

**SUMMARY REPORT**  
**OFF-CAMPUS STUDENT HOUSING**  
**MARKET STUDY**

**NORTHEASTERN UNIVERSITY**  
**2019 UPDATE**

**Prepared For:**

Northeastern University  
716 Columbus Ave., Suite 328  
Boston, MA 02118

**Prepared By:**

Byrne McKinney & Associates, Inc.  
607 Boylston Street, 6<sup>th</sup> Floor  
Boston, MA 02116

**June 2019**

# Byrne McKinney & Associates, Inc.

REAL ESTATE APPRAISERS & CONSULTANTS

---

June 19, 2019

Ms. Maureen Hickey  
Director of Strategic Initiatives  
Campus Planning & Development  
Northeastern University  
360 Huntington Ave  
Boston, MA 02115

**RE: Off-Campus Student Housing Market Impact Study  
Mission Hill, Fenway, Lower Roxbury and South End Neighborhoods**

Dear Ms. Hickey:

Please find attached, a market study to facilitate your understanding of the impact that Northeastern University students (specifically undergraduates) have on the surrounding neighborhood rental and for-sale housing markets. The effective date of our report is year-end 2018.

As described by our scope, this study:

- Profiles Boston and Metro-Boston housing demand, development and supply trends (historic-current-and future), including a focused examination of the influence of student demand and off-campus housing occupancy on the Boston housing market.
- Presents neighborhood level housing studies for the four specific neighborhoods that abut the NU campus - Mission Hill, Fenway, Lower Roxbury and the South End, by analyzing recent and forecasted neighborhood demographic patterns and trends, and corresponding housing development and supply trends, focusing on changes in the college-age population, the number of student-headed households and the nature and extent of off-campus student housing occupancy in each neighborhood.
- Presents an analysis of the specific impacts of Northeastern's students on the Mission Hill, Fenway, Lower Roxbury and South End housing markets.

We appreciate the opportunity to be of assistance and look forward to discussing our findings with you further. Please do not hesitate to contact us if you have any questions.

Respectfully submitted,

BYRNE MCKINNEY & ASSOCIATES, INC.

*Pamela S. McKinney, MAI*

Pamela S. McKinney MAI  
Principal

## TABLE OF CONTENTS

SUMMARY HIGHLIGHTS AND CONCLUSIONS .....	4
Housing Supply – Demand Observations.....	4
Student Housing Market Observations .....	5
INTRODUCTION.....	6
Study Purpose.....	6
Key Dates.....	6
Study Scope.....	6
Market Area Definitions .....	7
HOUSING MARKET DEMAND ANALYSIS .....	9
Metro Boston Economy .....	9
City of Boston Economy .....	11
Population, Income and Employment.....	12
Employment Structure, Employment Trends and Occupational Changes.....	14
Largest Employers.....	16
Labor Force and Education.....	16
Income, Wages, and Cost of Living .....	17
Medical and Higher Educational Institutions .....	18
City of Boston and NU Study Area Demography .....	20
Population and Households.....	20
Age Trends and Generational Distributions.....	21
Per Capita and Household Income .....	28
Household Types and Sizes .....	30
HOUSING MARKET SUPPLY ANALYSIS.....	32
Metro Area Rental Housing Market Trends .....	32
Overview.....	32
Supply/Demand .....	32
Occupancy .....	33
Rents.....	34
City of Boston and NU Study Area Rental Housing Market Trends.....	35
Housing Supply Trends .....	35
Housing Vacancy.....	35
Housing Supply Characteristics.....	36
Housing Tenure .....	38
Rents and Renter Affordability .....	42
City Apartment Pipeline.....	46
Fenway & Mission Hill Apartment Rental Market Trends.....	46
South End Apartment Rental Market Trends.....	49
Roxbury Apartment Rental Market Trends .....	52
Boston and NU Study Area For-Sale Housing Market Trends .....	55
Home Prices and Homeowner Affordability.....	55
Single Family Trends.....	56
Two and Three Family Trends.....	58
Condominium Trends .....	59
Neighborhood Trends.....	60

STUDY AREA HOUSING MARKET OUTLOOK.....	62
Key Market Observations .....	62
Mission Hill .....	63
Fenway .....	63
South End .....	63
Roxbury .....	63
STUDENT HOUSING MARKET ANALYSIS .....	64
Boston Student Housing Market Trends.....	64
Student Enrollment Trends .....	64
Greater Boston Student Housing Overview .....	67
City of Boston Student Housing Overview .....	68
Undergraduate Housing Percentages .....	69
Undergraduates Living in Private Off-Campus Housing in Boston .....	70
Graduates Living in Private Off-Campus Housing in Boston.....	71
Top Ten Neighborhoods Supporting Off-Campus Students .....	72
Off-Campus Housing Types.....	75
Permitting and Production of New On-Campus Beds .....	76
Unmet Undergraduate Bed Demand .....	77
Northeastern Student Housing Market Impacts .....	78
NU Undergraduate Enrollment Trends and Bed Demand .....	78
Existing Bed Supply .....	80
On Campus Housing Costs .....	82
NU Bed Supply Trends .....	82
NU Accommodated Undergraduate Demand.....	85
Local Market Impacts .....	86
ADDENDA .....	88

## **SUMMARY HIGHLIGHTS AND CONCLUSIONS**

### **Housing Supply – Demand Observations**

- Recent trends suggest Boston’s population is growing at a faster rate than in prior decades – a primary factor in the growing housing market demand evident in recent years, with continued economic development successes expected to draw new employers and new residents to the City over the next five years and beyond.
- Despite major supply additions in recent years, the effects of economic growth in metro-Boston and the City are clearly being felt in the both the local rental apartment and ownership housing markets, with accelerating price growth in the most recent few years far exceeding either CPI or increases in annual wages and household income. Demand growth is simply outstripping the market’s ability to produce supply.
- The pricing pressures are most acute in the urban core submarkets (Seaport, Back Bay/Beacon Hill, South End and Downtown), but the search for value and better affordability is pushing housing consumers away from the downtown, toward other walkable and transit accessible “next tier” neighborhoods like the Fenway, Mission Hill and Lower Roxbury locations surrounding Northeastern, driving rents and sale prices in these submarkets to historic highs and rental vacancy and sale inventory levels to historic lows.
- Even the complete elimination of Northeastern students from the neighborhood markets would not produce price declines or even stability in these “next tier” neighborhoods as economic growth continues to fuel value seeking behavior by consumers in the downtown.
- Growth in NU study area submarkets is forecast to be roughly proportionate to expected City-wide increases, however, increases in the younger population cohorts (including students) are expected to be very modest to declining as institutional demand is flattening and price pressures emanating from the downtown core neighborhoods make housing options in these neighborhoods less affordable for the youngest households – including students.
- Demand for housing in the City and NU submarkets will continue to be oriented to rental product as those seeking housing in the Boston markets overwhelmingly consist of one and two person, non-family households, for whom homeownership is either inconsistent with lifecycle or circumstances or simply out of reach financially.

- As prices rise, even students are expected to be displaced by higher income mingles households, capable of paying more per capita than cash strapped students.
- Also note that if supply deliveries falter as a result of economic changes (e.g. recession or other economic shock) or City housing policy (e.g. rent control or other disincentives to investment and production), pricing pressure is sure to accelerate.

## **Student Housing Market Observations**

- The rate of undergraduate accommodation in on-campus housing has grown substantially and will continue to grow through 2023, as new beds are delivered and as growth in online education, international campus affiliations and hybrid education models deliver lower stabilized enrollments.
  - Since 2013 NU has added 1,122 dormitory beds on-campus with another 825 beds nearing completion and another 175 beds planned in the near term.
  - By 2023, 1,326 fewer NU undergraduates are forecast to live in the neighborhoods, a reduction of 30% compared to 2018.
  - The NU bed supply accommodated 48% of all undergraduate bed demand in 2013, 63% in 2018 and is expected to fulfill the need for 69% of undergraduates needing housing by 2023.
- Consistent with the historic trends, the supply-demand analysis underscores stable to declining Boston undergraduate numbers across the City and in the surrounding NU neighborhoods over the next five years, in part owing to the growth in online education, more robust study-abroad programs and other hybrid educational programs influencing the higher ed delivery system.
- In an effort to diminish the effects of students, especially undergraduates on the local markets, the City set a dormitory production target in 2010 to build 18,500 dorm beds by 2030. With additions and commitments made since then (12,000 beds constructed, under construction or planned), 65% of the goal has been achieved.
- Institutional and private dormitory production will clearly help to address existing student housing demand, however, the future of the of the local housing markets are deeply tied to the general trends expressed earlier with the expectation that all the of the surrounding submarkets are sure to see continued pricing pressure in the future as the rental markets downtown drive prices higher.

## **INTRODUCTION**

### **Study Purpose**

The purpose of this market study to facilitate your understanding of the impact that Northeastern University students (specifically undergraduates) have on the surrounding neighborhood rental and for-sale housing markets. The effective date of our report is year-end 2018.

### **Key Dates**

The effective date of our report is year-end 2018 and our findings are based on field work and analyses undertaken during the third and fourth quarters of 2018.

### **Study Scope**

In undertaking this assignment Byrne McKinney has investigated metro Boston, City of Boston and neighborhood housing demand and development trends and prepared a housing market analysis that focusses on the role of students, and in particular, Northeastern (NU) undergraduate students in those markets.

The scope of work includes analysis of:

- Boston's (Metro & City) current and past demographic patterns and trends, especially highlighting the college-age population and student-headed households City-wide and in the four neighborhoods that border the University's main campus - Mission Hill, Fenway, Lower Roxbury and the South End. In addition to historic reference points, data is presented for both the current year (2018) as well as a 5-year forecast (2023).
- Boston housing development and supply trends, focusing on the influences and character of student occupancy City-wide and in the neighborhoods listed above. The study also examines student occupancy in the rental housing market disaggregated by building type, price level, and other factors, to highlight which types of units are most affected by student occupancy.
- Characteristics of student-occupied housing, including occupancy per unit, typical rent and lease terms (e.g. 10-month, 12-month). Prices and terms in the off-campus market are compared to NU's undergraduate options (owned and master-leased) in order to assess the attractiveness/competitiveness of University controlled beds in relation to available off-campus housing alternatives.
- Impacts of NU's students on the Mission Hill, Fenway, Lower Roxbury and the South End housing markets, including consideration for the effects of projected student demand based on NU enrollment forecasts for the next five years (through 2023) and for NU master-leased units and dormitory projects under construction and in the pipeline.

Market data was collected during the third and fourth quarters of 2018. We have relied on University supplied data regarding the NU on-campus housing supply, planned student housing and construction, enrollment projections, and the background for UAO reports including address specific inventory of all University off-campus student occupancy for the years from 2013 to date.

Our projections are based upon estimates and assumptions, which are subject to uncertainty and variation. Accordingly, we do not represent them as results that will actually be achieved; however, they have been conscientiously prepared on the basis of information furnished to and compiled by us, and on our extensive experience in the applicable residential markets. Additional limiting conditions and assumptions are presented at the end of the report.

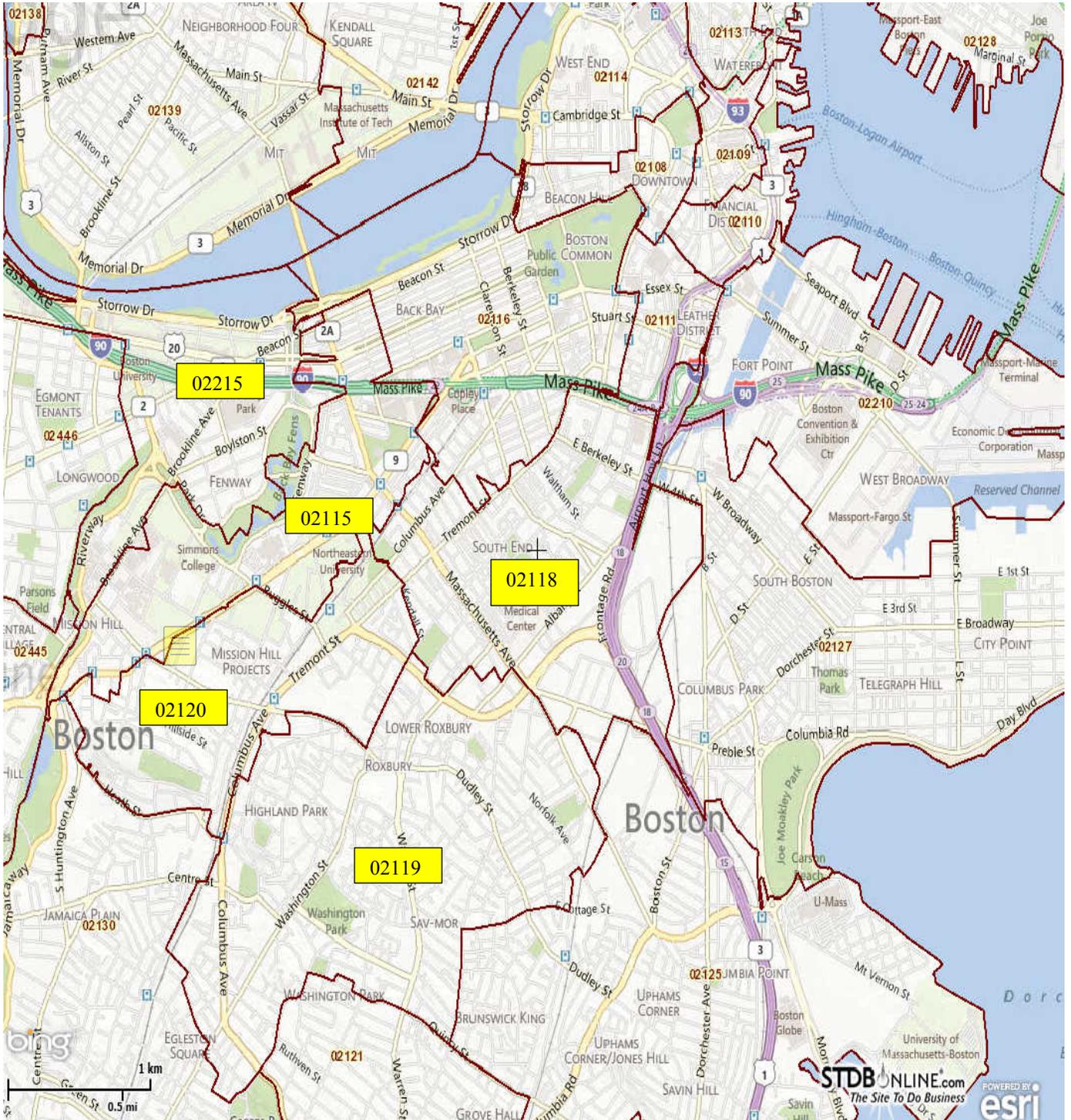
## **Market Area Definitions**

As previously indicated, this study examines the Boston metro and city-wide student housing markets providing a context for further evaluation of the submarkets most proximate to and most affected by NU student demand.

