and Size of Household in 2017 Dollars

Household Size	Annual Income ^{1/}	Applicable Monthly Rent ^{2/}	Number of Households	Total Annual Rent
<i>Very Low Income Households</i>				
1 Person	\$28,677	\$717	41	\$352,764
2 Persons	\$32,429	\$811	41	\$399,012
3 Persons	\$32,456	\$811	15	\$145,980
4 Persons	\$37,724	\$943	36	\$407,376
<i>Low Income</i>				
1 Person	\$41,553	\$1,039	108	\$1,346,544
2 Persons	\$45,295	\$1,132	35	\$475,440
3 Persons	\$47,193	\$1,180	16	\$226,560
4 Persons	\$57,766	\$1,444	5	\$86,640
<i>Moderate Income Households</i>				
1 Person	\$70,390	\$1,760	37	\$781,440
2 Persons	\$77,344	\$1,934	41	\$951,528
3 Persons	\$87,454	\$2,186	38	\$996,816
4 Persons	\$90,733	\$2,268	69	\$1,877,904
Total Households / Housing Units			482	
Total Annual Rent				\$8,048,004
Aggregate Annual Rent by Income Level				
	Number of Units	Total Annual Rent (Rounded)	Percent of Total Rent	Average Monthly Rent
Very Low Income	133	\$1,305,132	16.2%	\$818
Low Income	164	\$2,135,184	26.5%	\$1,085
Moderate Income	185	\$4,607,688	57.3%	\$2,076
Total	482	\$8,048,004	100.0%	\$1,391

1/ Weighted average annual earnings based on anticipated mix of occupations and wages in new non-residential development in Somerville.

2/ Assumed at 30% of monthly income. Rents are rounded to nearest \$1.

Note: Rounding may affect totals.

Source: City of Somerville; Karl F. Seidman Consulting Services; and ConsultEcon, Inc.

To calculate the rental revenue available to support the total development costs described above, the gross rents must be adjusted to reflect lost revenue due to periodic vacancies and the operating costs of maintaining and managing housing. As shown by data in Table 22, vacancy is assumed at 3% of gross rental revenue. Operating costs typically include such items as building management, janitorial services, trash removal, building maintenance, landscaping, and marketing and other administrative costs. For this analysis, the full cost of utilities is also included. Based on data from the Massachusetts Housing Partnership, total annual operating costs were calculated as \$10,000 per unit. Net rental income after deducting vacancy and operating costs is estimated at \$3.0 million.

Table 22. Summary of Financing Gap for Affordable Housing Rental Units in 2017 Dollars

			By Household Type		
			Very Low Income	Low Income	Moderate Income
All Units					
Potential Development Costs					
Number of Units		482	133	164	185
<i>Percent to Total</i>			27.6%	34.0%	38.4%
TDC per Unit		\$413,963	\$428,218	\$344,915	\$464,924
TDC per GSF		\$387	\$387	\$387	\$387
Total Gross Square Footage (GSF)		515,000	147,000	146,000	222,000
Total Development Costs (TDC)					
(Rounded)		\$199,530,000	\$56,953,000	\$56,566,000	\$86,011,000
Net Rental Income					
	Unit Factor	Amount	Amount	Amount	Amount
Gross Annual Rent		\$8,048,004	\$1,305,132	\$2,135,184	\$4,607,688
Less Vacancies ^{1/}	3% of Gross Rent	(\$241,440)	(\$39,154)	(\$64,056)	(\$138,231)
Less Total Operating Costs ^{2/}	\$10,000 per Unit	(\$4,820,000)	(\$1,330,000)	(\$1,640,000)	(\$1,850,000)
Net Operating Income (NOI)		\$2,986,564	\$0	\$431,128	\$2,619,457
Mortgage / Supportable Debt Calculation					
		Amount	Amount	Amount	Amount
Net Operating Income (NOI)		\$2,986,564	\$0	\$431,128	\$2,619,457
Debt Coverage Ratio ^{3/}		1.1	1.1	1.1	1.1
Available for Debt Service		\$2,715,058	\$0	\$391,935	\$2,381,325
Mortgage Constant ^{3/}		6.260%	6.260%	6.260%	6.260%
Permanent Mortgage / Supportable Debt (Rounded)		\$43,373,000	\$0	\$6,261,000	\$38,042,000
Supportable Equity Calculation					
		Amount	Amount	Amount	Amount
Required Return on Equity		8.0%	8.0%	8.0%	8.0%
Revenue Available for Return to Equity		\$271,506	\$0	\$39,193	\$238,132
Supportable Equity Investment (Rounded)		\$3,394,000	\$0	\$490,000	\$2,977,000
Financing Gap Calculation					
		Amount	Amount	Amount	Amount
Total Development Costs		\$199,530,000	\$56,953,000	\$56,566,000	\$86,011,000
Less Permanent Mortgage / Supportable Debt		(\$43,373,000)	\$0	(\$6,261,000)	(\$38,042,000)
Less Supportable Equity		(\$3,394,000)	\$0	(\$490,000)	(\$2,977,000)
Financing Gap (TDC-Mortgage-Equity)		\$152,763,000	\$56,953,000	\$49,815,000	\$44,992,000
<i>Financing Gap as a Percent of TDC</i>		76.6%	100.0%	88.1%	52.3%

1/ Source: City of Somerville staff input, informed by recent affordable housing project operating pro forma budgets.

2/ Source: Massachusetts Housing Partnership operating cost data for Boston Low Income Housing Tax Credit housing projects.

3/ Source: ConsultEcon calculation of mortgage constant based on an assumed 4.75% annual interest rate, based on current interest rates from the Massachusetts Housing Partnership.

Note: Rounding may affect totals.

Source: City of Somerville; Karl F. Seidman Consulting Services; and ConsultEcon, Inc.

Rental Affordability Gap & Required Financing Gap

The next step is to find the gap in project finance between the permanent mortgage and developer equity that the net rental income can support and the total development costs of the rental units. In general, the amount of loan that lenders will approve is based on the income stream from the project. In this case, the annual net income from rents is \$3.0 million. However, lenders prefer to build into their mortgage calculations a cushion between projected net income from rents and the annual debt service needed to pay down the loan. The debt coverage ratio (ratio of net income to allowable debt) reduces the effective amount of net income that can be used to support a mortgage. This analysis assumes a debt coverage ratio of 1.1, based on permanent financing programs offered by the Massachusetts Housing Partnership. After adjusting the net income by the debt coverage ratio, the project has \$2.7 million in annual net income with which to pay the debt service on a permanent mortgage.

The total allowable permanent loan is calculated by dividing the net income by the mortgage constant, based on a 6.260% mortgage constant, (assuming the available current Massachusetts Housing Partnership financing rates amortized over a 30 year period). The permanent loan that could be supported by the resident households is \$43.4 million. The annual revenue not required for the mortgage is then available to support equity investment. Based on a required return of 8.0%, this revenue would support \$3.4 million in equity investment. Given the total development costs of \$200.0 million, the financing gap required to create 482 new affordable rental housing units is \$152.8 million, approximately 77% of the total development cost (TDC). (It should be noted that 133 very low-income units do not produce sufficient annual rent to support costs of operating those units; hence, the financing gap is equivalent to the total development costs of producing very low-income units.)

Ownership Housing Development Project Revenue

The average sales price of affordable units sold in Somerville is the basis for estimating the sales proceeds available to support the creation of affordable ownership units in Somerville. As shown by analysis in Table 23, the “affordable” sales price is derived based on 30% of gross income spent on housing and estimates of housing costs, the same as rental housing. Housing costs for ownership units include mortgage payments based on assumed down payment on the home, private mortgage insurance, real estate taxes and condominium fees. It is assumed that very low-income units are all rental units, so estimates of sales prices based on very low- income earnings were not prepared.

Table 23. Aggregate Affordable Ownership Unit Sales by Household Income and Size of Unit in 2017 Dollars

Household Size	Annual Income ^{1/}	Monthly Housing Costs ^{2/}	Number of Households	Supportable Sales Price ^{3/}	Total Supportable Sales
Low Income					
One bedroom	\$41,507	\$1,038	13	\$202,018	\$2,626,234
Two bedrooms	\$44,091	\$1,102	5	\$209,602	\$1,048,010
Three bedrooms	\$71,923	\$1,798	1	\$341,946	\$341,946
Moderate Income Households					\$4,016,190
One bedroom	\$72,151	\$1,804	23	\$338,155	\$7,777,565
Two bedrooms	\$82,800	\$2,070	31	\$379,353	\$11,759,943
Three bedrooms	\$90,113	\$2,253	37	\$411,549	\$15,227,313
Total Households / Housing Units			110		\$34,764,821
Total Sales					\$38,781,011
Aggregate Sales by Income Level					
		Number of Units	Total Sales	Percent of Total	Average Supportable Sales Price
Low Income		19	\$4,016,190	10.4%	\$211,378
Moderate Income		91	\$34,764,821	89.6%	\$382,031
Total		110	\$38,781,011	100.0%	\$352,555

1/ See Appendix Table A-3.

2/ Assumed at 30% of monthly income. Rounded to nearest \$1.

3/ See sales price analysis in Appendix A-4. Rounded to nearest \$1.

Note: Rounding may affect totals.

Source: City of Somerville; Karl F. Seidman Consulting Services; and ConsultEcon, Inc.

Ownership Housing Required Financing Gap

The affordability gap in project financing of ownership units is the difference between the TDC and the proceeds from the sale of the estimated required 110 ownership units. Based on the mix of units and the assumed sales prices, the total estimated sales proceeds are \$38.8 million. Assuming TDC of \$48.5 million, the estimated financing gap for 110 affordable home ownership units is \$9.7 million, approximately 20% of the TDC. Data in Table 24 summarize the financing gap required for ownership units.

Table 24. Summary of Financing Gap Required for Affordable Ownership Housing, In 2017 Dollars

				By Household Type	
				Low Income	Moderate Income
				All Units	
Potential Development Costs					
Number of Units	110			19	91
<i>Percent to Total</i>				17.3%	82.7%
TDC per Unit	\$440,909			\$346,895	\$460,538
TDC per GSF	\$385			\$385	\$385
Total Gross Square Footage (GSF)	126,000			17,000	109,000
Total Development Costs (TDC) (Rounded)	\$48,500,000			\$6,591,000	\$41,909,000
Aggregate Unit Sales Proceeds					
	Units	Average Price	Sales Proceeds	Sales Proceeds	Sales Proceeds
Low Income	19	\$211,378	\$4,016,190	\$4,016,190	\$0
Moderate Income	91	\$382,031	\$34,764,821	\$0	\$34,764,821
Total Sales Proceeds (Rounded)	110	\$352,555	\$38,781,000	\$4,016,000	\$34,765,000
Financing Gap Calculation					
	Amount			Amount	Amount
Total Development Costs	\$48,500,000			\$6,591,000	\$41,909,000
Less Sales Proceeds	(\$38,781,000)			(\$4,016,000)	(\$34,765,000)
Financing Gap (TDC-Sales Proceeds)	\$9,719,000			\$2,575,000	\$7,144,000
<i>Financing Gap as a Percent of TDC</i>	20.0%			39.1%	17.0%

Note: Rounding may affect totals.

