

Appendix F: Peer Set Analysis

March 2016

Camoin Associates conducted a peer analysis for Newton and Needham in order to understand how the study area compares to relevant communities across the United States from an economic development perspective.

In many ways, the N² Corridor is breaking new ground as a suburb of a major innovation city that is seeking to become a destination for innovation-driven industries. To choose the peer communities, we went through the following steps.

1. We identified major U.S. cities that are similar in population size to Boston: Memphis, TN, Seattle, WA, Denver, CO, Washington, DC, Nashville, TN and Baltimore, MD. However, neither Memphis nor Nashville are as strong in innovation as the other cities, so they were then excluded from the list. We then added Austin, TX, Raleigh, NC, and San Diego, CA to our list of considerations, because they are identified as core cities in strong-innovation regions.
2. We then identified suburbs of each of these cities that are affluent, with strong school systems and high average incomes, and added Burlington, MA to the list as a local comparison and potential competitor.

Peer Selection

Core City	Suburb(s)
Boston, MA	Newton, Needham, Burlington, MA
Austin, TX	Wimberley, TX
Baltimore, MD	Ellicott City, MD
Denver, CO	Boulder, CO, and Aurora, CO
Raleigh, NC	Cary, NC
Seattle, WA	Bellevue, WA
Washington, DC	Alexandria, VA, and Bethesda, MD
San Diego, CA	Escondido, CA

3. Initial data collection revealed that Austin's and San Diego's suburbs did not include communities that offered valuable comparisons to Newton and Needham. Wimberley, TX and Escondido, CA were dropped from the peer list.



We then selected a number of demographic, economic and socio-economic indicators related to innovation economies and collected this data for each of the peer communities. Our findings are summarized below, and the supporting data tables follow.

- Newton and particularly Needham are less racially diverse than the peers. The peers, on average, have populations that are on average 35% nonwhite and/or Hispanic, while Newton's figure is 25% and Needham's is 13%.
- Newton and Needham's population is older than that of the peers. The peers, on average, have a median age of 37.3, while Newton and Needham are 40.2 and 42.9, respectively. The growth of Newton and Needham's working-age populations from 2010 to 2014 was also considerably slower than the peer average of 3.9%.
- Newton and Needham have dramatically higher education attainment than the peers do on average. Across the peer communities, about 60% of residents have a bachelor's degree or higher. This figure is 75.9% for Newton and 74.1% for Needham; among the peers, only Bethesda, MD, at 82.2%, has a higher percentage.
- Home prices are much higher in Newton and Needham than in the peer communities, again with the exception of Bethesda. The same is true of median household income. When comparing home values to income, however, the ratios in Newton and Needham are roughly comparable to the peer set. The biggest outliers for this ratio are Cary, NC, where the ratio of median home value to median income is lowest, and Boulder, CO, where that ratio is highest.
- Median household income is much higher in Newton and Needham than in the peer communities, again with the exception of Bethesda.
- Newton and Needham have very strong relative patent intensities. The peers, on average, have a rate of 5.28 patents per 1,000 residents, while Newton's figure is 10.91 and Needham's is 7.35.
- Newton performs very highly in comparison to the peers in terms of number of venture capital deals and the average size of those deals. Only Boulder, CO had a larger value of deals than Newton, while the next most competitive peer had less than half that value. Needham only had two deals and a very low average deal size; in this respect, Needham is more comparable to Ellicott City, MD, and Alexandria, VA, where venture capital activity is also quite low.
- The concentration of STEM jobs in the Boston metro is 60% higher than the concentration of jobs in the same occupations in the nation overall. However, compared to the peer metros, the location quotient of STEM occupations in the Boston metro is slightly below average. While the Boston metro has a higher concentration of STEM jobs than the Denver and Baltimore metros, it has a lower concentration than the Seattle and Washington, DC metro areas.
- Compared to the peer metros, the Boston metro has a very high number of completions in educational fields related to STEM occupations. With over 33,000 STEM-related completions, Washington, DC is the only metro with a higher number of STEM-related completions than the Boston metro.
- Newton and Needham's 8% employment growth over the past 5 years is a slightly lower rate of growth than the peer average of 10%. Cary, NC had the sharpest jump of 25%



employment growth over that period, and Bellevue, WA, Boulder, CO, and Aurora, CO also had faster growth than the study area. But Newton and Needham's employment growth did outpace that of Burlington, MA (7%), Ellicott City, MD (6%), Bethesda, MD (3%), and Alexandria, VA (-2%). As for the metropolitan areas that these suburbs belong to, Boston's 9% employment growth puts it above Washington's (5%) and Baltimore's (7%) but below the double-digit growth seen in the Seattle (14%), Denver (15%), and Raleigh metros (15%).