As illustrated by the map that follows (see the Northeastern University Campus at the center), the analysis defines these submarkets to include Fenway (02215 and 02115), Mission Hill (02120), Lower Roxbury (02119) and the South End (02118).



**SUBMARKET ZIP CODE ID'S**  
**(FENWAY-02115 & 02215, MISSION HILL-02120, LOWER ROXBURY-02119 & SOUTH END-02118)**



## HOUSING MARKET DEMAND ANALYSIS

### Metro Boston Economy

The Boston metropolitan area is the economic hub of the Commonwealth of Massachusetts and the New England region, providing governmental, professional, business, financial, higher educational and medical services, as well as important transportation, communications, export, cultural and entertainment activities.

Over the past four decades Greater Boston has made the transition from manufacturing to a knowledge-based economy. “The area attracts a wellspring of young talent as well as research funds and venture capital to turn innovations into new business spin-offs....Boston and Cambridge are the region’s most concentrated locus of talent, expertise and innovation, with renowned institutions of higher education, culture and medicine, providing great ballast to the Greater Boston economy in volatile economic times.”<sup>1</sup> In fact, the Milken Institute has ranked Massachusetts in first place on each biennial State Technology and Science Index between 2002 and 2018. As described by the Institute, “the index tracks and evaluates every state’s tech and science capabilities – and their success in converting those assets into companies and high-paying jobs.”<sup>2</sup>

Data published in the most recent *New England Economic Indicators* report of the Federal Reserve Bank of Boston provides historic and recent trends. The tables below summarize total non-agricultural employment and annual average unemployment rates over the past decade for the region, state and metropolitan area. The latter is the Boston core urbanized area plus surrounding towns with strong social and economic ties to the core area, defined by the U.S. Census Bureau as the Boston-Cambridge-Quincy MA-NH Metropolitan NECTA (New England City and Town Area; corresponding with the CMSA).

Over the past decade the Boston area unemployment rate has ranged from a high of 7.6% in 2010 to a low in 2018 of 3.1%. Notably, the metropolitan area has consistently fared better than the country overall. According to the Bureau of Labor Statistics, the non-seasonally-adjusted average annual unemployment rate for the City of Boston has been steadily declining since 2010. The most recent finalized data for year-end 2018 indicates the Boston unemployment rate has dropped even further to 2.3%.

---

<sup>1</sup> The Boston Foundation, *The Boston Indicators Report 2015*, p. 17.

<sup>2</sup> [MilkenInstitute.org/publications/view/827](http://MilkenInstitute.org/publications/view/827)

**Employment Change in the New England Region 2009-2018**  
(NON-AGRICULTURAL EMPLOYMENT; SEASONALLY ADJUSTED AVERAGES)

Area	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>New England</b>	<b>6,817,100</b>	<b>6,802,700</b>	<b>6,866,500</b>	<b>6,949,900</b>	<b>7,033,900</b>	<b>7,131,800</b>	<b>7,236,400</b>	<b>7,333,800</b>	<b>7,398,000</b>	<b>7,493,300</b>
Emp. Change	-254,300	-14,400	63,800	83,400	84,000	97,900	104,600	97,400	64,200	95,300
% Change	-3.60%	-0.21%	0.94%	1.21%	1.21%	1.39%	1.47%	1.35%	0.88%	1.29%
<b>Massachusetts</b>	<b>3,210,300</b>	<b>3,221,700</b>	<b>3,259,100</b>	<b>3,310,700</b>	<b>3,365,200</b>	<b>3,431,600</b>	<b>3,498,200</b>	<b>3,564,900</b>	<b>3,609,500</b>	<b>3,665,000</b>
Emp. Change	-107,800	11,400	37,400	51,600	54,500	66,400	66,600	66,700	44,600	55,500
% Change	-3.25%	0.36%	1.16%	1.58%	1.65%	1.97%	1.94%	1.91%	1.25%	1.54%
<b>Boston NECTA</b>	<b>2,419,800</b>	<b>2,431,000</b>	<b>2,461,600</b>	<b>2,505,500</b>	<b>2,550,400</b>	<b>2,597,500</b>	<b>2,652,500</b>	<b>2,704,400</b>	<b>2,737,400</b>	<b>2,781,600</b>
Emp. Change	-78,200	11,200	30,600	43,900	44,900	47,100	55,000	51,900	33,000	44,200
% Change	-3.13%	0.46%	1.26%	1.78%	1.79%	1.85%	2.12%	1.96%	1.22%	1.61%

Source: Federal Reserve Bank of Boston's website (New England Economic Indicators Database).

**Annual Average Unemployment Rates, 2009-2018**

Area	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
United States	9.3%	9.6%	8.9%	8.1%	7.4%	6.2%	5.3%	4.9%	4.4%	3.9%
New England	8.0%	8.4%	7.7%	7.2%	6.9%	5.9%	4.9%	4.2%	3.8%	3.6%
Massachusetts	8.1%	8.3%	7.2%	6.7%	6.7%	5.7%	4.8%	3.9%	3.7%	3.5%
Boston NECTA	7.5%	7.6%	6.6%	6.1%	6.1%	5.2%	4.3%	3.5%	3.3%	3.1%
<b>City of Boston</b>	<b>7.5%</b>	<b>7.5%</b>	<b>6.5%</b>	<b>6.0%</b>	<b>6.1%</b>	<b>5.2%</b>	<b>4.4%</b>	<b>3.5%</b>	<b>3.4%</b>	<b>3.1%</b>

Source: Federal Reserve Bank of Boston's website (Economic Indicators Database) and U.S. Bureau of Labor Statistics.

Notes: Annual seasonally adjusted rates (except Boston, which is non-seasonally adjusted);

Boston City's 2018 rate includes final figures for December.

Economist Alan Clayton-Matthews presented his outlook for Massachusetts in a January 2019 meeting for members of MassEcon (a private, nonprofit group). He is a Northeastern University Professor, New England Economic Partnership Forecast Manager, and co-editor of Massachusetts Benchmarks (a joint publication of UMass and the Federal Reserve Bank of Boston that presents information and analysis about the Massachusetts economy).

As summarized in a MassEcon press release, Clayton-Matthews cited volatility in the stock market, rising interest rates, high housing prices, and a tight market in skilled labor as challenges that Massachusetts faces going into 2019. He predicted that the state's real product will be shown to have slowed in the fourth quarter of 2018 from earlier in the year, when it was about 2.1%. It is believed that the stimulus of the tax cuts from 2017 is wearing off and the State continues to be affected by an aging workforce.

International migration is seen to contribute positively to the state's workforce, making up for the negative migration rate within the United States, and an overall migration increase from 14,800 in 2016 to 27,300 in 2018 was quoted. He credited higher-than-average rates of productivity among workers in Massachusetts as being largely responsible for the generally healthy economy and also indicated that historically the state has been growing employment by about 50,000 every year, a basic trend that is expected to continue.

Parts of the economy are “booming”, and unemployment is at historically low levels, with significant strength evidenced in technical, science, knowledge-based industries, and even construction (including housing production). That said, Clayton-Matthews also offered that while new multifamily deliveries have been substantial, the additions are not enough to make any significant dent in housing prices.

The rate of population growth in the State was referenced as having been about half a percent and he expects it will probably remain that way for several years. The composition of that State-wide growth is shifting to older age, putting a constraint on labor force growth, which Clayton-Matthews said is projected to slow to zero by 2030.

Much of the State's growth is concentrated in metro-Boston which remains an education and medical hub, with more than 20% of the workforce employed by universities, hospitals and similar institutions. Notably, the metro area attracts more than 300,000 college students a year, with institutions like Harvard University, the Massachusetts Institute of Technology, Boston University, Northeastern and Boston College. Other industries like government, industrial machinery, financial services, technology, trade, and tourism also contribute to the metro's dynamic economy.

## **City of Boston Economy**

The Official Statement (OS) of the City of Boston for a General Obligation Bond Offering issued on March 3, 2019 (2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information) offers an excellent overview of City demographic and economic trends. Excerpts from the OS are provided in the indented sections that follow (with related exhibits). For a complete presentation of Exhibit III, follow the link to: <https://www.buybostonbonds.com/boston-investor-relations-ma/view-file/i3491?mediaId=315723>.

Information presented in the OS offers a broad picture of the economic context within which the City housing markets perform. Note that our commentary on the relevance of City demographic and economic trends to the housing market analysis is interspersed – highlighted in bold italics.

Boston is the twenty-second largest city, in terms of population, in the United States and the economic hub of the Commonwealth of Massachusetts (the “Commonwealth”). It is a center for professional services, business, finance, technology, research and development, higher education and health care, as well as for transportation, exports, communications, culture and entertainment. Boston is the capital of the Commonwealth and is host to several federal regional offices.

According to the U.S. Census Bureau's American Community Survey ("ACS"), Boston's population for 2017 was 683,015. The BPDA Research Division estimates there are 812,153 full and part-time, payroll and non-payroll jobs in Boston as of 2017 based on data provided by the Bureau of Economic Analysis ("BEA") and Massachusetts Executive Office of Labor and Workforce Development ("EOLWD"). Boston's jobs represent 17% of the total statewide jobs.

Boston's economy, on average, outperformed both Massachusetts and the nation in terms of job growth from 2007 to 2017. During that period, Boston's average annual job growth was 2%. Following the start of the Great Recession in December 2007, the national economy experienced rising unemployment and deteriorating economic conditions. In late 2008 Boston's economy began to show signs of a weakening labor market, and economic conditions worsened from late 2008 until February 2010, when positive job growth returned. Payroll jobs grew in Boston at an average annual rate of 2% from 2010 through 2017, exceeding the national recovery. Boston's unemployment rate for 2018 was 3.1%, nearly a full percentage point less than the national rate.

Similar to the job market, Boston's office real estate market experienced a downward shift beginning in the last half of 2008 through mid-2010. The housing market in Boston, also hurt by the recession's rising foreclosures and tight lending market, saw reductions in sales volumes and small to moderate drops in prices. However, Boston's commercial real estate market rebounded and continues to show strong growth. Factors influencing commercial development include growth in high tech sectors, high rents, low interest rates, low unemployment rates, and population growth.

Residential markets continue to show strong growth with increasing prices and stable sales volumes. Lower vacancies and population growth coincide with higher price levels and rents. The 2018 Q4 median sales price for a single family home in Boston was \$600,000 according to the Department of Neighborhood Development based on Banker & Tradesman data.

Population, income and employment trends for the City of Boston and the region as set forth in the Official Statement of the City of Boston related to GO Bond Offering - 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information (OS), are presented in the pages that follow. According to the OS, the source data includes U.S. Census Bureau; the BEA; the U.S. Department of Labor, Bureau of Labor Statistics (the "BLS"); and the City of Boston and the BPDA. Note that excerpts that follow reflect the latest information published by the City.

### *Population, Income and Employment*

Boston's population from the 2010 Census was 617,594, which represented a 4.8% increase from the 2000 count of 589,141. The Census Bureau's 2010 population count for Metropolitan Boston was 4,552,402, representing an increase of 3.7% since 2000. Massachusetts' 2010 Census enumeration was 6,547,629, a gain of 3.1% over the 2000 count. The most recent ACS (2017) estimates the City of Boston's total population to be 683,015. The compound annual growth for the City from the 2010 decennial census through 2017 is 1.7%. Recent trends suggest Boston's population is growing at a faster rate than in prior decades.

***Population increases are a primary factor in the growing housing market demand evident in recent years.***

**Population of Massachusetts, Metropolitan Boston <sup>(1)</sup>  
and the City of Boston 1990, 2000, 2010, 2016 & 2017**

	1990	2000	2010	2016	2017	2010 to 2017 Compound Annual Growth
Massachusetts	6,016,425	6,349,097	6,547,629	6,811,779	6,859,819	0.8%
Metropolitan Boston <sup>(1)</sup>	4,133,895	4,391,344	4,552,402	4,794,447	4,836,531	1.0%
City of Boston	574,283	589,141	617,594	672,840	683,015	1.7%

(1) The Boston-Cambridge-Newton MA-NH MSA Includes five counties in Massachusetts (Essex, Middlesex, Norfolk, Plymouth and Suffolk) and two counties in New Hampshire (Rockingham and Strafford), as defined by the Office of Management and Budget (OMB).