Source: City of Somerville; Karl F. Seidman Consulting Services; and ConsultEcon, Inc.

Required to Satisfy Ten-Year Affordable Housing Demand

The total development costs for rental and ownership units in Somerville that satisfy the demand for new affordable housing due to workers in new commercial developments is \$248.0 million. The total financing gap required for the rental and ownership units is \$162.5 million, approximately 66% of the TDC. The total financing gap is then divided by the total estimated commercial development building area that is non-exempt from the linkage fee, as shown by data in Table 25. Of the total 2.2 million square feet of commercial space an estimated 330,000 square feet is not exempt, 15% of the projected total, based on current policy and an average project size of 200,000 square feet. Therefore, the total financing gap required is estimated at \$86.43 per square foot of commercial development.

Table 25. Calculation of Financing Gap Required for New Affordable Rental and Ownership Units per Square Foot of Projected Commercial Development in 2017 Dollars

	All Units	Very Low Income		Moderate Income
			Low Income	
Total Development Cost	\$248,030,000	\$56,953,000	\$63,157,000	\$127,920,000
Total Financing Gap Required	\$162,482,000	\$56,953,000	\$52,390,000	\$52,136,000
Percent TDC that is the Financing Gap	65.5%	100.0%	83.0%	40.8%
Derivation of Commercial Square Footage Subject to Linkage Fee				
Total Commercial Square Footage	2,210,000	2,210,000	2,210,000	2,210,000
Square Footage Exempt from the Linkage Fee under Current Policy ^{1/}	330,000	330,000	330,000	330,000
Commercial Square Footage Subject to the Linkage Fee	1,880,000	1,880,000	1,880,000	1,880,000
Financing Gap per Square Foot of New Commercial Development ^{2/}	\$86.43	\$30.29	\$27.87	\$27.73

1/ Per the City of Somerville Linkage Policy, the first 30,000 SF of commercial building area is exempt from the linkage fee. It is assumed that commercial projects in the future average approximately 200,000 GSF, for a total of 11 projects. Across all projects, 330,000 SF is assumed to be exempt from the linkage fee, per the current ordinance.

2/ Total Financing Gap divided by the total commercial square footage Subject to the Linkage Fee.

Note: Rounding may affect totals.

Source: City of Somerville; Karl F. Seidman Consulting Services; and ConsultEcon, Inc.

Modified Financing Gap Required Based on Other Funding Sources

This analysis calculates the full cost of the financing gap due to the housing demand generated by workers of households in projected commercial developments in the City of Somerville. Somerville has relatively high affordable housing development costs, given the scarcity of vacant land, and high costs. The purpose of affordable housing is to limit the rental or mortgage payments of low-income households to 30% of income, which is considered “affordable”; this creates a limited revenue stream to finance development costs. Therefore, the City and developers are challenged to find additional sources of funding to fill the gap between the rents and sales proceeds that very-low, low, and moderate-income families can afford and the development financing that would be incurred by affordable housing developers. Since most affordable housing developers layer multiple funding sources to support the construction of new housing units, the linkage fee will work in conjunction with other financing sources to fill the \$162.5 million financing gap.

Linkage Fee Level Scenarios

Data in Table 26 show linkage fee level scenarios including scenarios that model various percentages of the full financing gap required, by applying the current housing linkage fee and the recent ratio of AHTF and total City funds to total funds needed to fill the full financing gap. Increasing AHTF's share of the required financing gap to leverage more state funds and counteract the decline in federal funds may be required in order to produce the level of affordable housing required to satisfy the new demand from commercial development. Funds from the Commonwealth of Massachusetts have been relatively stable, while federal funds have been declining over time. There is a new Federal Program, the National Housing Trust, which is funded from Fannie Mae and Freddie Mac profits that is targeted to very low-income households, but it does not represent a large fund -- all of Massachusetts received \$3 million in the most recent year. AHTF funding is an important component of the City's affordable housing production and has a substantial impact because the Commonwealth requires the City to provide matching funding as a way of investing in its own affordable housing projects. Without City generated sources like AHTF, the City would not have the primary sources of funding to leverage state funds effectively.

Table 26. Linkage fee Scenarios for the City of Somerville

	Linkage Fee Scenarios, Percent to Total / Full Financing Gap	Linkage Fee Amounts, per Square Foot
Total Financing Gap per Square Foot of Commercial Development for 592 Affordable Housing Units		\$86.43
<u>Illustrative Percentages of Financing Gap that would be Supported by Linkage Fees</u>		
Current Linkage Fee	6.0%	\$5.15
Current City AHTF Share of Existing Affordable Housing Funds to Fill the Financing Gap ^{1/}	22.8%	\$19.73
Current Total City Share of Existing Affordable Housing Funds to Fill the Financing Gap ^{1/}	31.7%	\$27.36
Full Financing Gap	100.0%	\$86.43

^{1/} The factors used in this analysis are based on eight 100% affordable housing projects recently funded partially by the City of Somerville. In these projects, the City's AHTF accounted for 22.8% of financing gap funds and total City sources accounted for 31.7% of financing gap funds.

Source: City of Somerville; Karl F. Seidman Consulting Services; and ConsultEcon, Inc.

New Development, Resident Employment and Jobs Linkage Fee

New development projects in Somerville will create new jobs with the potential to benefit Somerville residents, and especially improve employment and earnings for low-income residents. The job linkage fee is warranted to address specialized employment and training services that are needed to allow Somerville residents to gain access to employment opportunities and share in the benefits from new large scale development. Such services may be needed either if there is a lack of available Somerville workers with the specific occupational skills demanded by employers in new development or if workers have more general gaps in education, skills or experience that pose barriers to their employment. Occupational and job specific training services are warranted to address the first situation while basic education and job readiness programs address the latter need. Both services may be needed, and in many cases combined into an integrated skills training program, to ensure that Somerville's unemployed and low-income residents have equitable access to jobs created by new development.

A three-part methodology was used to analyze the need for employment and job training services to link Somerville residents to the jobs created by the expected new development. First, an analysis of the potential occupational supply gaps for jobs in projected development over the next ten years was completed. This analysis used the occupational composition of projected industries expected to occupy new projects to estimate the expected number of new jobs in different occupations. These data were then compared to the occupational composition of Somerville's workforce to identify occupations for which the supply of existing residents may be insufficient to meet this new demand. Information on the capacity of existing job training programs to supply new workers was then considered in estimating the occupational supply gap. Recent research and labor reports related to occupational supply gaps also were reviewed to provide further context and information on this aspect of needed workforce development services. Some studies focused on Massachusetts or the greater Somerville region but are still relevant since they address expected industries, occupations and labor force segments for Somerville. The second part of the analysis considers employment barriers faced by Somerville residents beyond occupational skills that can impact their access to employment across occupations, drawing on ACS data, interviews with workforce agencies and labor market reports. Finally, the analysis draws on the broader understanding of labor market trends, occupational supply needs, and the demand for education and training services gained from interviews with workforce development practitioners.

Labor Supply Gaps

Table 27 compares the expected number of jobs in major occupational categories to ACS data from 2011 to 2015 on the number of Somerville workers in these occupations. For three occupational groups, the number of new jobs is a very small share of the current workforce at less than 5%. Consequently, there is likely to be a good supply of Somerville residents within these occupations to address employer needs, although mismatches may exist based on unique employer needs or for occupations that are more specialized. In another five occupations, new employment in future large development projects falls between 5% and 10% of Somerville's workforce, which may make it more difficult to locate city residents for these jobs. Moreover,

47% of these jobs are in higher skill and high wage life, physical and social science, and legal occupations that are less likely to benefit low-income residents. For the remaining fourteen occupational groups, projected new jobs account for a large share of the current workforce, ranging from 10.4% (Art, Design and Media Occupations) to 48.8% (Computer and Math Occupations). Six of these occupational groups (Food Preparation and Serving Occupations, Health Care Support Occupations, Office and Administrative Support Occupations, Personal Care Occupations, Production Occupations, and Sales and Related Occupations) are sources of entry-level jobs for low-income and less educated workers and account for 45% of the jobs in these “tight demand” occupations. Although the remaining eight “tight demand” occupational groups are dominated by high skill jobs that require college or advanced degrees, some include technician and support occupations that are accessible with a two-year college degree or certificate program.

Table 27. Comparison of Expected Occupational Demand and Somerville Workforce by Major Occupational Groups

Occupational Group	Estimated New Jobs in Projected Development	Number of Somerville Residents in Occupation	New Jobs as Percentage of Somerville Workforce
Management Occupations	697	5,799	12.0%
Business and Financial Operations Occupations	730	3,370	21.7%
Computer and Mathematical Occupations	1,839	3,770	48.8%
Architecture and Engineering Occupations	413	2,004	20.6%
Life, Physical, and Social Science Occupations	249	2,595	9.6%
Community and Social Service Occupations	88	1,227	7.2%
Legal Occupations	33	621	5.3%
Education, Training, and Library Occupations	57	5,490	1.0%
Arts, Design, Entertainment, Sports, and Media Occupations	228	2,195	10.4%
Healthcare Practitioners and Technical Occupations	542	2,290	23.7%
Healthcare Support Occupations	260	667	39.0%
Protective Service Occupations	18	696	2.6%
Food Preparation and Serving Related Occupations	801	3,081	26.0%
Building, Grounds Cleaning and Maintenance Occupations	89	1,597	5.6%
Personal Care and Service Occupations	299	1,622	18.4%
Sales and Related Occupations	628	3,220	19.5%
Office and Administrative Support Occupations	1,497	4,729	31.7%
Farming, Fishing, and Forestry Occupations	3	15	20.0%
Construction and Extraction Occupations	37	1,349	2.7%
Installation, Maintenance, and Repair Occupations	74	642	11.5%
Production Occupations	178	1,018	17.5%
Transportation and Material Moving Occupations	144	1,541	9.3%
Total, All Occupations	8,904	49,538	18.0%

Source: Karl F. Seidman Consulting and American Community Survey 2011-2015 5- year estimates

Additional analysis was conducted on several mid-level jobs in occupational groups with “tight demand” that are more accessible to low-income and non-college educated workers. These include: computer support specialists and drafters, engineering, and mapping technicians. The results shown in Table 28 indicate demand for an additional 406 workers in these occupations. Although data on Somerville's workforce in these specific occupations were not available, it appears likely that demand is tight, given that the ratio of new jobs to the existing workforce for the broader category in which these jobs fall is 49% and 21%, respectively.