- When looking at employment in the priority industries studied for the N² Corridor,¹ Newton and Needham have a solid national location quotient of 3.20. But six of the eight comparison geographies had even higher location quotients, with Burlington, MA and Bellevue, WA both exceeding an LQ of 6.
- Commercial real estate inventory in Boston's downtown is comparable to the average for the peers' commercial business districts. However, in comparing inventory for these metros' suburbs, the Boston suburban market (about 113 million square feet) is somewhat tighter than the peer average (about 142 million square feet).
- Commercial real estate prices for the Boston area exceed those of the peers for almost every category of office space. However, the gap is much less pronounced when comparing only suburban commercial space. Suburban Boston commercial space prices are competitive with prices in the suburbs of Seattle and Washington, DC.
- In terms of commute patterns, with the exception of the Colorado cities, Newton and Needham are ahead of the pack in terms of the proportion of residents that are also employed within the community, as well as the proportion of workers also residing within the community. This indicates slightly lower rates of in- and out-commuting relative to peers.

¹ The priority industries studied included relevant industries within the Information Technology sector; the Professional, Scientific, and Technical Services sector; and the Biotech and Life Sciences sector. See the Priority Industry Analysis appendix for further detail.



Peer Analysis: Socio-Demographics

Location	Population	White & Nonhispanic Population	% Nonwhite and/or Hispanic	Median Age	Working Age Population Growth (Ages 20-64, 2010-2014)	% of 25+ Popn. With Bachelors or Higher	Median Value of Owner-occupied Units	Median Household Income	Ratio of Median Home Value to Median Income
Newton, MA	86,945	65,327	25%	40.2	0.4%	75.9%	\$715,000	\$118,639	6.03
Needham, MA	29,540	25,559	13%	42.9	1.4%	74.1%	\$668,900	\$129,154	5.18
Burlington, MA	25,190	19,670	22%	41.8	2.1%	47.3%	\$419,000	\$95,465	4.39
Boulder, CO	102,002	84,317	17%	28.3	2.7%	71.5%	\$499,200	\$58,062	8.60
Cary, NC	146,041	96,737	34%	36.9	8.3%	61.8%	\$301,600	\$91,481	3.30
Bellevue, WA	132,268	75,179	43%	37.9	9.4%	62.1%	\$538,300	\$92,524	5.82
Alexandria, VA	146,422	77,220	47%	35.8	4.0%	61.5%	\$494,400	\$87,319	5.66
Bethesda, MD	62,024	47,606	23%	43.2	0.0%	82.2%	\$821,000	\$145,288	5.65
Aurora, CO	339,480	157,084	54%	33.4	3.1%	27.1%	\$179,300	\$52,275	3.43
Ellicott City, MD	68,507	41,060	40%	40.7	1.7%	65.3%	\$507,300	\$114,694	4.42

Demographics source: 2014 ACS 5-yr estimates, 2010 ACS



Peer Analysis: Economy and Sources of Innovation

Location	Patents	Patent Intensity (Patents per 1,000 Residents)	Number of VC Deals	Total VC Dollars (\$000s)	Average Deal Size (\$000s)	STEM Occupation Concentration (LQ) for MSA	STEM Related Completions for MSA	Employment Growth (2010-2015)	LQ for Priority Industries
Newton, MA	949	10.91	9	\$125,250	\$13,917	1.60	30,519	8%	3.20
Needham, MA	217	7.35	2	\$3,060	\$340				
Burlington, MA	--	--	6	\$30,070	\$3,341	1.60	30,519	7%	6.88
Boulder, CO	857	8.40	16	\$189,106	\$21,012	1.56	14,154	12%	3.89
Cary, NC	1,120	7.67	5	\$59,000	\$6,556	1.60	6,951	25%	4.38
Bellevue, WA	2,046	15.47	10	\$32,228	\$3,581	1.80	13,305	18%	6.14
Alexandria, VA	182	1.24	2	\$1,500	\$167	2.02	33,072	-2%	3.36
Bethesda, MD	54	0.87	4	\$53,850	\$5,983	2.02	33,072	3%	3.45
Aurora, CO	128	0.38	2	\$21,200	\$2,356	1.56	14,154	13%	1.31
Ellicott City, MD	203	2.96	1	\$1,000	\$111	1.38	12,821	6%	1.57

Patents source: USPTO, number of patents issued in 2015 with at least one inventor residing in this locality

VC Deals and Total Dollars source: Crunchbase (www.crunchbase.com). Companies with HQs in these localities with seed, angel or venture investments in calendar year 2015. Does not include any debt. Newton and Boulder each include one deal where amount is undisclosed.