Source: U.S. Census Bureau, 1990, 2000, and 2010 Decennial Census; 2016 and 2017 American Community Survey one-year estimates, December 2018.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 3

Boston continues to be a city of young adults due to the large number of students and young professionals living and working in the City; 35% of all persons in Boston in 2010 were between 20 and 34 years old compared to 33% in 2000. The fastest growing age group in Boston between 2000 and 2017 was the age group 55 to 64, which saw a 66.6% increase. This is consistent with national trends and the aging of the baby boomer population. Boston’s elderly population (ages 65 and over) grew to 79,984 but has remained just over 10% of the total population. Boston’s population of school age children (ages 5 to 14) is 54,222, a level it has maintained since the dramatic fall from over 100,000 in the 1970s.

Along with population growth, the number of households in Boston has also grown, to 268,304 according to the 2017 ACS. The share of these households that are families (related or married people living together) remains stable at 47.7% of all households in 2017. The group quarters population, primarily students in dormitories, increased from 2010, up to 46,196 in 2017. Household size increased from 2.26 persons in 2010 to 2.37 persons in 2017. In 2017, Massachusetts had a population of approximately 6.8 million people and 4.8 million jobs, according to BEA annual data. Between 2013 and 2017 the number of jobs in Massachusetts grew by 2.4%. Massachusetts personal income, net inflation, grew at an average annual rate of 3.4% from 2013 to 2017, four tenths of a percentage point greater than the national income growth over the same period.

Metropolitan Boston had 4.8 million people and 3.6 million jobs in 2017. From 2013 through 2017, Metropolitan Boston experienced an average annual growth in jobs of 2.5%. The MSA’s total personal income, net inflation, from 2013 through 2017 grew at an average annual rate of 3.7%, slightly outpacing national trends during that period.

***This rate of income growth more than outpaces the rate of inflation and has helped to support continued price growth in the local housing markets.***

*Employment Structure, Employment Trends and Occupational Changes*

Boston has seen recent growth in professional and technical services, health care, and transportation and warehousing. The largest industries in the city are health care and social assistance, professional and technical services, finance and insurance, government, accommodation and food services, and education.

The table below shows Boston’s employment growth by industry category for 2013 through 2017. The industry categories are in the North American Industrial Classification System (“NAICS”) format, which the BEA began using in 2001. Suffolk County data is mathematically reduced to the Boston geography using unemployment insurance coverage data (Employment Security, ES-202, for cities and towns from the Massachusetts Executive Office of Labor and Workforce Development).

	2013	2014	2015	2016	2017
<b>United States</b>					
Total Personal Income (billions \$) .....	\$15,279	\$15,892	\$16,645	\$16,860	\$17,230
Population (thousands) .....	316,235	318,623	321,040	323,406	325,719
Per Capita Income.....	\$48,316	\$49,877	\$51,847	\$52,133	\$52,899
Employment (thousands).....	182,325	186,236	190,318	193,369	196,132
<b>Massachusetts</b>					
Total Personal Income (billions \$) .....	\$415	\$430	\$457	\$465	\$475
Population (thousands) .....	6,707	6,750	6,784	6,812	6,860
Per Capita Income.....	\$61,889	\$63,579	\$67,295	\$68,198	\$69,279
Employment (thousands) .....	4,354	4,449	4,632	4,710	4,778
<b>Boston-Cambridge-Newton, MA-NH (MSA)<sup>(2)</sup></b>					
Total Personal Income (billions \$) .....	\$317	\$329	\$351	\$358	\$367
Population (thousands) .....	4,696	4,735	4,767	4,794	4,837
Per Capita Income.....	\$67,396	\$69,321	\$73,513	\$74,549	\$75,829
Employment (thousands).....	3,268	3,345	3,491	3,557	3,611

(1) The BEA revised its historic employment data by incorporating additional data sources and improving allocation methods, which resulted in revised employment estimates for Boston from 2001 through 2016

(2) The Boston-Cambridge-Newton MA-NH MSA Includes five counties in Massachusetts (Essex, Middlesex, Norfolk, Plymouth and Suffolk) and two counties in New Hampshire (Rockingham and Strafford).

Source: U. S. Department of Commerce, Bureau of Economic Analysis and U.S. Census Bureau, December 2018. BEA Data last updated December 2018.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 4

Total employment in Boston rose to the highest level in recent decades and unemployment fell below three percent in the last quarter of 2018. Boston’s job growth has been positive across most industries since the recession and is mostly concentrated in health care and social assistance, professional and technical services, and accommodation and food services. The health care and social assistance industry employs the largest number of people in Boston, 18.3 percent of total jobs, while transportation and warehousing has surpassed professional and technical services as the fastest growing industry since the recession at 8.1% per year. The job growth in transportation and warehousing is predominantly in non-payroll positions.

Educational services is an area of specialization for Boston with an employment share three times the national average. The most recent economic conditions in Boston show steady growth in the labor market.

Industry	2013 <sup>(2)</sup>	2014 <sup>(2)</sup>	2015	2016	2017	Absolute Change '16-'17	Percent Change '16-'17
Natural Resources and Mining.....	385	354	385	346	349	4	1.1%
Utilities.....	1,578	1,911	1,977	2,014	2,249	235	11.7%
Construction.....	16,994	17,117	17,978	19,317	20,817	1,500	7.8%
Manufacturing.....	8,335	7,767	8,034	7,927	8,289	362	4.6%
Wholesale Trade.....	9,242	9,595	10,039	9,673	9,821	148	1.5%
Retail Trade.....	32,316	33,021	34,403	35,315	35,744	428	1.2%
Transportation and Warehousing.....	21,060	24,375	29,749	32,909	34,273	1,364	4.1%
Information.....	15,721	16,170	16,894	18,393	19,439	1,046	5.7%
Finance and Insurance.....	86,824	86,454	89,221	93,669	94,329	659	0.7%
Real Estate and Rental and Leasing.....	31,214	33,123	34,730	35,682	36,927	1,245	3.5%
Professional and Technical Services.....	82,608	86,425	93,875	98,074	101,413	3,339	3.4%
Management of Companies and Enterprises.....	7,823	8,068	8,380	9,220	9,687	467	5.1%
Administrative and Waste Services.....	34,166	35,818	37,624	39,591	40,282	691	1.7%
Educational Services.....	55,630	56,909	58,659	58,838	57,845	-994	-1.7%
Health Care and Social Assistance.....	131,165	134,938	140,717	144,543	148,328	3,785	2.6%
Arts, Entertainment, and Recreation.....	15,435	16,555	17,328	17,905	18,245	340	1.9%
Accommodation and Food Services.....	57,808	59,265	60,185	62,733	64,897	2,164	3.4%
Other Services (except public administration) (2)	31,440	33,176	33,812	33,164	33,414	250	0.8%
Government.....	75,652	76,379	76,557	76,897	75,807	-1,091	-1.4%
<b>Total.....</b>	<b>715,396</b>	<b>737,420</b>	<b>770,548</b>	<b>796,211</b>	<b>812,153</b>	<b>15,942</b>	<b>2.0%</b>

(1) The employment figures are from the BEA Series for Suffolk County, pro-rated to the City's geographical boundary using data from EOLWD.

(2) Other services include repair and maintenance, personal and laundry services, and religious, grant making, civic, professional, and similar organizations.

(3) The BEA revised its historic employment data by incorporating additional data sources and improving allocation methods, resulting in revised employment estimates for Boston from 2001 through 2016.

Source: U.S. Bureau of Economic Analysis, Massachusetts Executive Office of Labor and Workforce Development, BPDA Research Division Analysis.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 5

In addition to this strong overall growth, the high tech sector jobs grew by an average annual rate of 8.9% since 2010. Boston's high tech industries benefit from supportive public policies and high tech clusters that foster synergistic innovation. Major Boston high tech clusters include the Innovation District, which provides startups a place to grow, and world class centers for medical research in the Longwood Medical Area and Massachusetts General Hospital campus. Major companies have also moved to new office spaces throughout Boston.

In October 2017, Reebok moved into its new 220,000 square foot headquarters at the Innovation and Design Building in the Seaport District. In 2018, Bose began outfitting a 98,000 square foot office space in Boston Landing. The fantasy sports website DraftKings announced plans to double the size of its headquarters in a move to Boston's Back Bay, while Haemonetics Corp, a Braintree-based company that manufactures blood management devices, announced plans to move into DraftKing's former office space in the Financial District in 2019. Though Boston was not selected as the site of Amazon's second headquarters, the company moved into a 150,000 square foot office on Summer St and confirmed a plan to construct 430,000 square feet of office space and bring 2,000 employees to an 18-story office building in Seaport Square.

*Economic development activities such as these (with more on the way) have intensified the demand for housing within the City limits, especially as the desirability of City living in general has grown and the quality of Boston's urban environment in particular has improved in recent years and suggest that the housing demand pressures emanating from the urban core can be expected to continue for the foreseeable.*

*Largest Employers*

The following table lists the top ten largest employers in Boston as of the fall of 2018, which in the aggregate represents 87,912 jobs, or about 10.8% of all employment.

Employer	Jobs	Share of Total
Massachusetts General Hospital	17,529	2.2%
Brigham and Women's Hospital	12,178	1.5
Boston Children's Hospital	10,101	1.2
Boston University	9,992	1.2
Beth Israel Deaconess Medical Center	8,521	1.0
State Street Bank & Trust Company*	7,500	0.9
Boston Medical Center	5,716	0.7
Harvard University Graduate Schools	5,680	0.7
Northeastern University**	5,595	0.7
Fidelity Investments*	5,100	0.6
<b>Sum of Top 10 Employers</b>	<b>87,912</b>	<b>10.8</b>
<b>Total Boston Employment***</b>	<b>812,153</b>	

\* Employment numbers for these employers are current as of 2017. This is the most recent data available.  
 \*\* Northeastern's employment includes both Northeastern University and the Northeastern University Professional Advancement Network.  
 \*\*\* Boston's total payroll and non-payroll employment as of 2017.  
 Source: Bureau of Economic Analysis; American Hospital Association; National Center for Education Statistics; BPDA Research Division Analysis. Estimates reflect most recent available data.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 7

***Note that Northeastern University's Professional Advancement Network is now called Lifelong Learning Network. Also note that Northeastern is a major City employer with a ranking at #9.***

*Labor Force and Education*

Due to the growing size and increasing age of the population as well as the rising labor force participation of women, minorities, youth and the elderly, Boston's resident labor force steadily rose from 1980 to 2017. According to the Decennial censuses, Boston's population grew by 4.6% between 1980 and 2000, and another 4.8% between 2000 and 2010. Meanwhile, the resident labor force grew 11.9% between 1980 and 2000, and another 13.7% between 2000 and 2010.

According to 1-year ACS surveys, Boston's population grew 9.9% between 2010 and 2017 to 683,015, of which residents 409,910 were in the labor force and 381,602 were employed. The educational attainment of Boston residents, measured as the share of residents over the age of 25 with at least a bachelor's degree, also improved over the 1980 to 2000 period according to the Decennial Censuses from 20.3% to 35.6%. From 2010 to 2017 according to the 1-year ACS, this share grew even further from 35.6% to 48.2%. Improving educational attainment has supported the City's transition to a knowledge-based economy.

***This shift too has influenced the Boston housing markets, with higher, well-educated wage earners seeking scarce in-town housing opportunities. This trend has helped fuel price growth in the urban core, overwhelming the effect of significant supply additions made during recent years.***

	1980		1990		2000		2017	
	Persons	Percent	Persons	Percent	Persons	Percent	Persons	Percent
Fewer than nine years	54,932	16.6%	37,824	10.3%	34,321	9.1%	29,908	6.3%
9 to 12 years, no diploma	49,407	14.9	51,051	14.0	45,308	12.0	27,261	5.7
High school graduate (or GED)	115,787	35.0	97,233	26.6	90,568	24.0	101,571	21.4
Some college or Associates	43,451	13.2	69,889	19.1	73,125	19.4	86,991	18.3
Bachelors, Masters, or Prof.	67,073	20.3	109,711	30.0	134,252	35.6	229,083	48.2
<b>Total</b>	<b>330,650</b>	<b>100</b>	<b>365,708</b>	<b>100</b>	<b>377,574</b>	<b>100</b>	<b>474,814</b>	<b>100</b>

Note: GED stands for General Equivalency Diploma, which is equivalent to regular high school diploma and is earned for completing work for graduation after having left high school.

Source: U.S. Census Bureau, 1980-2000 Decennial Census reports, 2017 1-year American Community Survey.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 8

*Income, Wages, and Cost of Living*

Per capita personal income for Suffolk County was \$75,711 in 2017, 43.1% above the national per capita personal income of \$52,899, according to the BEA. According to the 2017 1-year ACS, Boston residents constitute approximately 85.6% of the county’s population. The summary table below shows the per capita income from 1980 through 2017 for Suffolk County, Metropolitan Boston, Massachusetts and the nation. Annual growth for per capita income in Suffolk County was about double the national average for Massachusetts, Metropolitan Boston and Suffolk County from 2000 to 2017. The city’s median household income (in fixed 2018 dollars) based on Census data from the ACS was \$63,533 in 2017.

Year	United States	Massachusetts	Metropolitan Boston <sup>(2)</sup>	Suffolk County <sup>(3)</sup>
1980.....	\$30,936	\$32,587	\$33,946	\$31,698
1990.....	\$37,649	\$44,354	\$47,441	\$47,179
2000.....	\$44,623	\$56,208	\$62,016	\$57,928
2010.....	\$46,688	\$61,115	\$66,923	\$74,370
2011.....	\$47,695	\$61,709	\$67,500	\$70,675
2012.....	\$48,757	\$62,724	\$68,459	\$68,980
2013.....	\$48,316	\$61,889	\$67,396	\$66,582
2014.....	\$49,877	\$63,579	\$69,321	\$66,845
2015.....	\$51,847	\$67,295	\$73,513	\$71,460
2016.....	\$52,133	\$68,198	\$74,549	\$74,776
2017.....	\$52,899	\$69,279	\$75,829	\$75,711

(1) The BEA revised its historic employment data by incorporating additional data sources and improving allocation methods, which resulted in revised income estimates for Boston from 2010 through 2016.