Table 28. Expected New Workforce Demand for Three Targeted Technology Related Occupations

Occupation	Projected New Jobs*
Computer support specialists	301
Drafters, engineering, and mapping technicians	105
Total	406

Source: Karl F. Seidman Consulting

*Based on 9 industries with demand for these occupations

Overall, Somerville has a tight labor market with strong employment growth and low unemployment rates. Somerville’s unemployment rate was 2.4% in April 2017, and it varied between 1.7% and 2.8% over the prior twelve months. Moreover, Somerville's unemployment has been low for several years, averaging 2.4% in 2016 and 3.2% in 2015. The *2015 Massachusetts Economic and Labor Market Review* characterized the Metro North labor market, in which Somerville is located, as extremely tight with an unemployment rate of 3.9% in 2015, a 4.9% wage growth rate and the number of job openings well above the number of unemployed workers looking for a job. Since 2015, Somerville's labor market has likely grown tighter as the economy has continued to grow and the number of unemployed workers declined by 16%¹⁹. These overall tight labor market conditions indicate that new and expanding employers in Somerville may have difficulty finding workers and face increased employee turnovers as workers have more opportunities for career advancement and are less concerned about the risk of job loss.

In analyzing Somerville's Jobs Linkage fee and policies, it is important to understand specific occupational and skills gaps and their relationship to projected employment demand from future development projects. A 2015 report by Northeastern University’s Dukakis Center²⁰ projected future occupation demand for Massachusetts and its Workforce Investment Areas and analyzed the capacity of the existing vocational education system to address this expected demand. This study found that the majority of job openings in Massachusetts through 2022 will not require a

¹⁹ Based on the number of unemployed Somerville workers in April 2017 and April 2015.

²⁰ *Meeting the Commonwealth’s Workforce Need: Occupation Projections and Vocational Education*, Northeastern University Kitty and Michael Dukakis Center for Urban and Regional Policy, October, 2015.

college degree and can be met through no more than a vocational education or associate's degree. The four occupational groups with the highest projected job openings are:

- Food Preparation and Serving Related Occupations;
- Office and Administrative Support Occupations;
- Sales and Related Occupations; and
- Healthcare Practitioners and Technical Occupations.

These four categories combine to account for 43% of the state's expected job openings between 2012 and 2022.

The report also found that the state's existing vocational education system only has the capacity to fill a small share of the projected job openings through 2020 in positions that do not require a college degree. Statewide, high school and community college programs can fill close to 15.7% of future jobs requiring a high school degree or less, 11% of job openings requiring some college; and 23% of job openings requiring an associate's degree. The gap in high school and community vocational education capacity is greater for the Metro North Workforce Investment Region. Based on the study's analysis of current graduation rates only 10.9% of future jobs requiring a high school degree or less, 5.2% of job openings requiring some college; and 11.3% of job openings requiring an associate's degree will be filled through the region's vocational high schools and community colleges. However, this capacity varies considerably across occupational groups, as shown in Table 29. Metro North high schools and community colleges have the highest capacity to meet expected job openings for Installation, Maintenance and Repair occupations, Architectural and Engineering occupations, Construction and Extraction occupations, and Arts, Design, Entertainment, Sports, and Media occupations, at 32.7%, 27.7%, 19.6%, 18.5% and 18.1%, respectively. In the Architecture/Engineering and Arts/Design/Media categories, capacity is especially strong for jobs requiring only a high school degree—supplying two-thirds to 86% of expected demand. Capacity to fill jobs requiring an associate's degree is also relatively strong, at close to two-thirds, for the Architectural and Engineering and one-third for Arts, Design, Entertainment, Sports, and Media occupations.

Based on the Northeastern Report, the vocational education supply capacity is especially low in the Metro North Workforce Investment Area for three occupational areas in which future development projects are expected to generate large numbers of new jobs:

- Food Preparation and Serving Related Occupations: 4.2% of expected job openings with an average annual wage of \$28,055²¹;
- Office and Administrative Support Occupations: 1.9% of expected job openings with an average annual wage of \$44,774; and
- Sales and Related Occupations: 1.0% of expected job openings with annual average wage of \$45,882.

²¹ Annual wage figures are from the May 2016 US Bureau of Labor Statistics Occupational Employment and Wage Statistics for the Metro North WIA.

These findings highlight the need for expanded investment in local and regional vocational and job training to prepare Somerville residents and workers for future jobs. Moreover, expanded training capacity appears particularly important to address the type of jobs that will arise from business and employment growth at the city's future development projects.

Table 29. Supply of Annual New Graduates from College and Vocational Education System, Metro North Workforce Investment Area

Occupational Group	Supply as Share of Openings by Educational Level				
	HS Graduate	Some College	Associate's Degree	BA	Total
Management Occupations	19.6%	5.0%	9.4%	3.2%	6.4%
Business and Financial Operations Occupations	22.5%	4.3%	5.6%	2.6%	2.4%
Computer and Mathematical Occupations	45.1%	8.8%	14.5%	5.1%	9.6%
Architecture and Engineering Occupations	86.4%	35.1%	62.6%	10.4%	27.7%
Life, Physical, and Social Science Occupations	25.6%	1.7%	9.1%	2.2%	4.3%
Community and Social Service Occupations	5.3%	2.3%	2.4%	1.1%	2.2%
Legal Occupations	6.8%	0.7%	2.1%	1.4%	1.9%
Education, Training, and Library Occupations	32.7%	8.4%	13.5%	8.6%	12.4%
Arts, Design, Entertainment, Sports, and Media Occupations	64.7%	14.0%	32.4%	9.4%	18.1%
Healthcare Practitioners and Technical Occupations	13.0%	4.4%	13.3%	4.1%	7.1%
Healthcare Support Occupations	11.6%	7.8%	11.1%	5.5%	9.5%
Protective Service Occupations	0.0%	0.0%	0.0%	0.0%	0.0%
Food Preparation and Serving Related Occupations	5.5%	2.9%	7.4%	1.9%	4.2%
Building and Grounds Cleaning and Maintenance Occupations	0.0%	0.0%	0.0%	0.0%	0.0%
Personal Care and Service Occupations	14.4%	5.5%	10.8%	2.6%	9.2%
Sales and Related Occupations	1.4%	0.5%	1.8%	1.0%	1.0%
Office and Administrative Support Occupations	2.2%	1.6%	3.0%	1.3%	1.9%
Construction and Extraction Occupations	19.6%	15.4%	30.4%	10.5%	18.5%
Installation, Maintenance, and Repair Occupations	36.8%	26.8%	41.9%	13.8%	32.7%
Production Occupations	17.7%	13.2%	23.7%	10.6%	16.6%
Transportation and Material Moving Occupations	1.8%	1.8%	2.2%	0.8%	1.7%
Total All Occupations	10.9%	5.2%	11.3%	3.8%	7.1%

Source: *Meeting the Commonwealth's Workforce Needs: Occupation Projections and Vocational Education*

Employment Barriers for Somerville Residents

Beyond the occupational labor imbalances discussed above, Somerville workers may not have access to jobs at new development projects due to more general barriers to employment, such as lack of English language skills, poor reading and math skills, low educational attainment, limited work experience, prior criminal record and other factors. Somerville has a well-educated and

experienced workforce, but there is a sizable portion of the city’s labor force that faces language and educational barriers to employment. Based on ACS 5-year estimates, 20.2% of workers in Somerville’s labor force have a high school level education or less (see Table 30). Educational barriers are especially high for unemployed workers, with 43% of them in the prime working age cohort lacking post-secondary education. This profile is confirmed by recent Somerville clients of the Career Place shown in Table 31: 72% of the job seekers from FY2014 to FY2016 attained education at or below a high school diploma. Additionally, almost 10% of Somerville workers reported that they speak English less than very well and thus, may face barriers to employment, obtaining a quality job or job advancement based on their English language skills.

Table 30. Educational Attainment for Somerville Workers and Residents, Age 25 to 64 Years

Education Level	Percent of Population (25 or older)	Percent of Labor Force (25 to 64)	Percent of Unemployed (25 to 64)
Less than high school graduate	7.9%	5.9%	6.0%
High school graduate	15.4%	14.3%	37.1%
Some college or associate’s degree	14.0%	13.3%	20.0%
Bachelor's degree or higher	62.7%	66.5%	36.9%

Source: American Community Survey, 2011 to 2015 Estimates

Table 31. Educational Attainment, Career Place Somerville Job Seekers FY 2014 to 2016

Education Level	Number	Percent
Less than high school graduate	455	51.9%
High school graduate or GED	178	20.3%
Some college/vocational degree	60	6.8%
Associate’s degree	20	2.3%
Bachelor's degree	86	9.8%
Graduate degree	30	3.4%
No information	48	6.3%
Total	877	100.8%*

Source: The Career Place; *Total is 100.8% due to rounding

Despite a well-established system of providers and education programs for adult basic education (ABE) and English for Speakers of Other Languages (ESOL)²², the supply of these services is insufficient to address the need and demand among Somerville residents. According to the Somerville Foundation report, *Breaking the Language Barrier: A Report on English Language Services in Greater Somerville*, there were 3,702 people on waiting lists among Metro North providers for ABE and ESOL services in December 2010, with 95% of these for ESOL. The

²² There are 25 ESOL providers in Somerville funded by the Office of New Somervilleans and listed on their web site. The Massachusetts Department of Elementary and Secondary Education ABE/ESOL directory lists 29 providers in Somerville.

Somerville Center for Adult Learning Experiences has 800 people on its waiting list for English Language Learning programs.

Among workforce development practitioners, a lack of English language skills was the most frequently cited employment barrier for Somerville workers. Other common barriers outside of occupational specific skills, as reported by practitioners, are job readiness including soft skills, job search skills and prior work experience, legal status as an undocumented worker, and health issues, including alcohol and drug use. Transportation, childcare and basic education skills in reading, writing, and math were mentioned less frequently by a quarter of interviewees. These barriers are consistent with those identified on a recent report in improving high rates of unemployment prepared by Governor Baker's Task Force on Economic Opportunity for Persons Facing Chronically High Rates of Unemployment²³ and a 2016 report by the Job Training Alliance²⁴. The Governor's Task Force report also noted limited knowledge of the job market, how benefit programs work, poor credit scores (used by employers in screening applicants), access to mentors, and employer bias and stigma as additional barriers.