STEM Occupations LQ Source: EMSI 2015.3 - QCEW Employees, Non-QCEW Employees, and Self-Employed

STEM Related Completions Source: EMSI 2015.3 - QCEW Employees, Non-QCEW Employees, and Self-Employed

Priority Industry LQ Source: EMSI

Employment Growth Source: EMSI



Peer Analysis: Economy and Sources of Innovation, Continued

Location	"Meds and Eds"	Major Employers
Burlington, MA	Lahey Hospital	Oracle, Avid Technology, Genesis HR, In Ventiv Health
Boulder, CO	UC Boulder, many research institutes	IBM, Ball Corp, Oracle, Emerson Process Management, Qualcomm
Cary, NC	WakeMed	SAS Institute, Fidelity Investments, Verizon, Siemens Medical Solutions
Bellevue, WA	Overlake Hospital Medical Center	Boeing, Expedia, Microsoft
Alexandria, VA	Inova Healthy, Institute for Defense Analyses, branches of VA Tech, VCU, GWU	Grant Thornton LLP, Oblon
Bethesda, MD	National Institutes of Health, Walter Reed	DMI (IT services), Cambridge Information Group
Aurora, CO	UC Anschutz Medical Campus, Children's Hospital, Med. Center of Aurora	Raytheon, Kaiser Pemanente, ADT Security, Northrop Grumman
Ellicott City, MD	Johns Hopkins U. Applied Physics Laboratory nearby	Not determined; unincorporated community



Peer Analysis: Real Estate

Location	Real Estate Market Area	Commercial Space Inventory (SF) - Market Area Downtown	Commercial Space Inventory (SF) - Market Area Suburban	\$/SF - Commercial Space - CBD Class A	\$/SF - Commercial Space - CBD Class B	\$/SF - Commercial Space - Suburban Class A	\$/SF - Commercial Space - Suburban Class B
Newton, MA	Boston	63,372,134	113,055,189	\$59.00	\$40.00	\$32.00	\$24.00
Needham, MA	Boston	63,372,134	113,055,189	\$59.00	\$40.00	\$32.00	\$24.00
Burlington, MA	Boston	63,372,134	113,055,189	\$59.00	\$40.00	\$32.00	\$24.00
Boulder, CO	Denver	35,797,612	107,777,130	\$35.00	\$23.40	\$26.00	\$23.00
Cary, NC	Raleigh	15,199,346	68,090,140	\$25.30	\$20.20	\$22.70	\$18.80
Bellevue, WA	Seattle	57,464,088	73,672,731	\$40.90	\$27.50	\$36.90	\$25.00
Alexandria, VA	Washington	143,666,947	289,611,256	\$54.40	\$41.90	\$31.50	\$25.70
Bethesda, MD	Washington	143,666,947	289,611,256	\$54.40	\$41.90	\$31.50	\$25.70
Aurora, CO	Denver	35,797,612	107,777,130	\$35.00	\$23.40	\$26.00	\$23.00
Ellicott City, MD	Baltimore	28,819,747	90,182,424	\$30.00	\$19.50	\$26.00	\$21.00

Commercial Space Inventory source: Colliers 2015Q3 Report

Lease Rates source: 2016 IRR Viewpoint regional office market reports



Peer Analysis: Commute Patterns

Location	Count of Employed Residents	% Employed in Community	Count of Workers	% Residing in Community
Newton, MA	42,684	26%	53,272	21%
Needham, MA	14,015	25%	19,292	18%
Burlington, MA	13,120	25%	37,088	9%
Boulder, CO	36,264	54%	83,871	23%
Cary, NC	69,347	19%	78,003	17%
Bellevue, WA	60,005	24%	126,383	12%
Alexandria, VA	67,727	16%	84,726	13%
Bethesda, MD	25,231	15%	69,140	6%
Aurora, CO	143,919	21%	115,356	26%
Ellicott City, MD	31,592	9%	19,906	14%