(2) The Boston-Cambridge-Newton MA-NH MSA Includes five counties in Massachusetts (Essex, Middlesex, Norfolk, Plymouth and Suffolk) and two counties in New Hampshire (Rockingham and Strafford).

(3) City residents constitute approximately 85.6% of Suffolk County’s population.

Source: Bureau of Economic Analysis, Personal Income Summary: Personal Income, Population and Per Capita Personal Income, December 2018.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 9

Payroll wages for jobs located in Boston totaled \$65.1 billion in 2017, resulting in an average annual payroll wage of \$101,103. Data from the BEA indicate that the average annual wage and salary disbursement per job for 1980 through 2017 by place of work has been consistently higher in Suffolk County than in Metropolitan Boston and the Commonwealth. In 2017, Suffolk County’s average wage per job (\$95,886) was 25.0% greater than wages in the Boston metropolitan area (\$76,693), and 36.7% greater than in the Commonwealth (\$70,124).

Year	United States	Massachusetts	Metropolitan Boston <sup>(2)</sup>	Suffolk County <sup>(3)</sup>
1980.....	\$42,654	\$41,216	\$42,944	\$47,109
1990.....	\$45,014	\$50,564	\$53,250	\$60,044
2000.....	\$51,114	\$63,102	\$68,665	\$80,877
2010.....	\$54,120	\$65,382	\$70,926	\$86,171
2011.....	\$53,938	\$65,419	\$71,011	\$85,575
2012.....	\$54,190	\$65,128	\$70,941	\$86,226
2013.....	\$53,956	\$65,122	\$70,813	\$86,048
2014.....	\$54,715	\$66,469	\$72,472	\$89,963
2015.....	\$56,313	\$69,081	\$75,381	\$93,219
2016.....	\$56,352	\$69,044	\$75,379	\$93,414
2017.....	\$57,000	\$70,124	\$76,693	\$95,886

(1) The BEA revised its historic employment data by incorporating additional data sources and improving allocation methods, which resulted in revised income estimates for Boston from 2010 through 2016.  
(2) The Boston-Cambridge-Newton MA-NH MSA Includes five counties in Massachusetts (Essex, Middlesex, Norfolk, Plymouth and Suffolk) and two counties in New Hampshire (Rockingham and Strafford).  
(2) Jobs in Boston constitute approximately 96% of jobs in Suffolk County.

Source: Bureau of Economic Analysis, Economic Profile: Average Wages and Salaries, December 2018.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 9

*These wage levels and the pace of income growth help to explain housing price trends, especially within the most competitive urban submarket locations. By way of illustration, at an average wage of \$96,000 – a one person household can support an unburdened rent (no more than a third of income toward rent) of over \$2,500 per month. A household occupied by two individuals, each earning an average Boston wage, can support rent of over \$5,000 per month.*

*Medical and Higher Educational Institutions*

Boston’s medical and educational institutions, are important components of its economy, providing employment opportunities for residents of the City and Metropolitan Boston. Expenditures by these institutions, as well as their employees, patients, students and visitors stimulate the City’s trade and service sectors.

There are twenty-one in-patient hospitals located within the City with a combined total of 6,108 beds as of 2018. The largest of these are Massachusetts General Hospital, Brigham and Women’s Hospital, Beth Israel Deaconess Medical Center, Boston Children’s Hospital, Tufts New England Medical Center and Boston Medical Center.

The City is also home to the medical, dental and public health schools of Harvard, Tufts and Boston University, and to 25 public neighborhood health clinics, as well as private health maintenance organizations and membership clinics.

For the 24th consecutive year, Boston received more National Institutes of Health (NIH) funding than any other city in the nation. Boston received a total of \$2.1 billion in NIH awards for fiscal year 2018, with eight organizations receiving over \$125 million each.

Boston is home to top universities such as Boston University, Northeastern University, and University of Massachusetts (UMass) Boston. As of the 2017-2018 academic year, data from the City of Boston's University Accountability Ordinance and Department of Neighborhood Development indicate that the City's universities and colleges had a combined enrollment of 147,689 full- and part-time students. This is an increase of close to 4,000 students since 2013 including the professional and graduate schools of Harvard and Tufts which are located in Boston but not MIT or undergraduate enrollment at Harvard or Tufts, whose principal campuses are located in Cambridge and Medford, respectively. Based on total graduate, undergraduate and professional school enrollment, Northeastern University enrolled the most students during the fall of 2017 at 30,538, followed by Boston University at 27,861. These numbers include all enrollees, including a substantial number participating in semesters or co-ops abroad.

Boston, with nearly 10% of the Commonwealth's population, has about a quarter of the statewide college student enrollment. According to the Department of Neighborhood Development, 1,106 dormitory beds were permitted, and 647 beds were completed in 2017. 624 fewer students were living in private- housing compared to 2016.

In total, 4,241 new beds were built between 2011 and 2017, accounting for 23% of the goal of 18,500 beds set out in the Housing a Changing City: Boston 2030 plan. Another 2,886 beds are under construction or soon to be under construction at Emerson, Emmanuel and Northeastern. The University of Massachusetts Boston opened its first on-campus housing in the fall of 2018; the privately operated dorm provides housing for 1,089 students at the formerly commuter college.

In 2018, the BPDA approved 1.2 million square feet of institutional development across the city. Additionally, 686,000 square feet are under construction and 1 million square feet were completed. These new projects primarily came from major educational and medical institutions.”

*While other sectors also contribute to the City's economy – none have had the magnitude of impact, nor the sustained influence of the City's medical and educational institutions. And beyond the direct market effects produced by their employees and customers, these institutions are responsible for inducing demand and growth in numerous other sectors including life sciences, IT, business services, finance, tourism, and real estate, all of which has fueled the demand for housing. The strength and resiliency of the institutional sector offers Boston the prospect of long term stability and economic growth and with it continued growth in the demand for housing.*

Later in this report, more current and more geographically granular information for the City of Boston as developed by ESRI, a nationally recognized econometric firm, has been used to inform the housing market analytics.

## City of Boston and NU Study Area Demography

### Population and Households

According to ESRI data for the City of Boston and the targeted neighborhoods surrounding Northeastern population and household numbers City-wide and in the NU Study Area have been increasing at a consistent 1.0%+ rate since 2010, a trend expected to continue over the next five years. Neighborhood population and household distributions have been and are expected to remain relatively unchanged, although the pace of growth in Roxbury and South End will be greater than experienced in either Fenway or Mission Hill over the next five-years.

### POPULATION AND HOUSEHOLD TRENDS AND FORECAST

<b>Population Trends</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
2010 Total Population	617,594	122,523	52,029	17,534	24,840	28,120
% of City Total	100%	19.8%	8.4%	2.8%	4.0%	4.6%
2018 Total Population	674,913	134,508	56,250	19,050	27,596	31,612
% of City Total	100%	19.9%	8.3%	2.8%	4.1%	4.7%
2023 Total Population	710,927	141,862	58,022	19,725	29,185	34,930
% of City Total	100%	20.0%	8.2%	2.8%	4.1%	4.9%
<b>Change</b>						
Total # Change 2010-2018	57,319	11,985	4,221	1,516	2,756	3,492
Total # Change 2018-2023	36,014	7,354	1,772	675	1,589	3,318
Annual # Change 2010-2018	7,165	1,498	528	190	345	437
Annual # Change 2018-2023	7,203	1,471	354	135	318	664
Annual % Change 2010-2018	1.2%	1.2%	1.0%	1.1%	1.4%	1.6%
Annual % Change 2018-2023	1.1%	1.1%	0.6%	0.7%	1.2%	2.1%

<b>Household Trends</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
2010 Total Households	252,699	47,068	18,381	5,732	9,815	13,140
% of City Total	100%	18.6%	7.3%	2.3%	3.9%	5.2%
2018 Total Households	273,647	50,948	19,621	6,050	10,790	14,487
% of City Total	100%	18.6%	7.2%	2.2%	3.9%	5.3%
2023 Total Households	288,098	53,948	20,505	6,233	11,382	15,828
% of City Total	100%	18.7%	7.1%	2.2%	4.0%	5.5%
<b>Change</b>						
Total # Change 2010-2018	20,948	3,880	1,240	318	975	1,347
Total # Change 2018-2023	14,451	3,000	884	183	592	1,341
Annual # Change 2010-2018	2,619	485	155	40	122	168
Annual # Change 2018-2023	2,890	600	177	37	118	268
Annual % Change 2010-2018	1.0%	1.0%	0.8%	0.7%	1.2%	1.3%

The expected growth pattern is directly related to land availability in these neighborhoods (Fenway and Mission Hill are more built-out than either the South End or Roxbury), as well as the economic factors and related pressures emanating from the core urban neighborhoods like Back Bay, Seaport and Downtown discussed in the prior section of this report.

### *Age Trends and Generational Distributions*

ESRI data shows that the populations in the City and NU Study area neighborhoods are trending slightly older since 2010, although both Fenway and Mission Hill are substantially younger than either the City overall or Roxbury or the South End which are both older on average than the City overall.

#### **AGE TRENDS AND FORECAST**

<b>Age Trends</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
2010 Median Age	31.0	24.9	23.0	23.5	33.2	34.2
% of City Total	100%	80.3%	74.2%	75.8%	107.1%	110.3%
2018 Median Age	32.3	25.9	23.2	23.9	34.2	35.1
% of City Total	100%	80.2%	71.8%	74.0%	105.9%	108.7%
2023 Median Age	33.2	26.7	23.4	24.1	35.3	35.2
% of City Total	100%	80.4%	70.5%	72.6%	106.3%	106.0%
<b>Change</b>						
Annual % Change 2010-2018	0.5%	0.5%	0.1%	0.2%	0.4%	0.3%
Annual % Change 2018-2023	0.6%	0.6%	0.2%	0.2%	0.6%	0.1%

We note that the age differential correlates directly with the concentration of young people (including students) in the Fenway and Mission Hill; and for the South End, also reflects the increasing effect of escalating housing prices and the level of income (increasingly only affordable to more mature households) needed to buy or rent in this location.

Apart from the median age trends, Boston remains a very young City, with nearly 60% of the 2018 population in the Millennial or younger cohorts – the highest concentration of young people of any major city in the country. And in the NU Study Area the Millennial cohorts dominate.

The City’s ability to attract and retain young people is critical to Boston’s economic future and remains a stated goal of both public policy makers and the private sector. By 2023, Millennials will still represent the largest share of City-wide population (32%), but Gen Z will rule the roost in the NU Study Area at 41% overall, with Fenway at 60%, Mission Hill at 51% and interestingly Roxbury and the South End more in line with the City average at 24% and 20% respectively.

### 2018 GENERATIONAL DISTRIBUTION

# Population by Generation	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2018 Generation Alpha Population (Born 2017 or Later)	13,580	1,935	308	255	673	699
2018 Generation Z Population (Born 1999 to 2016)	126,508	30,166	14,373	4,374	6,524	4,895
2018 Millennial Population (Born 1981 to 1998)	261,379	62,085	32,745	9,455	8,057	11,828
2018 Generation X Population (Born 1965 to 1980)	117,767	17,371	3,216	2,018	5,302	6,835
2018 Baby Boomer Population (Born 1946 to 1964)	114,086	16,968	3,702	2,223	5,454	5,589
2018 Silent & Greatest Generations Population (Born 1945/Earlier)	41,593	5,983	1,906	725	1,586	1,766
2018 Population by Generation Base	674,913	134,508	56,250	19,050	27,596	31,612

% Population by Generation	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2018 Generation Alpha Population (Born 2017 or Later)	2%	1%	1%	1%	2%	2%
2018 Generation Z Population (Born 1999 to 2016)	19%	22%	26%	23%	24%	15%
2018 Millennial Population (Born 1981 to 1998)	39%	46%	58%	50%	29%	37%
2018 Generation X Population (Born 1965 to 1980)	17%	13%	6%	11%	19%	22%
2018 Baby Boomer Population (Born 1946 to 1964)	17%	13%	7%	12%	20%	18%
2018 Silent & Greatest Generations Population (Born 1945/Earlier)	6%	4%	3%	4%	6%	6%

### 2023 GENERATIONAL DISTRIBUTION

# Population by Generation	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2023 Generation Alpha Population (Born 2017 or Later)	46,660	6,732	861	932	2,613	2,326
2023 Generation Z Population (Born 1999 to 2016)	180,870	58,780	34,849	10,007	6,946	6,978
2023 Millennial Population (Born 1981 to 1998)	230,946	38,643	14,024	4,098	8,099	12,422
2023 Generation X Population (Born 1965 to 1980)	115,550	17,098	2,946	2,048	5,484	6,620
2023 Baby Boomer Population (Born 1946 to 1964)	107,373	16,512	4,021	2,145	5,015	5,331
2023 Silent & Greatest Generations Population (Born 1945/Earlier)	29,528	4,097	1,321	495	1,028	1,253
2023 Population by Generation Base	710,927	141,862	58,022	19,725	29,185	34,930

% Population by Generation	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2023 Generation Alpha Population (Born 2017 or Later)	7%	5%	1%	5%	9%	7%
2023 Generation Z Population (Born 1999 to 2016)	25%	41%	60%	51%	24%	20%
2023 Millennial Population (Born 1981 to 1998)	32%	27%	24%	21%	28%	36%
2023 Generation X Population (Born 1965 to 1980)	16%	12%	5%	10%	19%	19%
2023 Baby Boomer Population (Born 1946 to 1964)	15%	12%	7%	11%	17%	15%
2023 Silent & Greatest Generations Population (Born 1945/Earlier)	4%	3%	2%	3%	4%	4%

### CHANGE IN POPULATION BY GENERATION 2018-2023

% Change in Population by Generation 2018-2023	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Generation Alpha Population (Born 2017 or Later)	244%	248%	180%	265%	288%	233%
Generation Z Population (Born 1999 to 2016)	43%	95%	142%	129%	6%	43%
Millennial Population (Born 1981 to 1998)	-12%	-38%	-57%	-57%	1%	5%
Generation X Population (Born 1965 to 1980)	-2%	-2%	-8%	1%	3%	-3%
Baby Boomer Population (Born 1946 to 1964)	-6%	-3%	9%	-4%	-8%	-5%
Silent & Greatest Generations Population (Born 1945/Earlier)	-29%	-32%	-31%	-32%	-35%	-29%

ESRI data shows that there are just over 49,000 18-24 year old's residing in the neighborhoods surrounding Northeastern (including residents of both dormitories and off-campus housing). Fifteen colleges and universities are located within the study area accounting for roughly 55,000 undergraduate enrollees as of the City's latest UAO report. Among the largest are Boston University, Northeastern, Emerson, Emmanuel, Wentworth, Simmons, Berklee, MA College of Art, MA College of Pharmacy, etc.