Warranted Jobs Linkage Fee and Recommendations

Somerville's future commercial development will create demand for workers in several occupational areas that are accessible to low-income and moderate-income residents, but insufficient workforce training capacity and funding exists to address this demand. With the city's tight labor market and limited capacity of the existing job training system to address new demand, additional investment in job training will be necessary to fill this demand for workers. While there is an existing Somerville labor force in these occupational areas, demand in the occupations with the largest need for new workers is above 10% and as high as 48% of the city's current supply and thus is unlikely to be filled with Somerville's existing workforce. Since the goal of the Jobs Linkage policy is to expand opportunity for Somerville's low-income and moderate-income workers from new development, it is necessary to provide training and education to connect and prepare unemployed and under-employed workers for these new jobs rather than relying on existing employed residents to fill them. Moreover, barriers exist that will prevent many of the city's less educated and immigrant workforce from benefiting from these jobs. Finally and most importantly, the current workforce development services do not have sufficient funding and capacity to meet the increased demand for skills training and education needed to connect DIP employment to Somerville residents. For all these reasons, a jobs linkage fee is warranted to fund job training and workforce development services to address the potential occupational and skills gaps among Somerville residents to meet labor demand at the projected new development, particularly in occupations that can benefit low-income and lower skilled workers.

²³ *Report and Recommendations to Improve Employment Outcomes Among Populations Facing Chronically High Rates of Unemployment* January 2016, <http://www.mass.gov/lwd/docs/executive-office/eo-561-task-force-report508.pdf>.

²⁴ *Root Cause, Job Training Works, Pays and Saves: An Economic Impact Study on Outcomes of Job Training*, January 2016

To estimate and quantify this need, the analysis focused on those low-skill and middle-skill occupations that are most accessible to low-income and moderate-income residents, ESOL and ABE services that are important barriers to both skills training services and employment and career advancement training and services to help workers mover from entry-level to higher skilled and higher paying occupations. Table 32 summarizes the 10-year projected new employment for these occupations, which total 4,434 jobs. To estimate the cost of training services for these jobs, a goal of filling 30% of these positions with Somerville residents is used. This goal is based on the employment goals established for Assembly Square development. This target results in the need for training to support 1,330 jobs for low-income and moderate-income Somerville residents.

Table 32. Development Projects’ Estimated Ten-Year Job Growth in Low-Skill and Middle-Skill Occupations

Occupation Category or Position	Estimated New Jobs at Projected Development
Healthcare Support Occupations	260
Protective Service Occupations	18
Food Preparation and Serving Related Occupations	801
Building, Grounds Cleaning and Maintenance Occupations	89
Personal Care and Service Occupations	299
Sales and Related Occupations	628
Office and Administrative Support Occupations	1497
Farming, Fishing, and Forestry Occupations	3
Construction and Extraction Occupations	37
Installation, Maintenance, and Repair Occupations	74
Production Occupations	178
Transportation and Material Moving Occupations	144
Miscellaneous Computer Occupations, including Computer Support Specialists	301
Drafters, Engineering, and Mapping Technicians	105
Total	4,434
Total for Somerville residents at 30% of new jobs	1,330

Source: Karl F. Seidman Consulting Services

The estimated total cost to provide skills training to 1,330 residents is \$6.06 million based on an average per participant training cost of \$4,553 for the Individual Training Account (ITA) funded training programs used by Somerville residents in FY2015 through FY2017. A linkage of \$3.22 per square foot is needed to generate these funds using a base of 1,880,000 square feet of new development expected to pay a linkage fee over the next ten years²⁵.

Three adjustments are applied to this initial jobs linkage figure. First, since Somerville residents have access to existing occupational training provided by high school, college and non-profit training agencies, the linkage fee does not need to fund the full \$6.06 million cost. Consequently,

²⁵ This figure differs from the 2.21 million square feet used to project employment impacts due to the application of the current 30,000 square foot exemption assuming an average project size of 200,000 square feet.

the number of participants to be trained with linkage fee funds was adjusted for recent data on Somerville residents receiving occupational skills from four sources:

- Somerville High School vocational training programs;
- Bunker Hill Community College;
- Training provided through federally funded ITAs; and
- Additional training provided by area non-profit providers.

Primary data on vocational training completed by Somerville residents provided by training providers and the Metro North Regional Employment Board was used to estimate this job training resource. The resulting estimate of training capacity is 68 training program graduates per year, which can prepare 680 Somerville residents for the new jobs at future development projects. To account for the large decline in federal funds for ITA in the Metro North region (33% over the past three years), a range of ITA training slots was used; this range had the average number of ITAs over the past three years at the top level and 50% of this amount as the bottom level, assuming a continued decline in future years. Table 33 details the components of this estimate. Once this training capacity is deducted, the jobs linkage would need to fund training for 650 to 705 jobs at a cost of \$2,959,000 to \$3,164,00 which translates into a per square foot linkage fee of \$1.57 to \$1.68.

Table 33. Estimated Skills Training Capacity for Somerville Residents

Educational Program or Funding Source	Training Capacity
Somerville High School annual vocational training for targeted occupations ²⁶	8
Annual ITA funded skills training, Somerville residents	5.5 to 11
Additional training reported by Job Training Alliance members, Somerville residents	11
Bunker Hill Community College years ending 2015 and 2016 ²⁷	38
Net capacity, non-jobs linkage fee funded	63.5 to 68
Ten years capacity	635 to 680
Net positions to fund	650 to 705
Percentage of targeted jobs funded by the Jobs Linkage Fee	49% to 53%

Source: Karl F. Seidman Consulting Services

A second adjustment relates to workers' broader educational barriers to employment. As documented from US Census data, multiple reports and practitioner interviews, many of Somerville's unemployed and low-income workers lack English language proficiency, basic math skills and a high school diploma or equivalent. Since these basic competencies are needed for many occupational skills training programs, the sufficient supply of these services is a complement to the skills training program, as well as vital to securing ultimate employment for most occupations. Consequently, an additional jobs linkage amount is estimated to address the

²⁶ Somerville high school vocational training is based on graduates who do not go on to college for eight occupations relevant to projected industries in new development.

²⁷ BHCC figures based on number of Associate and Certificate graduates who were Somerville residents, reduced by the percent of all college graduates who transfer to four year colleges.

cost of providing ABE and ESOL education to prepare targeted Somerville residents for the projected new jobs at new commercial development projects.

Table 34. Ten-Year Estimate, ABE and ESOL Services for Targeted Jobs at Future Development Projects

Education Level	Percent of Unemployed Somerville Workers	Percent Not Speaking English Well Somerville Labor Force	Percent Needing ESOL Services	Low Estimate Need for ABE Services*	High Estimate Need for ABE Services+
Less than high school diploma	6.0%	16.7%	3.1%	6.0%	6.0%
High school diploma or equivalent	37.1%	10.4%	3.4%	0.0%	9.3%
Some college or associate's degree	20.0%	6.4%	1.7%	0.0%	0.0%
Bachelor's degree or higher	36.9%	5.1%	1.2%	0.0%	0.0%
Total percentage of workers			9.3%	6.0%	15.3%
ABE/ESOL slots to fund for DIP targeted jobs			124	246	354

*Includes only workers with less than a high school diploma; +Includes workers with less than a high school diploma and one quarter of workers with a high school diploma or equivalent.

The linkage fee amount for these education services was estimated based on American Community Survey estimates for the education level of unemployed Somerville residents and the estimated English language proficiency for Somerville residents at each education level (see Table 34). Unemployed workers were used for these estimates since they are a key client target for training programs, a key source of workers to fill new jobs, and provide a better proxy for the Somerville residents who are likely to receive training for jobs at future development projects than the overall Somerville labor force. Two estimates were made for ABE services: (1) a low estimate assumes that all workers with less than a high school education will need ABE services; and (2) a high estimate that includes 25% of workers with a high school diploma or equivalent. The high estimate is intended to address workers who, despite having a high school diploma, lack high school-level competencies. Based on these figures, 9.3% of workers for targeted jobs in new development projects will need ESOL services to improve their English proficiency and between 6% and 15.3% will need to complete an ABE program. When applied to the 1,330 new low-skill and middle-skill jobs targeted to Somerville residents, this translates into the need to provide ESOL education to 124 workers and ABE to between 246 and 354 workers. The

estimated cost per participant is \$2,472²⁸, which results in education costs of between \$914,640 and \$1,181,600. When applied to the projected linkage base of 1,880,000 square feet, the additional warranted linkage for ABE and ESOL services is \$.49 to \$.63 per square foot.

A final third adjustment was made to provide for training and other services to help residents in entry-level jobs gain additional skills to move up a career or occupation ladder into higher paying positions. These career advancement services will help residents move into higher paying jobs to provide a family-sustaining income. To estimate costs for career advancement services, the projected jobs from new development in four occupations categories with good career ladder opportunities was used.

- Healthcare Support;
- Office and Administrative Support;
- Miscellaneous Computer Occupations; and
- Drafters, engineering, and mapping technicians.

These four occupational categories account for 2,163 projected new jobs and applying the 30% Somerville resident employment target, the jobs linkage fee would need to fund career advance services for 649 workers. To estimate the cost for these services, the FY2016 average cost for incumbent worker training from the state’s Workforce Training Fund (\$1,088) was used as a proxy for existing worker skills training. Using this per employee, figure, another \$706,000 is needed to fund career advancement services.

After all three adjustments, the warranted jobs linkage fee per square foot ranges from \$2.44 to \$2.69 per square foot. Table 35 summarizes the components of the final warranted jobs linkage fee.

Table 35. Calculation of Warranted Jobs Linkage

Required Training/Education	Number of Training/Education Slots	Cost	Per SF Cost*
Skills training to prepare residents low and middle skill jobs	1,330	\$6,055,000	3.22
Less available vocational and nonprofit skills trainings	-635 to -680	-\$2,891,000 to -\$3,096,000	-1.54 to -1.65
Plus required ESOL services	124	\$307,000	+.16
Plus required ABE Services	246 to 354	\$608,000 to \$875,000	+ .32 to +.47
Plus career advancement services	649	\$706,000	+.38
Total		\$4,580,000 to \$5,052,000	\$2.44 to \$2.69

*Based on Project Linkage Fee Base of 1,880,000 square feet.

²⁸ This figure is based on a \$2,202 average FY2010 expenditure per participant for ESOL programs in Greater Somerville (*Breaking the Language Barrier*, p. 27) adjusted to 2017 dollars by the Greater Boston CPI for Urban Consumers.

Review of Policy Options and Other City Policies

This section reviews the legal justification for linkage fees, compares Somerville's current linkage fee policies to other Massachusetts cities and counties, considers several linkage fee policy options and assesses the impact of housing and jobs linkage fee rates on Somerville's competitiveness for attracting businesses and development.