The data also shows that the undergraduate aged population and the number of households headed by persons in this age cohort have both been shrinking City-wide since 2010, a pattern expected to continue through 2023. Very minor increases in this age cohort are expected in the NU Study Area neighborhoods (only 263 additional people) and in proportion to the City-wide figures, the study area share is expected to remain stable at roughly 42% of the 18 to 24 year population and 38% of households headed by 18 to 24 year old's.

### UNDERGRADUATE AGED POPULATION AND HOUSEHOLD TRENDS

<b>Undergrad Aged Population (Aged 18-24)</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
2010	120,011	47,515	32,200	8,304	3,211	3,800
% of City Total	100%	40%	27%	7%	3%	3%
2018	119,283	49,147	33,601	8,506	3,166	3,874
% of City Total	100%	41%	28%	7%	3%	3%
2023	117,453	49,410	33,739	8,495	3,023	4,153
% of City Total	100%	42%	29%	7%	3%	4%
<b>Change</b>						
Total # Change 2010-2018	(728)	1,632	1,401	202	(45)	74
Total # Change 2018-2023	(1,830)	263	138	(11)	(143)	279
Annual # Change 2010-2018	(91)	204	175	25	(6)	9
Annual # Change 2018-2023	(366)	53	28	(2)	(29)	56
Annual % Change 2010-2018	-0.1%	0.4%	0.5%	0.3%	-0.2%	0.2%
Annual % Change 2018-2023	-0.3%	0.1%	0.1%	0.0%	-0.9%	1.4%

<b>Undergrad Households (Head-Aged 15-24)</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
2010 Households - Householder Age 15-24	25,556	9,114	6,025	1,573	504	1,012
% of City Total	100%	36%	24%	6%	2%	4%
2018 Households - Householder Age 15-24	23,963	8,809	5,884	1,520	448	957
% of City Total	100%	37%	25%	6%	2%	4%
2023 Households - Householder Age 15-24	23,304	8,749	5,875	1,479	418	977
% of City Total	100%	38%	25%	6%	2%	4%
<b>Change</b>						
Total # Change 2010-2018	(1,593)	(305)	(141)	(53)	(56)	(55)
Total # Change 2018-2023	(659)	(60)	(9)	(41)	(30)	20
Annual # Change 2010-2018	(199)	(38)	(18)	(7)	(7)	(7)
Annual # Change 2018-2023	(132)	(12)	(2)	(8)	(6)	4
Annual % Change 2010-2018	-0.8%	-0.4%	-0.3%	-0.4%	-1.4%	-0.7%
Annual % Change 2018-2023	-0.6%	-0.1%	0.0%	-0.5%	-1.3%	0.4%

Conversely, the graduate aged population – aged 25 to 34 - has been growing City-wide since 2010, a pattern expected to continue through 2023. Minor growth is expected in the NU Study Area neighborhoods (only 53 additional persons expected in this age cohort). This population has not been the focus of our study as many/most are working, are raising young families or are more permanently a part of the local market than transient undergrads.

### GRADUATE AGED POPULATION AND HOUSEHOLD TRENDS

<b>Grad Aged Population (Aged 25-34)</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
2010	85,370	14,918	6,849	1,588	2,330	4,150
% of City Total	100%	17%	8%	2%	3%	5%
2018	95,790	17,361	8,087	2,017	2,879	4,378
% of City Total	100%	18%	8%	2%	3%	5%
2023	97,370	18,161	8,249	2,030	2,904	4,978
% of City Total	100%	19%	8%	2%	3%	5%
<b>Change</b>						
Total # Change 2010-2018	10,420	2,443	1,238	429	549	228
Total # Change 2018-2023	1,580	800	162	13	25	600
Annual # Change 2010-2018	1,303	305	155	54	69	29
Annual # Change 2018-2023	316	160	32	3	5	120
Annual % Change 2010-2018	1.5%	2.0%	2.3%	3.4%	2.9%	0.7%
Annual % Change 2018-2023	0.3%	0.9%	0.4%	0.1%	0.2%	2.7%

<b>Grad Households (Head-Aged 25-34)</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
2010 Households - Householder Age 25-34	63,458	12,077	5,873	1,048	1,601	3,555
% of City Total	100%	19%	9%	2%	3%	6%
2018 Households - Householder Age 25-34	68,970	13,407	6,607	1,212	1,892	3,696
% of City Total	100%	19%	10%	2%	3%	5%
2023 Households - Householder Age 25-34	71,763	14,145	6,868	1,227	1,957	4,093
% of City Total	100%	20%	10%	2%	3%	6%
<b>Change</b>						
Total # Change 2010-2018	5,512	1,330	734	164	291	141
Total # Change 2018-2023	2,793	738	261	15	65	397
Annual # Change 2010-2018	689	166	92	21	36	18
Annual # Change 2018-2023	559	148	52	3	13	79
Annual % Change 2010-2018	1.1%	1.4%	1.6%	2.0%	2.3%	0.5%
Annual % Change 2018-2023	0.8%	1.1%	0.8%	0.2%	0.7%	2.1%

To more clearly parse out students from the age cohorts referenced by the prior discussion, we refer to the ACS Surveys for 2012-2016 which show that 39,345 or over 30% of the NU Study Area population represents undergraduate college enrollment and another 8,351, or 7% represents grad school enrollment.

**POPULATION ENROLLED UNDERGRADUATE AND GRADUATE COLLEGE PROGRAMS**

<b>Population Enrolled in College ACS 2012-2016</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
Population Enrolled in Undergrad College	78,017	39,345	27,969	6,574	2,468	2,334
% of City Total	100%	50%	36%	8%	3%	3%
Population Enrolled in UG College: Public	21,642	4,998	1,524	1,161	1,567	746
Population Enrolled in UG College: Private	56,375	34,348	26,445	5,414	901	1,588
Population Enrolled in Grad/Professional School	29,879	8,351	4,135	1,726	699	1,791
% of City Total	100%	28%	14%	6%	2%	6%
Population Enrolled in Public Grad School	5,229	926	336	179	243	168
Population Enrolled in Private Grad School	24,650	7,424	3,799	1,546	456	1,623

<b>% Total Population Enrolled in College ACS 2012-2016</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
Population Enrolled in Undergrad College	12%	32%	55%	37%	10%	8%
Population Enrolled in College: Public	3%	4%	3%	6%	6%	2%
Population Enrolled in College: Private	9%	28%	52%	30%	3%	5%
Population Enrolled in Grad School	5%	7%	8%	10%	3%	6%
Population Enrolled in Public Grad/Professional	1%	1%	1%	1%	1%	1%
Population Enrolled in Private Grad/Professional	4%	6%	7%	9%	2%	5%

The greatest concentration of enrolled undergraduate students is represented by the Fenway (55%), followed by Mission Hill (37%), Roxbury (10%) and the South End (8%). As indicated by the map on the following page, these figures include students housed on other campuses located in these neighborhoods.

### CAMPUSES IN THE SURROUNDING NEIGHBORHOODS



As another measure of the local student population we also looked at the group quartered population in the City and target submarkets. Based on the US Census definition, a group quarters is a place where people live or stay, in a group living arrangement, that is owned or managed by an entity or organization providing housing and/or services for the residents. This is not a typical household-type living arrangement. These services may include custodial or medical care as well as other types of assistance, and residency is commonly restricted to those receiving these services. People living in group quarters are usually not related to each other. Group quarters include such places as college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, and workers' dormitories. From 2010 to 2018, the City has seen an increase of 3,330 people aged 18-30 in group quartered residences – largely assumed to be dormitory housing.

Over 60% of the growth since 2010 in this group quartered population occurred in the NU Study area and most of the Study Area increase occurred in the Fenway 77%. Of these, over 70% represent students in the growing supply of college provided or managed housing.

### GROUP QUARTERED POPULATION

Group Quartered Population	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2010 Population in Group Quarters	46,214	28,171	21,632	2,992	1,080	2,467
% of City Total	100%	61%	47%	6%	2%	5%
2018 Group Quarters Population	49,544	30,203	23,193	3,215	1,214	2,581
% of City Total	100%	61%	47%	6%	2%	5%
<b>Change</b>						
Total # Change 2010-2018	3,330	2,032	1,561	223	134	114
Annual # Change 2010-2018	416	254	195	28	17	14
Annual % Change 2010-2018	0.9%	0.9%	0.9%	0.9%	1.6%	0.6%

### POPULATION HOUSED IN COLLEGE STUDENT HOUSING

Population Housed in College Student Housing	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2010 Population in College Student Housing	33,377	24,395	21,111	2,749	0	535
2010 % of Group Quartered Population	72.2%	86.6%	97.6%	91.9%	0.0%	21.7%
2018 Population in College Student Housing	44,189	26,972	20,579	2,833	1,214	2,346
2018 % of Group Quartered Population	89.2%	89.3%	88.7%	88.1%	100.0%	90.9%
<b>Change</b>						
Total # Change 2010-2018	10,812	2,577	(532)	84	1,214	1,811
Annual # Change 2010-2018	1,352	322	(67)	11	152	226
Annual % Change 2010-2018	4.0%	1.3%	-0.3%	0.4%	N/A	42.3%

*Per Capita and Household Income*

According to ESRI data, incomes continue to trend higher across the City at annual rates that exceed the pace of inflation, but, as described in the earlier economic analysis, not the pace of rental or for-sale price growth.

While slower growing, incomes are substantially higher in the South End by all measures, a reflection of the demographic shifts that have been occurring here since the 1990's. Conversely, the pace of income growth in Roxbury, Fenway and Mission is faster, but all these neighborhoods begin with incomes well below the City-wide levels. For both the Fenway and Mission Hill neighborhoods, this differential is strongly correlated to the presence of young people, including students who are discussed on the following page.

**INCOME TRENDS AND FORECAST**

<b>Income Trends</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
2018 Median Household Income	\$60,188	\$41,711	\$37,313	\$33,642	\$37,073	\$68,093
2023 Median Household Income	\$72,685	\$49,138	\$44,890	\$37,587	\$42,775	\$77,319
Annual % Change 2018-2023	4.2%	3.6%	4.1%	2.3%	3.1%	2.7%
2018 Average Household Income	\$93,770	\$77,950	\$69,793	\$56,997	\$55,184	\$114,705
2023 Average Household Income	\$110,057	\$90,291	\$81,555	\$66,289	\$66,626	\$128,078
Annual % Change 2018-2023	3.5%	3.2%	3.4%	3.3%	4.1%	2.3%
2018 Per Capita Income	\$38,933	\$31,961	\$28,256	\$19,953	\$22,477	\$54,070
2023 Per Capita Income	\$45,466	\$36,646	\$32,613	\$22,735	\$26,836	\$59,398
Annual % Change 2018-2023	3.4%	2.9%	3.1%	2.8%	3.9%	2.0%

In 2018, nearly 40% of undergrad-aged households earned under \$25K City-wide. The percent of low earners was much more pronounced in the NU Study Area, no doubt at least in part due to the presence of student households with minimal independent earnings. Note that the nature of these very young households acts as an anchor on income growth resulting in only modest changes in the low earner concentrations by 2023.

### UNDERGRADUATE AGED HOUSEHOLD INCOME TRENDS

2018 Undergrad Households (Head-Aged 15-24)	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Household Income less than \$15,000	6,501	3,077	2,311	396	120	250
Household Income \$15,000-\$24,999	2,561	1,096	730	189	64	113
Household Income \$25,000-\$34,999	2,420	1,032	688	207	50	87
Household Income \$35,000-\$49,999	3,206	1,067	620	248	84	115
Household Income \$50,000-\$74,999	3,568	930	586	166	67	111
Household Income \$75,000-\$99,999	1,944	536	303	121	32	80
Household Income \$100,000-\$149,999	1,943	581	352	116	22	91
Household Income \$150,000-\$199,999	884	189	105	35	5	44
Household Income \$200,000+	936	301	189	42	4	66
2018 Median Household Income	\$36,760	\$26,771	\$23,159	\$33,033	\$32,530	\$37,923
2018 Average Household Income	\$58,483	\$47,545	\$43,534	\$50,048	\$42,271	\$70,694

2023 Undergrad Households (Head-Aged 15-24)	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Household Income less than \$15,000	5,796	2,809	2,120	352	104	233
Household Income \$15,000-\$24,999	2,224	1,009	680	166	55	108
Household Income \$25,000-\$34,999	2,102	980	666	197	40	77
Household Income \$35,000-\$49,999	3,005	1,082	637	250	74	121
Household Income \$50,000-\$74,999	3,466	957	623	150	70	114
Household Income \$75,000-\$99,999	2,132	599	349	127	34	89
Household Income \$100,000-\$149,999	2,371	726	451	144	27	104
Household Income \$150,000-\$199,999	1,047	226	125	43	8	50
Household Income \$200,000+	1,161	361	224	50	6	81
2023 Median Household Income	\$41,489	\$29,986	\$26,627	\$36,042	\$36,444	\$42,626
2023 Average Household Income	\$69,379	\$55,825	\$51,243	\$58,057	\$50,531	\$82,260

In 2018, roughly 35% of grad-aged households (aged 25 to 34) earned below \$50K City-wide. The percent of moderate to low income earners was higher in the NU Study Area (44%), no doubt at least in part due to the presence of student households with minimal independent earnings. Note that the nature of these young households acts as an anchor on income growth resulting in only modest changes in the low earner concentrations by 2023.

**GRADUATE AGED HOUSEHOLD INCOME TRENDS**

2018 Grad Households (Head-Aged 25-34)	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Household Income less than \$15,000	7,852	2,485	1,468	235	334	448
Household Income \$15,000-\$24,999	4,166	1,047	495	123	191	238
Household Income \$25,000-\$34,999	4,760	1,039	484	129	199	227
Household Income \$35,000-\$49,999	7,325	1,381	629	150	285	317
Household Income \$50,000-\$74,999	10,235	1,743	944	152	293	354
Household Income \$75,000-\$99,999	9,085	1,500	703	133	225	439
Household Income \$100,000-\$149,999	13,067	2,171	980	161	236	794
Household Income \$150,000-\$199,999	6,117	896	388	73	73	362
Household Income \$200,000+	6,363	1,145	516	56	56	517
2018 Median Household Income	\$75,302	\$58,780	\$54,534	\$46,119	\$45,794	\$88,442
2018 Average Household Income	\$99,602	\$87,209	\$80,748	\$68,388	\$62,779	\$117,438

2023 Grad Households (Head-Aged 25-34)	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Household Income less than \$15,000	6,733	2,229	1,311	202	293	423
Household Income \$15,000-\$24,999	3,511	970	455	109	176	230
Household Income \$25,000-\$34,999	4,116	973	447	121	183	222
Household Income \$35,000-\$49,999	6,696	1,390	621	154	273	342
Household Income \$50,000-\$74,999	9,921	1,824	962	155	309	398
Household Income \$75,000-\$99,999	9,610	1,644	790	140	244	470
Household Income \$100,000-\$149,999	15,714	2,619	1,199	194	300	926
Household Income \$150,000-\$199,999	7,303	1,059	444	83	104	428
Household Income \$200,000+	8,159	1,437	639	69	75	654
2023 Median Household Income	\$86,027	\$69,445	\$63,541	\$53,317	\$53,127	\$97,436
2023 Average Household Income	\$116,675	\$101,231	\$94,104	\$79,450	\$74,648	\$132,431

*Household Types and Sizes*

Based on the Federal Census (2010), over half (54%) of all Boston households were Non-Family households - defined as either single person households or constellations of unrelated individuals living together.

As shown in the tables that follow, Non-Family households tend to be smaller, generally averaging 1.5 persons per household v. 3.0 persons per household for Family households for Boston and the NU Study Area.

### NON-FAMILY HOUSEHOLD SIZES

<b>% Non-Family Households</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
<b>% Non-Family Households</b>	54%	66%	82%	63%	42%	64%
% Living Alone	69%	68%	67%	53%	82%	72%
% 2 People	22%	22%	25%	17%	13%	23%
% 3 People	6%	6%	6%	13%	3%	3%
% 4 People	2%	3%	2%	13%	2%	1%
% 5 People	1%	1%	0%	3%	1%	0%
% 6 People	0%	0%	0%	1%	0%	0%
% 7+ People	0%	0%	0%	0%	0%	0%
Average Size of Non-Family Households	1.5	1.5	1.5	2.1	1.3	1.4

### FAMILY HOUSEHOLD SIZES

<b>% Family Households</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
<b>% Family Households</b>	46%	34%	18%	37%	58%	36%
% 2 People	41%	47%	68%	40%	35%	49%
% 3 People	25%	25%	20%	28%	28%	24%
% 4 People	18%	16%	9%	18%	19%	17%
% 5 People	9%	7%	3%	7%	10%	6%
% 6 People	4%	3%	1%	4%	4%	2%
% 7+ People	3%	2%	0%	3%	4%	2%
Average Size of Family Households	3.2	3.0	2.5	3.3	3.3	3.0

In the neighborhoods surrounding NU, fully 66% of households are Non-Family. Of these, 68% represent individuals living alone, 22% are 2-person households and 10% represent larger roommate constellations (3 unrelated persons or more living together).

The greatest proportion of Non-Family households is found in the Fenway (80%) and the greatest proportion of Family households is found in Roxbury (58%). Also note that within the Non-Family category, single person households dominate, (these individuals generally occupying studio and one-bedroom apartments and condominiums) representing 82% of non-family households in Roxbury, 72% in the South End, 67% in the Fenway, and 53% in Mission Hill.

The largest Non-Family clusters (households with 3+ persons) are most dominant in Mission Hill (30% of households) where the stock includes a higher proportion of single family dwellings and larger multi-bedroom units. This compares with the Fenway at 9% which is on par with the City-wide average and the South End and Roxbury at 5% and 6% respectively where smaller unit sizes predominate. Note that this pattern yields a higher non-family household size for Mission Hill (2.1) than for other NU Study Area neighborhoods (1.5).

## HOUSING MARKET SUPPLY ANALYSIS

### Metro Area Rental Housing Market Trends

#### *Overview*

According to the 4<sup>th</sup> Quarter 2018 regional Boston/Providence Apartment Market Report produced by RealPage, Inc.:

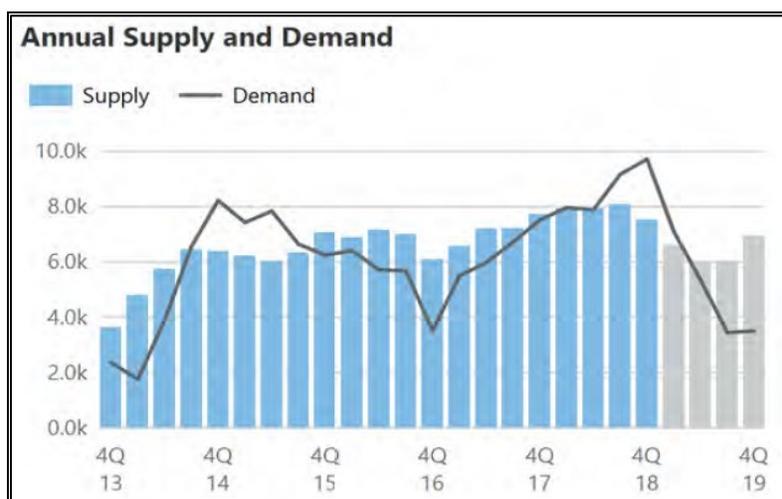
“With a strong local economy and favorable demographic characteristics, structural demand drivers remain solid in the Boston/Providence apartment market. Apartment developers took note of the region’s strong revenue growth potential and high liquidity, as construction activity over the past five years has surpassed long-term highs. Apartment demand has largely kept pace with new supply. As a result, apartment fundamentals have remained firm. Development has weighed on performances among top-end product and in high-supply submarkets, but the impact hasn’t been severe, as new units have been absorbed fairly quickly.... [Occupancy has remained high overall and recent] rent growth has been mostly moderate.... The key question for Boston/Providence going forward will be how the market reacts to persistently elevated supply volumes. Overall inventory expansion should remain manageable, as construction activity has begun to spread out from the downtown and urban-centric submarkets... [and] coming in areas with strong demand drivers.”

The Boston/Providence market is expected “...to perform in line with or just behind the U.S. norm ... [which means] rent growth of 3% to 4%”. The area “is being supported by a large and growing population of 20- to 34-year-olds. Furthermore, Boston/Providence is one of the few markets which have seen income growth keep pace with rent growth.... [and] a stable economy limits downside risk.”

#### *Supply/Demand*

Metropolitan Boston’s markets supply has remained elevated by local standards over the past five years, with annual completions totaling roughly 4,800 to 8,100 units. Inventory expanded at an annual rate of roughly 1% to 2% over that time. Boston added fully 7,523 units in 2018. Overall apartment stock is set to grow another 1.8% with the completion of roughly 6,900 units over the next year. New supply has been concentrated in Boston’s urban core; however future deliveries are likely to be more spread out geographically. Identified projects and permit volumes suggest that supply should remain elevated at the metro level for the foreseeable future.

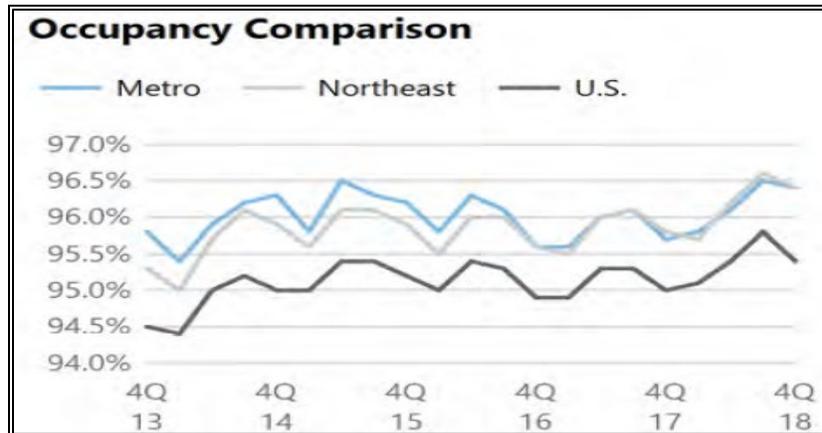
Demand is characterized as remaining mostly moderate-to-solid, with annual absorption of about 5,700 to 9,200 units over much of the past five years. Comparatively, the 10-year average is around 4,900 units, and in 2018 it was at a reported high of 9,715 units. Demand appeared strongest across Class A units. Among submarkets, it has been strongest in the high-supply downtown Boston area over the past few years, while spotty in the suburbs (with some exceptions having strong performance). Going forward, market-level demand is expected to moderate from the recent high levels but remain above the long-term average.



Source: RealPage, Inc.

### Occupancy

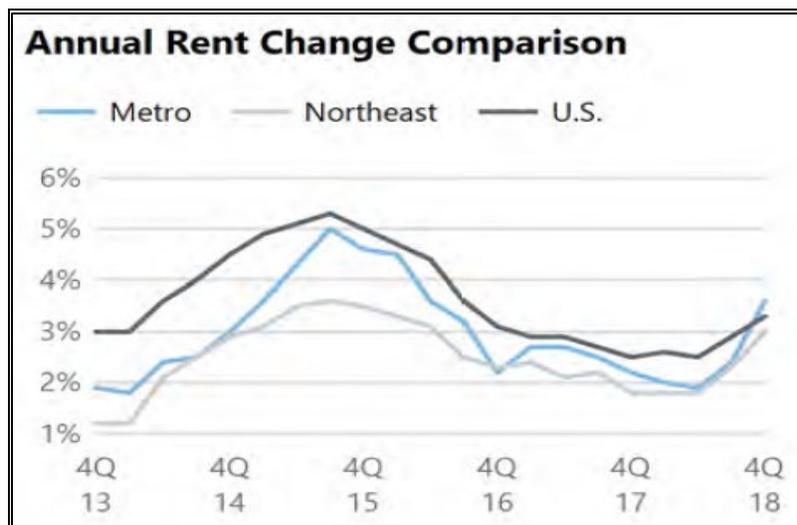
As demand has essentially traced or topped supply, the metro Boston apartment market has remained tight, with occupancy averaging 96% throughout the current cycle. In 4<sup>th</sup> Quarter 2018 metro-wide occupancy was at 96.4%, up 0.7 points year-over-year. Strength has been concentrated in the more affordable Class C product, which doesn't compete with new supply. Class A product has lagged somewhat under high supply volumes, with the Intown Boston and Cambridge/Somerville submarkets in particular having faced elevated supply, though these submarkets and Class A overall have remained essentially full in recent quarters. Going forward the metro occupancy is anticipated to remain around 95% to 96%.



Source: RealPage, Inc.

### Rents

Rent growth in metro Boston has remained in moderate-to-solid territory, with annual increases ranging from roughly 2% to 4.0% during much of the past five years. In 2018, rent growth measured 3.6%. This most recent measurement was above the average for the U.S. (3.3%) and the Northeast region norm (3.0%). Rent change performances in Boston have generally been driven by Class B and C product over the past few years, while Class A has lagged the metro average under elevated supply volumes. Meanwhile, high-supply submarkets have mostly struggled for rent momentum, as performances have remained volatile throughout much of the new supply wave. Most suburban areas have seen increases in line with the market norm. Similar trends are expected to continue over the next year, with rent growth projected in the 3% to 4% range longer term.



Source: RealPage, Inc.