Legal Basis for Linkage Fees

Linkage fees have been an established policy for local governments for over three decades, with the City of Boston's policy first enacted in 1983. An established body of law supports a municipality's right to require monetary or other contributions in connection with commercial and/or residential development. In recent years, there has been no significant change in the legal basis and justification for linkage fees. It is constitutional to condition a development permit upon such payments or contributions when a "reasonable relationship" can be demonstrated between the government's legitimate purpose and the required fee. In the case of Somerville's linkage fees, the provision of affordable housing for low- and moderate-income households and providing education and training to create and maintain jobs for Somerville residents constitute legitimate government purposes, as indicated by the authorizing state legislation.

Additionally, two Supreme Court cases set legal standards that: (1) a rational nexus must be established between the imposed exaction or mitigation fee and its stated purposes; and (2) the fee amount must be proportional to the development project's impact that is mitigated or addressed by the exaction. The Nollan and Dolan Supreme Court cases are the primary basis for justifying the linkage fees, and provide the impetus for communities to conduct nexus studies that establish the relationship between new development and employment and its impact on housing and job training needs. The U.S. Supreme Court decision in the Nollan case [Nollan v. California Coastal Commission, 483 US 825 (1987)] declared that there must be an essential nexus between the exaction or mitigation imposed on the party and a legitimate state interest. The U.S. Supreme Court decision in the Dolan case enshrined into law the proportionality test that mitigations required by municipalities must be roughly proportional to the impact that the proposed developments will create [Dolan v. City of Tigard, 512 US 687 (1994)]. Further, the Supreme Court clearly placed the burden of proof on the municipalities to prove, within reason, that the mitigation is in fact necessary.

The analysis in this study indicates that a clear nexus exists between new non-residential development and the need for new affordable housing and to ensure low- and moderate-income Somerville residents gain employment in the jobs created by this development. The analysis also identifies fee levels that are proportional to addressing and mitigating these development impacts.

Development Impact Exaction Policy Issues

As Somerville considers updating its Housing Linkage policies and setting parameters for the new Jobs Linkage Fee, it faces common policy issues that cities have addressed in different

ways. The core policy issues, beyond the critical question of the appropriate and warranted linkage fee rates, for linkage policies include:

1. **Applicable project type and size.** This policy defines the uses and scale of real estate development projects that are subject to linkage fees and what zoning status triggers linkage fee payments. Somerville currently applies its housing linkage fees to a very broad set of uses, exempting only residential, religious, city owned buildings and artist studio space with a project size threshold at 30,000 gross square feet. Furthermore, the city only applies the requirement to projects seeking a special permit, a special permit with site plan review or site plan approval.
2. **Fee variation by use.** Housing and job impacts vary by the type of use and business type since the density and wage levels vary considerably across uses and industries. Consequently, some cities and counties have linkage fee rates that vary by use. The benefit of tailoring rates more closely to impacts is offset by other aspects of this policy, including its added complexity, potential disincentives for certain uses and how to address a project's change in uses over time.
3. **Fee variation by location.** Some cities have varied their linkage fees by a project's location perhaps reflecting differences in the impacts and mitigation costs across city economic centers and neighborhoods. Since Somerville is a compact city without great variations in either housing costs or transportation access to jobs across neighborhoods, there is not a strong case for this type of geographic variation in linkage fees.
4. **Exemptions.** Somerville currently exempts the first 30,000 square feet of any project from linkage fee payments, which reduces the housing linkage fees paid by each project by \$154,500 under current rates.
5. **Linkage fee payment schedule.** Somerville allows housing linkage fee obligations to be paid over a five year period, which slows the receipt of funds needed to build affordable housing. This extended payment schedule might be shortened to pay linkage fees more quickly and accelerate the supply of needed housing subsidy funds.
6. **Linkage fee rate adjustment over time.** Current policy allows for adjusting the housing linkage fee every three years based on an analysis of the impact of new commercial development on the cost and supply of housing in Somerville. However, there is no provision for a rate increase based on an inflation index, such as the Consumer Price Index (CPI), as practiced in several other cities.

Review of Linkage Programs in Other Cities

Linkage fees²⁹ charged to commercial development for the purpose of funding affordable housing is a policy utilized in a number of communities around the United States. They are often found in communities with high housing costs where there is a demonstrated need for affordable

²⁹ Linkage fees policies have different names in different communities. Boston calls its linkage fees development exaction fees, and Cambridge a housing contribution. For the purposes of this analysis reviewing these policies across communities, linkage fees has been used throughout to maintain consistency of usage and terminology in order to improve readability.

housing. Numerous communities in California have enacted such policies, and they are also found in other states, such as Washington, Colorado, Florida, and New Jersey. Somerville is among the Massachusetts communities that have a linkage fee policy, along with the cities of Boston, Cambridge and Barnstable County. This section reviews linkage policies in Massachusetts cities and counties, as those most relevant to Somerville, to identify competitive issues and existing practices to inform potential changes to Somerville’s policies.

Linkage Fee Program and Policy Administration

All housing linkage fee programs operate in a similar manner. Commercial, mixed-use, or other types of developments over a certain number of square feet are subject to a fee assessed per square foot of new developed space over the threshold size for the development. Though the essence of the policy may be the same, programs differ in a variety of ways. Some governing bodies restrict the application of the linkage fee to the use type, such as office space or retail space, whereas others impose the linkage fee on all nonresidential development in their jurisdiction. Some policy programs allow developers to either directly build the required housing or to pay an exaction into an affordable housing trust over a set period of time. In some cases, the fee is divided into installments and paid at certain intervals over a period of several years, most frequently related to the issuance of the certificate of occupancy or building permit. Governments adjust the fee on a regular basis, most often relating to the Consumer Price Index (CPI) or a construction cost index, such as the Engineering News Record Construction Cost Index. It should be noted that adjustments based on these indices do not take into account changes in land values, which impact the costs of developing affordable housing. Major revisions to the fee structure are undertaken less frequently, requiring approval of the local legislative body and often a new nexus study. Many communities have maintained the original fee structures from when the fees were first enacted, adjusting only based on the index, largely due to the cost and complexity of re-evaluating and passing new linkage legislation. The following section reviews linkage programs in Massachusetts. Exaction/linkage fee rates and key policies for Boston and three comparison cities/counties are summarized in Table 37 on page 71.

City of Boston. Boston’s linkage fees and policies are defined under Article 80 of the city zoning code, which addresses development project review, in Section 80B-7. This policy requires housing and jobs exaction contributions for any real estate development that meets the definition of a “Development Impact Project” (DIP). Four characteristics establish a real estate project as a DIP subject to exactions: (1) the project cannot be built “as-of-right” and requires some forms of zoning relief; (2) the project has more than 100,000 square feet of new construction, additions to an existing building, or renovation of an existing building; (3) the project includes more than 100,000 square feet of gross floor area for proposed Development Impact Uses; and (4) is not wholly owned by a government agency. The definition of Development Impact Use (DIU) is very broad, covering 40 distinct uses and excluding residential, wholesale businesses, storage, industrial uses, and accessory parking garages. Housing Exactions and Job Exactions are paid on the gross square feet amount above 100,000 at current rates of \$8.34 and \$1.67 per square foot, respectively. Housing exactions can be paid either through cash Housing Contribution Grant or by building low-income or moderate-income

housing units with cost at least equal to the required Housing Contribution Grant but in practice all exactions have been paid with a cash grant. Grants are paid in seven equal annual installments beginning at the earlier of the Certificate of Occupancy date or 24 months after construction starts. All Housing Contribution Grant funds go to the Neighborhood Housing Trust, which awards the funds to finance affordable housing projects through a periodic RFP process. Job exaction obligations can be met through either payment of a cash grant (Job Contribution Grant) or creation of a job training program with a cost at least equal to the required Job Contribution Grant. In practice, almost all Job Exactions have been paid through the grant option. Grants are paid in two equal installments with the first payment due at building permit issuance and the second payment one year later. The Neighborhood Jobs Trust receives all Job Contribution Grant funds, and awards them through a RFP process to finance job training, education and employment programs. Housing and job exaction rates have been set by special state statutes and can be adjusted for inflation every three years by a vote of the Boston Planning and Development Agency (BPDA) Board of Directors³⁰.

City of Cambridge. The City of Cambridge’s commercial linkage fees (referred to as a Housing Contribution) in its Incentive Zoning Ordinance were first adopted in 1988. Developers can also opt to create affordable housing units, under the “Housing Creation” option, but this has not occurred in the past decade. The Incentive Zoning Ordinance applies to commercial development of more than 30,000 square feet of gross floor area devoted to one or more of the following uses: Hotel or Motel; Radio and Television Studio, College or University (with some exemptions), Noncommercial Research Facility, Healthcare Facility, Social Service Facility, Office and Laboratory Use, Retail and Consumer Service Establishment, Open Air or Drive In Retail, Light Industry, Wholesale Business, Storage, and Heavy Industry. The current housing contribution is \$13.50 per square foot over 2,500 square feet of the project authorized by the special permit granted with one-dollar increases occurring annually in September 2017 and September 2018. Consequently, the Cambridge fee is scheduled to reach \$15.50 per square foot in fall 2018. The fee does not vary by type of use or by size of development. The amount of the housing contribution is also subject to annual adjustment based on the CPI Housing Index for the Boston-Brockton-Nashua, MA-NH-ME-CT area. The current fee was recommended by a 2015 Nexus Study for the Incentive Zoning Ordinance and went into effect on September 28, 2015. The Housing Contribution is paid, as a lump sum payment, directly to the Managing Trustee of the Affordable Housing Trust (AHT) or its designee. The AHT Managing Trustee must certify to the Superintendent of Buildings that the payment requirements for the ordinance are met prior to issuance of the Certificate of Occupancy. There are no reported problems with the administration or collection of the fee.

Barnstable County. The Cape Cod Commission is a regional planning agency that acts as the regulatory authority for all development projects in Barnstable County. In 2005, the Commission carried out a nexus study to investigate the impact of regional development on low-

³⁰ The inflation adjustment for the Housing Exaction is calculated based on an equally weighted (50%/50%) average of the change in the Boston Metropolitan Area Consumer Price Index for all urban consumers and the change in the housing component of the Boston Metro Area Consumer Price Index (CPI). The Job Exaction is adjusted by the change in the Boston Metro Area CPI for urban wage earners.

income and moderate-income residents. The results of the study were incorporated into an affordable housing linkage fee policy as part of the 2009 Regional Policy Plan, which has since been amended under a number of county ordinances.

The linkage fee policy is triggered by all new land development of 30 acres or more, land development into 30 or more residential lots or 10 or more business, office or industrial lots, new building developments and expansions to existing developments over 10,000 square feet or 40,000 square feet of outdoor areas. These developments are called “Developments of Regional Impact” or “DRI,” which are regionally significant development projects that, due to their size, location, or character, impact more than one community. The 2009 plan puts forth a process for the appropriate review of these projects and includes appropriate affordable housing and other mitigation fees. The affordable housing fee varies depending on the type of development and its location. These categories were determined based on the number of lower-than-average-income jobs each industry or use creates. The fee also depends on whether the development is located in an area that is determined to be an “economic center.” The fee schedule was updated in November of 2014 and the new fee schedule went into effect on July 1, 2017. Table 36 summarizes the current linkage fee rates. Fees are adjusted on an annual basis based on the Consumer Price Index.