## City of Boston and NU Study Area Rental Housing Market Trends

### *Housing Supply Trends*

Net Housing supply for the City of Boston has grown by over 20,000 units since 2010, an average annual increase of over 2,600 units per year for the last 8 years. By 2023, another 14,000+ units are forecast, reflecting an accelerated pace of over 2,800 units per year.

### HOUSING SUPPLY TRENDS

Total Housing Units	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2010 Total Housing Units	272,481	49,983	19,350	6,021	10,787	13,825
2018 Total Housing Units	293,393	53,908	20,650	6,401	11,791	15,066
2023 Total Housing Units	307,459	57,049	21,611	6,615	12,408	16,415
Total # Change 2010-2018	20,912	3,925	1,300	380	1,004	1,241
Total # Change 2018-2023	14,066	3,141	961	214	617	1,349
Annual # Change 2010-2018	2,614	491	163	48	126	155
Annual # Change 2018-2023	2,813	628	192	43	123	270
Annual % Change 2010-2018	1.0%	1.0%	0.8%	0.8%	1.2%	1.1%
Annual % Change 2018-2023	1.0%	1.2%	0.9%	0.7%	1.0%	1.8%

The pace of growth for the NU Study Area is generally similar - past and future, although there is neighborhood-specific variation with slower growth expected going forward in Mission Hill and Roxbury and faster growth in the South End. Fenway is on pace to match the City's average growth rate.

### *Housing Vacancy*

No major shifts in occupancy trends are expected - with the markets expected to move toward normative structural levels - 95%.

### HOUSING VACANCY TRENDS

% Vacancy Trend	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2010 Vacancy %	7%	6%	5%	5%	9%	5%
2018 Vacancy %	7%	5%	5%	5%	8%	4%
2023 Vacancy %	6%	5%	5%	6%	8%	4%

*Housing Supply Characteristics*

According to the most recent American Community Survey, nearly 50,000 (18%) of all Boston housing units are located within the NU Study area neighborhoods. City-wide, 18% of units are located within single family structures, as compared with only 9% for the NU Study area.

**HOUSING SUPPLY – BUILDING TYPES**

<b>Housing Supply Features</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
2012-2016 ACS Total Housing Units	281,417	49,973	17,835	5,797	11,664	14,677
% Total Supply	100%	18%	6%	2%	4%	5%

<b># Units by Building Type</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
1 Detached Unit in Structure	34,363	1,208	135	132	687	254
1 Attached Unit in Structure	17,902	3,429	332	641	1,615	841
2 Units in Structure	37,476	2,949	133	411	1,520	885
3 or 4 Units in Structure	69,692	9,978	1,128	1,514	3,811	3,525
5 to 9 Units in Structure	31,468	7,384	2,469	641	1,112	3,162
10 to 19 Units in Structure	22,980	5,494	2,905	377	808	1,404
20 to 49 Units in Structure	26,665	9,023	5,682	733	1,033	1,575
50 or More Units in Structure	40,363	10,479	5,030	1,349	1,079	3,021
Mobile Homes	347	25	16	0	0	11
Boat/RV/Van/etc.	161	5	5	0	0	0

<b>% Units by Building Type</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
1 Detached Unit in Structure	12%	2%	1%	2%	6%	2%
1 Attached Unit in Structure	6%	7%	2%	11%	14%	6%
2 Units in Structure	13%	6%	1%	7%	13%	6%
3 or 4 Units in Structure	25%	20%	6%	26%	33%	24%
5 to 9 Units in Structure	11%	15%	14%	11%	10%	22%
10 to 19 Units in Structure	8%	11%	16%	7%	7%	10%
20 to 49 Units in Structure	9%	18%	32%	13%	9%	11%
50 or More Units in Structure	14%	21%	28%	23%	9%	21%
Mobile Homes	0%	0%	0%	0%	0%	0%
Boat/RV/Van/etc.	0%	0%	0%	0%	0%	0%

While the absolute numbers are small, both Roxbury and Mission Hill have larger distributions in the single family categories than either the South End or Fenway. Fully 38% of City stock is concentrated in 2 and 3 family structures as compared with 46% in Roxbury, 33% in Mission Hill, 30% in the South End and just 7% in the Fenway.

Small and larger multi-family buildings represent 43% of the City stock as compared with 90% in Fenway, 62% in the South End, 53% in Mission Hill and 35% in Roxbury. Note that this land use pattern is a direct result of historically higher unit rents, sale prices and land values associated with locations closest to the downtown core.

As indicated in the table below, while substantial new supply has been added in recent years, the recent ACS survey shows that the vast majority of all Boston housing units (nearly 75%) are over a half century old, a fact belies a growing mismatch between the modern housing typologies and standards of the current market and the current stock.

### HOUSING SUPPLY – UNITS BUILT BY DATE

# Units by Date Built	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Units Built in 2014 or Later	1,426	317	78	0	60	179
Units Built in 2010-2013	4,146	728	9	58	465	196
Units Built in 2000-2009	18,661	3,991	977	465	1,294	1,255
Units Built in 1990-1999	10,809	2,838	741	674	678	745
Units Built in 1980-1989	17,531	3,292	1,612	464	680	536
Units Built in 1970-1979	21,881	4,552	2,010	653	959	930
Units Built in 1960-1969	22,721	4,484	1,483	915	1,035	1,051
Units Built in 1950-1959	20,248	3,009	1,195	556	454	804
Units Built in 1940-1949	16,393	2,641	1,343	227	567	504
Units Built in 1939 or Earlier	147,601	24,118	8,387	1,783	5,471	8,477
2012-2016 ACS Median Year Structure	1939	1943	1944	1964	1946	1940

The median age of structures City-wide is 1939 as compared with 1964 for Mission Hill, 1946 for Roxbury, 1944 for Fenway, and 1940 for the South End.

% Units by Date Built	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Units Built in 2014 or Later	1%	1%	0%	0%	1%	1%
Units Built in 2010-2013	1%	1%	0%	1%	4%	1%
Units Built in 2000-2009	7%	8%	5%	8%	11%	9%
Units Built in 1990-1999	4%	6%	4%	12%	6%	5%
Units Built in 1980-1989	6%	7%	9%	8%	6%	4%
Units Built in 1970-1979	8%	9%	11%	11%	8%	6%
Units Built in 1960-1969	8%	9%	8%	16%	9%	7%
Units Built in 1950-1959	7%	6%	7%	10%	4%	5%
Units Built in 1940-1949	6%	5%	8%	4%	5%	3%
Units Built in 1939 or Earlier	52%	48%	47%	31%	47%	58%

Fully 60% of units in the NU Study area are of similar age and only 10% are newly built - after 2000 (note that it is unclear how major rehabs are being treated by the ACS Survey).

Also noteworthy in the ACS survey is the level of turnover in housing ownership and occupancy in the Boston markets. Most (60%) of current owner occupants in the City of Boston moved into their homes in the period since 2000 and just under half of these since 2010. Only 3% had moved in since 2015.

An even greater proportion (74%) of current owner occupants in the NU Study Area moved into their homes in the period since 2000 and just over half of these since 2010 – reflecting the generally higher transiency of these neighborhoods. That said, only 4% had moved in since 2015.

### *Housing Tenure*

#### **HOUSING TENURE TRENDS**

<b>% Owner Occupied Housing Trends</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
2010 Owner-occupied %	31%	18%	12%	11%	21%	29%
2018 Owner Occupied %	32%	19%	12%	11%	22%	29%
2023 Owner Occupied %	33%	20%	13%	12%	24%	29%

<b>% Renter Occupied Housing Trends</b>	<b>Boston-City</b>	<b>NU Area</b>	<b>Fenway</b>	<b>Mission Hill</b>	<b>Roxbury</b>	<b>South End</b>
2010 Renter-occupied %	61%	76%	83%	85%	70%	66%
2018 Renter Occupied %	62%	76%	83%	83%	70%	67%
2023 Renter Occupied %	61%	75%	82%	82%	68%	67%

Consistent with the nature of forecasted housing market demand, which will continue to be dominated by younger, single person and non-family households for the foreseeable future, the distribution between owner and renter occupied households is expected to be stable over the next five years.

Note that the highest rates of homeownership are evident in the South End where incomes are high enough to support the price of a purchase and in Roxbury where there is less multi-family stock and more, older, legacy ownership.

The lowest rates of homeownership are in Mission Hill where the stock is a less well matched to ownership demand by today’s smaller households, and in the Fenway where multi-family stock suitable for single person occupancy predominates.

Of Owner-occupied units City-wide, College Age households occupy about 16% of the total; and of course, most of these are older, grad age. This % compares with 24% for the NU Study Area, 35% for the Fenway, 16% for Mission Hill, 11% for Roxbury and 25% for the South End. Note that fully 10% of owner-occupants in the Fenway represent undergrad aged occupants, no doubt a function of parents buying condo units for students in nearby schools.

### OWNER OCCUPANCY BY AGE OF HEAD OF HOUSEHOLD

% College Aged Owner Occupied	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Undergrad Aged Householder (Aged 15-24)	1%	4%	10%	2%	1%	2%
Grad Aged Householder (Aged 25-34)	15%	20%	25%	14%	10%	23%
Householder Age 35-44	20%	23%	20%	21%	20%	28%
Householder Age 45-54	21%	22%	16%	24%	24%	23%
Householder Age 55-64	20%	17%	15%	19%	22%	15%
Householder Age 65-74	12%	9%	9%	14%	12%	7%
Householder Age 75-84	7%	4%	3%	5%	8%	2%
Householder Age 85+	3%	1%	1%	2%	3%	0%

Of Renter-occupied units City-wide, College Age households occupy about 45% of the total; and most of these are older (30%), grad age. This % compares with 50% for the NU Study Area, 69% for the Fenway, 49% for Mission Hill, 25% for Roxbury and 39% for the South End. Note that fully 36% and 31% of renter-occupants in Fenway and Mission Hill respectively represent undergrad aged occupants while undergrad aged renter households comprise under 10% of renters in the South End and Roxbury.

### RENTER OCCUPANCY BY AGE OF HEAD OF HOUSEHOLD

% College Aged Renter Occupied	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Undergrad Aged Householder (Aged 15-24)	15%	23%	36%	31%	6%	10%
Grad Aged Householder (Aged 25-34)	30%	27%	33%	19%	18%	29%
Householder Age 35-44	16%	13%	9%	13%	19%	16%
Householder Age 45-54	14%	12%	6%	14%	22%	15%
Householder Age 55-64	11%	10%	5%	12%	16%	12%
Householder Age 65-74	7%	8%	5%	8%	12%	10%
Householder Age 75-84	5%	5%	4%	4%	5%	5%
Householder Age 85+	2%	2%	2%	1%	2%	2%

This pattern again reflects the nature and cost of stock in these neighborhoods. Mission Hill has little market appropriate multi-family stock but is still inexpensive enough for the economics to work for young, non-family households if they cluster. The Fenway stock is a perfect match to today's market which is dominated by small renter households, the South End is already too expensive for undergraduates, no matter how they cluster, and Roxbury has little multi-family stock and is yet to experience multi-bedroom roommate clustering at the level seen in Mission Hill.

Single person and two-person households dominate both owner and renter occupied units City-wide and in the NU Study Area, with the highest concentrations in Fenway and South End at over 80% and over 70% of occupied units, respectively. Smaller condominiums (studio and one bedroom units) are ubiquitous in these neighborhoods.

### OWNER OCCUPANCY BY HOUSEHOLD SIZE

% Occupants Per Owner-Occupied Unit	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
1 Person	32%	42%	55%	33%	27%	44%
2 People	33%	35%	33%	33%	29%	40%
3 People	15%	11%	8%	16%	18%	9%
4 People	11%	7%	3%	11%	12%	5%
5 People	5%	3%	1%	4%	7%	1%
6 People	2%	1%	0%	2%	3%	0%
7+ People	2%	1%	0%	1%	4%	0%

### RENTER OCCUPANCY BY HOUSEHOLD SIZE

% Occupants Per Renter-Occupied Unit	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
1 Person	39%	46%	54%	33%	37%	47%
2 People	30%	29%	33%	25%	24%	29%
3 People	15%	12%	9%	19%	17%	12%
4 People	9%	7%	3%	15%	11%	7%
5 People	4%	3%	1%	4%	6%	3%
6 People	2%	1%	0%	2%	3%	1%
7+ People	1%	1%	0%	1%	2%	1%

Just 20% of Boston's owner occupied units house 4 or more individuals (e.g. the now atypical family of 4+), as compared with just 12% for the NU Study Area overall. Note that compared to other neighborhoods surrounding NU, owner-occupied units in the South End and Fenway house represent fewer large households 7% and 4% respectively, while Roxbury and Mission Hill house the most at 26% and 18%, again reflecting the influence of building types/unit sizes on occupancy.

### HOUSING SUPPLY – RENTER OCCUPANT LONGEVITY/TRANSIENCY

Renter Occupied Units by Move-In Date	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Year Moved In: 2015 or Later	15,753	3,542	1,706	573	323	940
Year Moved In: 2010 to 2014	87,877	18,305	8,237	2,214	3,934	3,920
Year Moved In: 2000 to 2009	45,486	9,278	2,582	1,291	2,671	2,734
Year Moved In: 1990 to 1999	12,592	3,428	1,057	437	837	1,097
Year Moved In: 1980 to 1989	4,158	945	331	195	156	263
Year Moved In: 1979/Earlier	3,576	935	95	201	383	256

Renter Occupied Units by Move-In Date	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Year Moved In: 2015 or Later	9%	10%	12%	12%	4%	10%
Year Moved In: 2010 to 2014	52%	50%	59%	45%	47%	43%
Year Moved In: 2000 to 2009	27%	25%	18%	26%	32%	30%
Year Moved In: 1990 to 1999	7%	9%	8%	9%	10%	12%
Year Moved In: 1980 to 1989	2%	3%	2%	4%	2%	3%
Year Moved In: 1979/Earlier	2%	3%	1%	4%	5%	3%

The greatest number of recent renter move-ins in the Study Area have occurred in the Fenway (71%) where younger, generally more transient households (including students) dominate. Interestingly, in Mission Hill which also has a high concentration of younger households, the degree of renter transiency is lower than the City-wide average (43% of renter move-ins prior to 2010). Renter households in Roxbury and the South Ends are roughly evenly split between pre- and post-2010 move-ins.