The fee schedule is subject to reductions and discounts of up to 50%, or 65% if the development is approved for a Hardship Exemption. Discounts include development in an economic center (15% reduction), redevelopment projects (15% reduction), non-profit organization development (10% reduction), and reservation of land for estate or conservation purposes (10%).

Fees accrued under the DRI mitigation policy are collected in advance of the issuance of a Certificate of Compliance, which states that the development complies with the DRI policy. Only upon receipt of the Certificate of Compliance can the developer receive the Certificate of Use and Occupancy by the Municipal Agency. The fees are collected by the Cape Cod Commission, which holds the funds until the town manager of the town where the development took place requests them for affordable housing projects. Instead of paying the fee, developers can mitigate the affordable housing impacts by developing 10 % of the housing units determined necessary to support the lower-than-average-income jobs that are projected to be created by the new development; for example, if a development is projected to create 20 new jobs, then the developer could build 2 low-income housing units instead of paying the mitigation fee.

Table 36. Mitigation Fees for Developments of Regional Impact, July 1, 2017

Type of Development	DRI Mitigation Application Fee
Residential	\$10,975 base fee, plus \$329 per lot or unit
Non-Residential Building	Fifty-five (55) cents per square foot of gross floor area
Non-Residential Outdoor Space (such as swimming pools and tennis courts)	Fifty-five (55) cents per square foot
Wind Energy Conversion Facilities (WECF)	1-3 WECF: output of 250kW up to less than 1MW each: \$3,293 1-3 WECF with an output of 1MW or greater each: \$9,878 Per WECF over 3: \$3,293 per WECF Not eligible for Fee Reductions
Other Non-Residential Developments	\$10,975 base fee plus:
Divisions of Land:	\$329 per lot
Gravel Pits, Mining and Extraction Activities and Golf Courses	\$329 per acre
Wireless Communication Towers:	\$55 per linear foot of tower/monopole height above ground level
Water Dependent Uses including but not limited to docks, piers and revetments:	Twenty-seven (27) cents per square foot
Utilities and other linear development:	Fifty-four (54) cents per linear Foot
Mixed-Use Projects	The applicable residential and non-residential per lot/unit/foot fee set forth above. The residential base fee is not applied to Mixed-Use Projects
Historic Properties	Single-family or Accessory Building - \$441 Other - \$2,745
Other	For other types of land uses not covered above, \$10,975 base fee plus (to be determined as needed, based upon similar uses in the fee schedule above).

Source: Cape Cod Commission.

**Table 37. Key Housing and Jobs Exaction/Linkage Policies
in Somerville and Comparison Cities**

City	Exaction/Linkage Fee Rate (per square foot)	Project Size Threshold (square feet)	Exemption (square feet)	Payment Schedule	Rate Adjustments
Boston	Housing: \$8.34 PSF Jobs: \$1.76 PSF	100,000	100,000	Housing: seven payments, at certificate of occupancy (COO) and 6 anniversary dates Jobs: two payments at COO date and one-year anniversary	No sooner than three years based on a mix of CPI for Urban Consumers and CPI Housing Component
Cambridge	Housing: \$13.50 PSF + \$1 annual increase through 2018	30,000	2,500	One payment at COO	Recalculation after three years or longer
Somerville	Housing: \$5.15 PSF	30,000	30,000	Five payments at COO and next four anniversary dates	Reevaluation every three years
Barnstable County	Housing: varies by use: .55 per sq. foot for non-residential	10,000 for buildings, 50,000 for outdoor space	None	One payment prior to Certificate of Compliance	Annual CPI adjustments

Source: Karl F. Seidman Consulting Services

Somerville Policies in Relation to Other Communities

Although there are similarities in the core linkage policy across cities, several aspects of Somerville’s policies emerge from the review of policies in other cities:

- Somerville’s project threshold is the middle range, higher than Barnstable County, the same as Cambridge and well below Boston’s 100,000 square feet;
- Somerville’s exemption of 30,000 square feet is much higher than Cambridge at 2,500 but similar in policy to Boston, for which the project threshold and exemption levels are the same;
- Boston and Somerville are the only cities that use multiyear payments, with Somerville’s five-year payment period shorter than the seven years for Boston;
- Somerville is unique in not providing for any inflation adjustments to fees, with Cambridge and Barnstable County having provisions for annual inflation adjustments to their exactions and Boston providing for a three- year adjustment period.

- Somerville is consistent with Boston and Cambridge in not varying fees by project use. Barnstable County has a more complex system that varies its fee by use.

Policy Options for Somerville Linkage Policies

This section reviews several policies and administrative aspects of Somerville’s linkage fee policy that inform recommendation for potential policy changes. This discussion focuses on five issues:

1. Project threshold and exemption level;
2. Fee variation by use;
3. Number and timing of fee payments;
4. Periodic adjustment of fee level; and
5. Use of jobs linkage fee revenue.

Project Size Threshold and Space Exemptions

As noted above, Somerville’s project threshold is the same as Cambridge and well below the 100,000 square foot threshold in Boston. The current threshold is appropriate for Somerville as recent development has involved a mix of both mid-size and large projects; an equal number of projects between 30,000 and 100,000 square feet and over 10,000 square feet were permitted since 2009. While there were many smaller projects of less than 30,000 square feet permitted since 2009, most of these were residential without retail, office or hotel space. Non-residential space in these 113 projects under 30,000 square feet totaled 154,000 square feet. Consequently, lowering or reducing the project threshold is unlikely to provide much revenue to mitigate housing and employment impacts.

Somerville currently exempts the first 30,000 square feet of a project from housing linkage payments. This does not serve to exempt small projects from fees since the 30,000 square foot threshold achieves this purpose. However, this provision reduces linkage fee revenue at the established rate and adds a slight complexity to the policy and its administration. It also contributes to a higher nominal rate since applying this large exemption requires setting a higher fee level to generate the specified level of revenue needed to mitigate the development impacts. However, removing the exemption would increase the linkage fee burden on small to mid-size developments between 30,000 and 60,000 square feet. With the exemption, these projects now pay linkage fees on less than half of their developed square feet, but removing the exemption would require them to pay fees on the entire square footage.

Development Use and Fee Levels

The impact of new development on the demand for affordable housing and need for education and training services does vary by building use and business type. Uses and businesses with a higher density of employment and a large share of lower paying jobs will generate greater

impacts. Table 38 compares different uses by their employment density (measured by typical square feet per employee) and share of jobs with average annual wages below 80% of area median income. Restaurants have both the highest employment density and share of lower paying jobs. Research and Development is on the other end of the spectrum with low density and a relatively low share of jobs with wages below 80% of median income. Office uses fall in the middle—they have high job density but a middle range of low paying jobs. Hotels and retail uses, on the other hand, have a large share of lower paying jobs but relatively low employment density. Thus, based on impact alone, there is a case for varying fees by use. Somerville could establish a multi-tiered fee schedule with different rates for hospitals, hotels, office, retail/personal services, restaurants and universities.

Table 38. Variation in Employment Density and Job Wage Levels by Use

Development Use	Square Feet Per Employee	Percent of Jobs with Median Wages Below 80% of Median Income
Office	200	17% to 53%
Hotel	1,000	90%
Retail	500	44% to 95%
Restaurant	225	98%
Research and Development	440	16%

Source: Somerville OSPCD and Karl F. Seidman Consulting Services from BLS Data

There is a precedent for varying fees by type of use. Many California cities, including San Diego and San Francisco do so, as does Barnstable County in Massachusetts, which has varied fee rates for eleven different use categories. Locally, Boston, Cambridge and Somerville all use a uniform rate for all uses.

Despite the differential impacts by use, Somerville may want to continue its policy of a single fee rate across uses for administrative simplicity and competitive factors. From an administrative perspective, the occupancy use of a project may be difficult to determine for some projects and may change over time for a building. The first problem is most likely to occur for office buildings that combine general office uses with research and development, medical services or educational uses, or have large portions of a building devoted to mixed activities, as is becoming more common with collaborative and open floor space designs. There would be an incentive for owners and developers to classify mixed space as the use with a lower fee, or underestimate office space if differential contribution rates were applied. Additional administrative complexities might result from the need to allocate common areas and shared uses (e.g., reception areas, conference rooms, etc.) among different uses. Furthermore, developers and building owners might view the fees as unjustified and seek a refund or legal relief if the allocation of uses changed upon final occupancy. These problems can be addressed by having the contribution rate based on the predominant use in the building. However, this would mitigate the goal of having the fee rate reflect differential impacts.

Another issue is that building uses often change over time: ground floor space may first be rented to a retail store and later converted to a restaurant. Similarly, a building might first have an office tenant and later be converted to an institutional or research and development use.

Somerville could address this issue by basing linkage fee rates on the initial use but this could create inequitable results between buildings with stable uses and those for which uses change more often. This problem seems greatest for buildings with a larger share of ground floor commercial space which may change more frequently between retail, restaurant and office uses.

Timing of Fee Payments

Somerville, with a five-year payment period, has a relatively long time period for collecting housing linkage fees, exceeded only by Boston, at seven years. This extended payment period slows the receipt of funds and the ability to deploy them to build affordable housing and expand training services. It also adds administrative costs and complexity as the city must track, invoice, and collect payments from each project over five years. Since the affordable housing impacts from new development are likely to occur in the first year or two after project completion as the project is leased up and tenants hire new employees, the five-year payment period is not well aligned with project impacts. A single payment or shorter payment period would supply funding to build housing and implement training programs at a pace that better matches impact while simplifying fee administration and collection.

For the new jobs linkage fee, it is important to collect fees early in the development process to allow the funding and implementation of education and training programs to train residents before the project is occupied and tenants begin hiring workers. Consequently, the jobs linkage fee is appropriate to collect in a single payment at the time of building permit issuance.

Fee Adjustments

Somerville's linkage ordinance has a provision to periodically recalculate linkage fees every three years to adjust for changing market and economic conditions but does not provide for inflation-based adjustments, as is common for other communities. Somerville's policy of periodic analytically-based linkage fee adjustments is good practice to keep linkage fees current. Moreover, Somerville has been more consistent than Cambridge and Boston in undertaking these periodic updates. However, it has proven difficult to complete nexus studies and updates within this three-year time frame, with updates more likely to occur within a five- to ten-year period. Given this situation, Somerville may want to amend its ordinance to allow regular annual or biennial adjustments linked to an inflation index such as the CPI or a building cost index.

Use of Jobs Linkage Fees

With implementation of a new jobs linkage fee, policies are needed to guide the deployment of linkage revenue collected and paid into the Job Creation and Retention Trust. Somerville faces two broad options for use of job linkage funds:

1. **Project-specific training** in which linkage fees collected from a project are used to train residents for jobs with employers at that specific project; and

2. **Citywide programs** in which linkage fees collected from multiple projects are pooled and then awarded to providers to provide training for jobs with employers throughout Somerville.

The first option has several advantages. First, there is a stronger connection between the fees collected and impacts generated by the project than with the citywide training approach. Second, the availability of training dollars could be an incentive that helps Somerville and the project developer attract businesses to a new project. Third, this approach fosters relationships between the city and new employers around resident hiring, training and career ladder development that may be leveraged for future programs and benefits.

Several challenges exist to effectively implement this option. The city's working relationship for the project is with the developer but the cooperation and engagement of employers is needed to establish a new training program. This places a burden on the city to establish these relationships and a willingness of developers to initially broker this process. Additionally, employers must need to hire a sufficient number of people for the same or very similar position for a program specific to the project to be feasible. Finally, the single project linkage fee revenue needs to be large enough to cover the full costs to implement the training program and related services. These last two conditions are more likely to exist for larger projects and those with expanding employers that are adding many employees.

While the second option does not directly connect with and leverage the employment and training opportunities presented by specific projects, it is easier to implement because it draws hiring and occupational training needs among employers across Somerville. It can pool linkage revenue across projects to fund larger scale or more integrated programs and pool demand across employers to achieve economies of scale for programs. Finally, it allows for competitive awarding of funds across different occupations and program designs, and thus may allow Somerville to target funds to programs that are most likely to offer the best employment outcomes for residents.

Linkage Fee Impact on Somerville's Competitiveness

An important consideration for Somerville in establishing the housing and jobs linkage fee rates is their potential impact on attracting new development and tenants. This is a particularly important concern given that maximum combined fee rate of \$89.12 per square foot (\$86.43 for housing and \$2.69 for jobs) would be seventeen times the current housing fee of \$5.15. If adopted, this rate would be more than six times the current housing contribution rate in Cambridge (\$13.5) and almost nine times Boston's combined housing and jobs exactions of \$10.01. An increase in the fee rate increases development costs, which developers must offset through either paying less for land (or an existing building in the case of renovation projects), reducing their return on investment, or collecting higher rents from tenants. The last option, raising rents, may affect Somerville's competitiveness in attracting businesses to new development projects.

Table 39 compares Class A office rents for Somerville with competing areas in Cambridge, Boston and several suburban locations, including those with sizeable professional service and technology companies, such as Lexington and Waltham. A developer’s capacity to pass on the cost of fees to tenants and still remain economically competitive in attracting tenants depends on rent differentials between Somerville and competing locations. Somerville’s office rents are well below Boston’s major office markets (Financial District, Back Bay and the Seaport District) and the mid-Cambridge and East Cambridge markets, but close to or above competing suburban locations. Somerville’s average rent for recently developed buildings is \$40.50, \$18 below Boston’s financial district and \$35 below East Cambridge. With the exception of Lexington, Somerville Class A rents in newer buildings are above those in competing suburban locations, by \$8.32 for Waltham and \$22.50 for Quincy. For the inner suburban market, which includes many communities closest to Somerville, including Chelsea, Malden, Medford and Revere, average asking rents were \$33.00 in the First Quarter of 2017, or \$7.50 below Somerville office rents.

**Table 39. Class A Office Rents
in Somerville, Boston, Cambridge and Selected Suburbs**

Market Area	Office Rent	Differential
Somerville	\$40.50	
Lexington	\$56.00	\$15.50
Quincy	\$18.00	-\$22.50
Waltham	\$32.18	-\$8.32
Boston Inner Suburbs	\$33.00	-\$7.50
East Cambridge-Kendall	\$75.47	\$34.97
Cambridge-Mid	\$67.96	\$27.46
Cambridge-West/Alewife	\$47.75	\$7.25
Boston-Seaport	\$69.08	\$28.58
Boston-Financial District	\$58.87	\$18.37
Boston-Back Bay	\$64.76	\$24.26
Charlestown-East Boston	\$41.32	\$0.82

Source: Somerville, Lexington, Quincy, and Waltham from Costar data for buildings built within last 5 years; other areas from Lincoln Property Office Report 1st Quarter 2017, Class A asking rents.

The maximum combined housing and jobs linkage fee, based on the city covering 100% of the financing gap is \$89.12 per square foot of new development—an \$83.97 increase over the current rate. If a developer passed on this increase in full to tenants, rents would increase by \$8.40 per square foot for a ten-year lease³¹—a 21% increase in Somerville’s Class A office rent (see Table 40). This would leave rent differentials of almost \$10 with Boston’s Financial District and over \$26 with Kendall Square, but erase the city’s advantage over the Alewife section of Cambridge and make Somerville less competitive with suburban locations by more than doubling its rent premium over Waltham and inner suburbs.

³¹ This calculation is based on the current 30,000 square foot exemption, 85% net leasable space and a building size of 200,000 gross square feet.

Table 40. Potential Impact of Maximum Fee on Boston Class A Office Rents

Maximum Housing Fee	\$86.43
Maximum Jobs Fee	\$2.69
Total Combined Fee	\$89.12
Existing Linkage Fee	\$5.15
Increase in Fee	\$83.97
Cost per Leased Square Foot	\$83.97
Amortized over Ten Year Lease	\$8.40
Amortized Fee as Percent of Class A Rent	20.7%

Source: Karl F. Seidman Consulting Services

Developers are constrained in their ability to pass on the cost of additional fees to tenants by competition from outside Somerville and existing Somerville buildings that are not subject to linkage fees. If developers are unable to pass on the fee to tenants or reduce their property acquisition costs, linkage fees will increase their required equity investment and reduce their rate of return. A large negative impact on investment returns creates a risk that developers may decide to pursue projects in more profitable locations or impair their ability to raise equity capital, making new development projects infeasible. Table 41 presents the estimated impact on a developer's return on equity assuming "worst case" in which the full cost of the additional fees are paid by an increase in the developer's cash equity under scenarios in which the developer would earn a 6% and 8% return prior to the fee increase. With the maximum fee increase of \$83.97 per square foot, a developer's annual return on investment from the building's net income would decrease from 8% to 4.72% or from 6% to 3.54%. These represent a 41% decline in expected investment returns, which indicates that if the maximum fee was adopted and most of the increase had to be paid with developer equity, it is likely to deter new investment in Somerville's office development.

Table 41. Potential Impact of Maximum Fee on Developer Investment Return

Investment Parameter	8% Investment Return	6% Investment Return
Original Equity Investment*	\$20,500,000	\$20,500,000
Additional Fees at \$83.97 PSF	\$14,274,900	\$14,274,900
New Equity Total	\$34,774,900	\$34,774,900
Investment Income+	\$1,640,000	\$1,230,000
New Return on Investment	4.72%	3.54%
Change in Investment Return	-3.28	-2.46
Percent Change in Returns	-41%	-41%

Source: Karl F. Seidman Consulting Services

*25% of Estimated TDC of \$82 million; +8% or 6% of original equity investment

Impact of Alternative Fee Scenarios on Rents and Returns

Since adoption of the maximum warranted linkage fees is likely to impair Somerville's competitive position for attracting new businesses and real estate investment, the impact of two alternative fee scenarios was analyzed. This analysis also considered the combined impact of

linkage fees and \$7.74 per square foot in other impact fees that Somerville has or is considering adopting³². The two scenarios analyzed are:

1. Scenario One: setting the housing linkage fee at \$19.73 (equal to AHTF’s recent share of the financing gap) and jobs linkage fee at \$2.44.
2. Scenario Two: setting the housing linkage fee at \$8.50 and jobs linkage fee at \$2.50 so that Somerville linkage fees are in a comparable range to Boston (\$10.01) and Cambridge (\$13.50).

The results of this analysis are presented in Table 42. If the full increase in linkage and other fees are passed on to tenants via increased rents, the impact would be modest: rents would increase by \$2.48 under Scenario One and \$1.36 under Scenario Two based on a ten-year lease. These relatively small rent increases are unlikely to be a deciding factor for tenants and alter Somerville’s competitive position relative to Boston, Cambridge and suburban communities.

In terms of investment returns, the impact is more significant, especially under Scenario One. Developer returns could drop by 102 to 136 basis points under Scenario One, if the full fee costs are paid with additional developer equity. Under Scenario Two, the impact is smaller ranging from 61 to 81 basis points. These are not so large as to make Somerville uncompetitive for real estate investment, especially since developers are likely to be able to offset at least part of the increased fee cost in other ways. However, since Somerville is still an emerging office real estate market and is competing with more established and higher rent markets in Boston, Cambridge and the strongest suburbs, developers and investors may perceive it as a higher risk location for investment. Consequently, Somerville should be careful not to set an overall level of fees that developers view as too burdensome and change the perceived risk/return balance, particularly relative to Cambridge and Boston.

Table 42. Potential Impact on Class A Office Rents and Developer Returns Under Alternative Linkage Fee Scenarios

Fee Component/Impact	Scenario One	Scenario Two
Combined Fee Cost per Leased SF	\$29.91	\$18.74
Increase from Current Linkage Fee	\$24.76	\$13.59
Impact on Rent Amortized over 10-Year Lease	\$2.48	\$1.36
Amortized fee as % of Somerville Rent	6.11%	3.36%
Impact on Developer Returns: 6% Base	-1.02%	-.81%
Impact on Developer Returns: 8% Base	-1.36%	-.61%

Source: Karl F. Seidman Consulting Services

³² These include \$2.40 for funding the Green Line extension, \$2.00 for Union Square infrastructure, \$1.60 for community benefits, and \$1.74 to address storm water impacts.

Recommended Linkage Fee Rates and Policy Changes

The analysis detailed in this report supports an increase in Somerville’s housing linkage fee and establishes the nexus and warranted fee level for the newly authorized jobs linkage fee. Projected construction of 2.21 million square feet in non-residential development over the next ten years is expected to generate 8,899 jobs. This employment growth will create demand for 591 new units of housing for very-low, low-income, and moderate-income households; and expanded workforce education and training services to serve 1,330 residents. An estimated financing gap of \$162.5 million will exist to reach the \$248 million in total development costs necessary to build the new affordable housing units. For workforce development services, a smaller funding gap of \$4.58 to \$5.05 million is needed to address development impacts. The maximum warranted housing and jobs linkage fees to fill these financing gaps are \$86.43 per square foot and \$2.44 to \$2.69 per square foot, respectively.

Setting the final linkage fee rates is a matter of balancing public policy goals and considering both the need to address increased demand for affordable housing and workforce development services with the potential impacts of an increased rate on the city’s future development. Given Somerville’s goal to expand its employment base to create 30,000 new jobs and its emerging status as a location for Class A office and research space, it is important for Somerville to set linkage fees that are comparable to Boston and Cambridge rates. This rate level sustains Somerville’s rent advantage over these key competitor cities, keeps its rents in line with major suburban alternatives and avoids developers perceiving Somerville as being less supportive of new investment as the result of establishing linkage fee rates above its neighboring cities.

A combined jobs and housing linkage fee in the range of \$10.00 to 12.50 is recommended, placing Somerville at or slightly above Boston and below Cambridge, with the housing linkage fee between \$8.00 and \$10.00 per square foot and the jobs linkage fee between \$2.00 and \$2.50 per square foot. By adopting a rate in the \$10.00 to \$12.50 range (without, as noted below, an exemption for the first 30,000 square feet), Somerville will lessen the potential for adverse impacts on the city’s commercial rents and competitiveness in attracting and retaining businesses and continued investment. As discussed in the prior section, if increased linkage fees of \$11 per square foot in combination with other new exactions are fully passed on to tenants, it will increase annual rents by \$1.36, or a 3.3% increase over the city’s Class A office rents for newer buildings. Alternatively, if the additional exaction costs are fully absorbed by developers without increasing rents, its impact on investment returns would be limited, reducing them by .61 to .81 percentage points.

Table 43. Recommended Housing and Jobs Linkage Fee Rates

Fee Type	With 30,000 SF Exemption	Without 30,000 SF Exemption
Jobs Fee Rate	\$2.00 to \$2.50	\$1.70 to \$2.13
Housing Fee Rate	\$8.00 to \$10.00	\$6.81 to \$7.23
Combined Rate	\$10.00 to \$12.50	\$8.51 to \$9.36

Source: Karl F. Seidman Consulting Services

It is recommended that a two-stage approach regarding the usage of the jobs linkage fees be implemented. Under this approach, in the first stage, the jobs linkage fees collected from a project would be reserved to implement job training and education services linked to employers and jobs at the project. City planning and economic development staff would then meet with the project developer and confirmed tenant firms to discuss hiring plans and training needs and the potential to provide education and training for Somerville residents specific to the firms and project. Based on these meetings and discussions and consultation with potential training providers, a decision would be made on whether it is feasible to implement a training program specific to the project. If project-specific training was deemed feasible, Somerville economic development staff would convene meetings between the employer(s) and training and education providers on the implementation of the project-specific training, including specific dates and milestones to ensure implementation progress. When project-specific training is deemed infeasible, the second stage approach to jobs linkage revenue would apply and fees would be paid into a general fund of the Municipal Job Creation and Retention Trust to be awarded through a competitive RFP process for citywide training programs. In the event that project-specific training programs incurred hurdles and could not be implemented, the reserved linkage fees for the project would be released and transferred into the Trust's general fund. Given the time needed to manage the RFP and funding process, implement new training programs and monitor and evaluate employment outcomes, competitive RFPs by the Municipal Job Creation and Retention Trust are likely to be conducted every two to four years. For project-specific and general fund training programs, the Trust should encourage and give priority to programs with the following practices:

- Integration of ABE and ESOL services with training for entry level jobs and programs serving residents with these educational needs;
- Post-employment follow-up and support services to increase residents' successful transition to and retention at their new job; and
- Career advancement and job ladder services when feasible, given the opportunities within the occupation, industry and Somerville employers.

Several additional changes to the current linkage policies are recommended to simplify fee policies and their administration and accelerate collection and deployment of fee revenue:

- Shorten the housing linkage fee payment schedule to three payments made on the building certificate of occupancy (C of O) date; one year after C of O and two years after C of O;
- Use of a single payment at the building permit date for the jobs linkage fee to provide upfront payment needed to fund job training in advance of building occupancy and employment;
- Consolidate the payment schedule for each annual payment after C of O to January 15 (for initial C of O between January 1 and June 30) and July 15 (for initial C of O between July 1 and December 31) to simplify book keeping and administration of fee collection;

- Continue the current policy of reevaluating and updating linkage fees based on a nexus analysis every five years; and
- Establish an annual inflation rate adjustment based on the Boston CPI or alternative index.

Appendix A: Definitions of Economic Sectors

Construction sector comprises establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems). Establishments primarily engaged in the preparation of sites for new construction and establishments primarily engaged in subdividing land for sale as building sites also are included in this sector.

Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The assembling of component parts of manufactured products is considered manufacturing, except in cases where the activity is appropriately classified in Sector 23, Construction.

Utilities sector comprises establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal. Within this sector, the specific activities associated with the utility services provided vary by utility: electric power includes generation, transmission, and distribution; natural gas includes distribution; steam supply includes provision and/or distribution; water supply includes treatment and distribution; and sewage removal includes collection, treatment, and disposal of waste through sewer systems and sewage treatment facilities.

Wholesale Trade sector The Wholesale Trade sector comprises establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The merchandise described in this sector includes the outputs of agriculture, mining, manufacturing, and certain information industries, such as publishing.

Retail Trade sector comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The retailing process is the final step in the distribution of merchandise; retailers are, therefore, organized to sell merchandise in small quantities to the general public. This sector comprises two main types of retailers: store and nonstore retailers.

Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. The type of equipment depends on the mode of transportation. The modes of transportation are air, rail, water, road, and pipeline.

The Utilities, Wholesale Trade, Retail Trade, and Transportation and Warehousing were combined and presented as Trade, Transportation and Utilities in the study report.

Information sector comprises establishments engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data. The main components of this sector are the publishing industries, including software publishing, and both traditional publishing and publishing exclusively on the Internet; the motion picture and sound recording industries; the broadcasting industries, including traditional broadcasting and broadcasting exclusively over the Internet; the telecommunications industries; and Web search portals, data processing industries, and the information services industries.

Financial and Insurance sector comprises establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions. Three principal types of activities are identified:

1. Raising funds by taking deposits and/or issuing securities and, in the process, incurring liabilities. Establishments engaged in this activity use raised funds to acquire financial assets by making loans and/or purchasing securities. Putting themselves at risk, they channel funds from lenders to borrowers and transform or repackage the funds with respect to maturity, scale, and risk. This activity is known as financial intermediation.
2. Pooling of risk by underwriting insurance and annuities. Establishments engaged in this activity collect fees, insurance premiums, or annuity considerations; build up reserves; invest those reserves; and make contractual payments. Fees are based on the expected incidence of the insured risk and the expected return on investment.
3. Providing specialized services facilitating or supporting financial intermediation, insurance, and employee benefit programs.

Monetary authorities charged with monetary control are included in this sector.

Real Estate and Renting and Leasing sector comprises establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services. The major portion of this sector comprises establishments that rent, lease, or otherwise allow the use of their own assets by others. The assets may be tangible, as is the case of real estate and equipment, or intangible, as is the case with patents and trademarks. This sector also includes establishments primarily engaged in managing real estate for others, selling, renting and/or buying real estate for others, and appraising real estate. These activities are closely related to this sector's main activity, and from a production basis they are included here. In addition, a substantial proportion of property management is self-performed by lessors.

The Finance and Insurance sector and Real Estate sector were combined and presented as Financial Activities in the study report.

Management of Companies and Enterprises sector comprises (1) establishments that hold the securities of (or other equity interests in) companies and enterprises for the purpose of owning a controlling interest or influencing management decisions or (2) establishments (except government establishments) that administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decision-making role of the company or enterprise. Establishments that administer, oversee, and manage may hold the securities of the company or enterprise.

Professional, Scientific and Technical Services sector comprises establishments that specialize in performing professional, scientific, and technical activities for others. These activities require a high degree of expertise and training. The establishments in this sector specialize according to expertise and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: legal advice and representation; accounting, bookkeeping, and payroll services; architectural, engineering, and specialized design services; computer services; consulting services; research services; advertising services; photographic

services; translation and interpretation services; veterinary services; and other professional, scientific, and technical services.

Administrative and Support and Waste Management and Remediation Services sector comprises establishments performing routine support activities for the day-to-day operations of other organizations. These essential activities are often undertaken in-house by establishments in many sectors of the economy. The establishments in this sector specialize in one or more of these support activities and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services

The Management of Companies, Professional, Scientific and Technical Services, and Administrative and Support/Waste Management and Remediation Services sectors were combined and presented as Professional and Business Services in the study report.

Educational Services sector comprises establishments that provide instruction and training in a wide variety of subjects. This instruction and training is provided by specialized establishments, such as schools, colleges, universities, and training centers. These establishments may be privately owned and operated for profit or not for profit, or they may be publicly owned and operated. They may also offer food and/or accommodation services to their students.

Health Care and Social Assistance sector comprises establishments providing health care and social assistance for individuals. The sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. The industries in this sector are arranged on a continuum starting with establishments providing medical care exclusively, continuing with those providing health care and social assistance, and finally finishing with those providing only social assistance. Establishments in this sector deliver services by trained professionals. All industries in the sector share this commonality of process, namely, labor inputs of health practitioners or social workers with the requisite expertise.

The Education Services and Health Care/Social Assistance sectors were combined and presented as Education and Health Services in the study report.

Arts, Entertainment, and Recreation sector includes a wide range of establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons. This sector comprises (1) establishments that are involved in producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; (2) establishments that preserve and exhibit objects and sites of historical, cultural, or educational interest; and (3) establishments that operate facilities or provide services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests.

Accommodation and Food Services sector comprises establishments providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption. The sector

includes both accommodation and food services establishments because the two activities are often combined at the same establishment.

The Arts/Entertainment/Recreation and Accommodation/Food Services sectors were combined and presented as Leisure and Hospitality in the study report.

Other Services (except Public Administration) sector comprises establishments engaged in providing services not specifically provided for elsewhere in the classification system. Establishments in this sector are primarily engaged in activities such as equipment and machinery repairing, promoting or administering religious activities, grant making, advocacy, and providing dry-cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services. Private households that engage in employing workers on or about the premises in activities primarily concerned with the operation of the household are included in this sector.

Public Administration sector consists of establishments of federal, state, and local government agencies that administer, oversee, and manage public programs and have executive, legislative, or judicial authority over other institutions within a given area. These agencies also set policy, create laws, adjudicate civil and criminal legal cases, and provide for public safety and for national defense. In general, government establishments in the Public Administration sector oversee governmental programs and activities that are not performed by private establishments

Source: Source: US Census Bureau 2017 North American Industry Classification System (NAICS) definitions from the NAICS search site (<https://www.census.gov/cgi-bin/sssd/naics/naicsrch>)