### HOUSING SUPPLY – OWNER OCCUPANT LONGEVITY/TRANSIENCY

# Owner Occupied Units by Move-In Date	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Year Moved In: 2015 or Later	2,442	367	57	22	44	244
Year Moved In: 2010 to 2014	20,502	2,953	756	114	438	1,645
Year Moved In: 2000 to 2009	30,243	3,569	751	235	900	1,683
Year Moved In: 1990 to 1999	16,390	1,123	265	73	396	389
Year Moved In: 1980 to 1989	8,344	656	156	47	296	157
Year Moved In: 1979/Earlier	11,961	632	74	41	307	210

% Owner Occupied Units by Move-In Date	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Year Moved In: 2015 or Later	3%	4%	3%	4%	2%	6%
Year Moved In: 2010 to 2014	23%	32%	37%	21%	18%	38%
Year Moved In: 2000 to 2009	34%	38%	36%	44%	38%	39%
Year Moved In: 1990 to 1999	18%	12%	13%	14%	17%	9%
Year Moved In: 1980 to 1989	9%	7%	8%	9%	12%	4%
Year Moved In: 1979/Earlier	13%	7%	4%	8%	13%	5%

The greatest number of recent owner-occupant move-ins have occurred in the South End and the fewest have occurred in Mission Hill. In the former case, this reflects the strong for-sale market and in the latter case it's a reflection of the small scale and dominance of renter occupancy in the neighborhood.

Most (61%) of current renters in the City of Boston moved into their homes in the period since 2010 and nearly 10% have moved in since 2015. Notably, almost 40% have been in occupancy of their units for more than 5 years, which challenges perceptions regarding the transiency of renter households. Overall, the NU Study Area demonstrates similar distributions - 60% renter move-ins post 2010 and 40% pre-2010.

### Rents and Renter Affordability

As presented in the City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 18, the median rent for an apartment in Boston was \$2,500 per month for the calendar year from Q4 2017 to Q3 2018, reflecting an increase of 10.9% for the year.

Note that this figure is substantially above the rent growth – 3.0% - recorded for the overall supply which includes renewals and units not advertised on MLS. As indicated in the table below, reported rents ranged from \$3,725 in the Seaport to \$1,900 in Hyde Park.

Neighborhood	2015Q4 - 2016Q3 Median Monthly Rent <sup>(1)</sup>	2016Q4 - 2017Q3 Median Monthly Rent <sup>(1)</sup>	2017Q4 - 2018Q3 Median Monthly Rent <sup>(1)</sup>	Percent Change Last Two Years
Allston/Brighton	\$1,935	\$2,050	\$2,195	7.1%
Back Bay/Beacon Hill	2,615	2,815	3,000	6.6
Charlestown	2,615	2,665	2,785	4.5
Dorchester	1,885	1,795	2,200	22.6
Downtown	3,350	3,690	3,550	-3.8
East Boston	1,780	1,945	2,050	5.4
Fenway	2,200	2,405	2,500	4.0
Hyde Park	1,780	1,690	1,900	12.4
Jamaica Plain	2,300	2,350	2,550	8.5
Mattapan	1,675	1,640	2,000	22.0
Mission Hill/Longwood	1,935	2,305	2,550	10.6
North End	2,615	2,560	2,600	1.6
Roslindale	2,040	1,895	2,000	5.5
Roxbury	2,300	2,050	2,400	17.1
South Boston	2,680	2,790	2,850	2.2
South Boston Waterfront	3,140	3,440	3,725	8.3
South End	2,825	2,970	3,000	1.0
West End	3,160	3,075	3,160	2.8
West Roxbury	1,880	1,940	1,940	0.0
Citywide	2,285	2,255	2,500	10.9

(1) Rounded to nearest multiple of five.  
(2) Rental Beast is an online database of current rental listings.

Source: City of Boston, Department of Neighborhood Development using Multiple Listing Service (MLS) and Rental Beast, January 2019. MLS rental listings are created by local real estate agents and the system helps to market and manage property listings.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 18

Based on the ACS Survey for 2012-2016, over 40% of Boston's renter households paid over \$1,500 per month in rent, with even higher %'s for the NU Study Area overall. Note that in the South End fully 16% of renter households paid over \$2,500 per month, a function of its proximity to the Boston core, while in Roxbury only 1% of units rented above \$2,500 per month.

### ACS RENT SURVEY

# Renter Households	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Households Paying Contract Rent	166,124	35,960	13,844	4,892	8,170	9,054
Households Paying No Contract Rent	3,318	474	163	19	136	156
Households Paying Contract Rent: <\$500	34,610	9,879	2,288	1,544	2,968	3,079
Households Paying Contract Rent: \$1,000-\$1,249	22,857	3,357	1,040	361	1,432	524
Households Paying Contract Rent: \$1,250-\$1,499	20,484	3,180	1,705	307	830	338
Households Paying Contract Rent: \$1,500-\$1,999	31,550	6,174	3,840	682	554	1,098
Households Paying Contract Rent: \$2000-\$2499	14,836	3,739	2,230	375	165	969
Households Paying Contract Rent: \$2,500-\$3,499	11,730	3,052	1,226	402	112	1,312
Households Paying Contract Rent: \$3,500+	2,797	563	314	111	8	130
Median Contract Rent	\$1,232	\$1,155	\$1,590	\$894	\$815	\$947
Average Contract Rent	\$1,288	\$1,502	\$2,172	\$1,151	\$820	\$1,245
Renter Households: Pay Extra for Utilities	136,804	27,412	10,853	3,792	6,804	5,963
Renter Households: Do Not Pay Extra for Utilities	32,638	9,025	3,156	1,120	1,502	3,247

% Renter Households	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Households Paying Contract Rent: <\$500	20%	27%	16%	31%	36%	33%
Households Paying Contract Rent: \$500-\$999	16%	17%	9%	23%	25%	17%
Households Paying Contract Rent: \$1,000-\$1,249	13%	9%	7%	7%	17%	6%
Households Paying Contract Rent: \$1,250-\$1,499	12%	9%	12%	6%	10%	4%
Households Paying Contract Rent: \$1,500-\$1,999	19%	17%	27%	14%	7%	12%
Households Paying Contract Rent: \$2000-\$2499	9%	10%	16%	8%	2%	11%
Households Paying Contract Rent: \$2,500-\$3,499	7%	8%	9%	8%	1%	14%
Households Paying Contract Rent: \$3,500+	2%	2%	2%	2%	0%	1%
Renter Households: Pay Extra for Utilities	81%	70%	63%	46%	59%	48%
Renter Households: Do Not Pay Extra for Utilities	19%	30%	37%	54%	41%	52%

Despite these concentrations, the highest Median and Average rents, reflecting rent paid out of pocket by the tenant) were posted in the Fenway (\$1,590/mo. and \$2,172/mo. respectively), no doubt a function of large new luxury rental project deliveries in recent years.

As the more granular survey of new neighborhood rental projects demonstrates, median and average rents for the neighborhoods overall - where over 75% of the stock is more than half a century old - mask the high cost of modern market rate rental options throughout the NU Study Area.

The ACS Survey for 2012-2016 also shows that nearly 40% of Boston's renter households are rent burdened - that is, they pay more than 35% of income toward rent. These % are generally consistent across the Study Area neighborhoods - a little less for the South End where incomes are demonstrably higher.

**RENTAL AFFORDABILITY - RENT AS A % OF HOUSEHOLD INCOME**

Gross Rent as a % of Income - # HH's	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Gross Rent <10% of Household Income	7,296	1,427	433	176	296	522
Gross Rent 10-14.9% of Household Income	12,547	2,265	531	397	503	834
Gross Rent 15-19.9% of Household Income	18,798	2,935	1,096	435	609	795
Gross Rent 20-24.9% of Household Income	19,025	3,881	1,390	568	796	1,127
Gross Rent 25-29.9% of Household Income	19,516	3,931	1,656	465	825	985
Gross Rent 30-34.9% of Household Income	17,425	4,200	1,417	482	1,066	1,235
Gross Rent 35-39.9% of Household Income	11,103	2,172	795	246	577	554
Gross Rent 40-49.9% of Household Income	11,923	2,413	762	305	832	514
Gross Rent 50% + of Household Income	42,440	10,392	4,380	1,548	2,227	2,237
Gross Rent as a % of HH Inc Not Computed	9,369	2,819	1,549	289	574	407
Total HH's	169,442	36,435	14,009	4,911	8,305	9,210

Gross Rent as a % of Income - % of HH's	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
Gross Rent <10% of Household Income	4%	4%	3%	4%	4%	6%
Gross Rent 10-14.9% of Household Income	7%	6%	4%	8%	6%	9%
Gross Rent 15-19.9% of Household Income	11%	8%	8%	9%	7%	9%
Gross Rent 20-24.9% of Household Income	11%	11%	10%	12%	10%	12%
Gross Rent 25-29.9% of Household Income	12%	11%	12%	9%	10%	11%
Gross Rent 30-34.9% of Household Income	10%	12%	10%	10%	13%	13%
Gross Rent 35-39.9% of Household Income	7%	6%	6%	5%	7%	6%
Gross Rent 40-49.9% of Household Income	7%	7%	5%	6%	10%	6%
Gross Rent 50% + of Household Income	25%	29%	31%	32%	27%	24%
Gross Rent as a % of HH Inc Not Computed	6%	8%	11%	6%	7%	4%
% Rent Burdened (>35% of HH Income)	39%	41%	42%	43%	44%	36%
% Not Rent Burdened (<35% of HH Income)	56%	51%	47%	51%	49%	60%

The number of rent burdened households has trended up over the last 10 years as rent growth (11+% for Boston overall) has outpaced income growth (7+% for Boston overall). Recent supply additions have slowed the pace of rent growth lately, bringing it more in line with growth in incomes. However, if supply deliveries falter as a result of economic changes (e.g. recession or other economic shock) or City housing policy (e.g. rent control or other disincentives to investment and production) the degree of rent burden could increase substantially.

For the youngest households (most of which are in single or two person HH's), the capacity to support rent is particularly limited. At 30% of income, these young households are able to support an average rent of roughly \$1,500 per month City-wide and \$1,200 per month for the NU Study Area neighborhoods. At 40% of HH income the supportable average rents jump to \$2,000 and \$1,600 respectively. Note that this bracket is consistent with the per bed rates seen in both University sponsored and privately owned mingles (roommate) apartments in the NU Study Area – data that will be explored in greater detail later in this report.

### RENTAL AFFORDABILITY FOR UNDERGRADUATE AGED HOUSEHOLDS

2018 Undergrad Households (Head-Aged 15-24)	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2018 Median Household Income	\$36,760	\$26,771	\$23,159	\$33,033	\$32,530	\$37,923
2018 Average Household Income	\$58,483	\$47,545	\$43,534	\$50,048	\$42,271	\$70,694
Avg. Rental Affordability at 30%	\$1,462	\$1,189	\$1,088	\$1,251	\$1,057	\$1,767
Avg. Rental Affordability at 40%	\$1,949	\$1,585	\$1,451	\$1,668	\$1,409	\$2,356

2023 Undergrad Households (Head-Aged 15-24)	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2023 Median Household Income	\$41,489	\$29,986	\$26,627	\$36,042	\$36,444	\$42,626
2023 Average Household Income	\$69,379	\$55,825	\$51,243	\$58,057	\$50,531	\$82,260
Avg. Rental Affordability at 30%	\$1,734	\$1,396	\$1,281	\$1,451	\$1,263	\$2,057
Avg. Rental Affordability at 40%	\$2,313	\$1,861	\$1,708	\$1,935	\$1,684	\$2,742

By 2023 an average rent of roughly \$1,700 per month City-wide and \$1,400 per month is supportable at 30% of income for undergraduate aged households in the NU Study Area neighborhoods. At 40% of HH income the 2023 supportable average rents for this cohort jump to \$2,300 and \$1,900 respectively, consistent with the pace of anticipated rent growth.

With their significantly higher household incomes, graduate aged households (headed by persons aged 25 to 34 also living primarily in one and two-person households) At 30% of income, are able to support an average rent of roughly \$2,500 per month City-wide and \$2,200 per month for the NU Study Area neighborhoods. At 40% of HH income the supportable average rents jump to \$3,300 and \$2,900 respectively.

### RENTAL AFFORDABILITY FOR GRADUATE AGED HOUSEHOLDS

2018 Grad Households (Head-Aged 25-34)	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2018 Median Household Income	\$75,302	\$58,780	\$54,534	\$46,119	\$45,794	\$88,442
2018 Average Household Income	\$99,602	\$87,209	\$80,748	\$68,388	\$62,779	\$117,438
Avg. Rental Affordability at 30%	\$2,490	\$2,180	\$2,019	\$1,710	\$1,569	\$2,936
Avg. Rental Affordability at 40%	\$3,320	\$2,907	\$2,692	\$2,280	\$2,093	\$3,915

2023 Grad Households (Head-Aged 25-34)	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2023 Median Household Income	\$86,027	\$69,445	\$63,541	\$53,317	\$53,127	\$97,436
2023 Average Household Income	\$116,675	\$101,231	\$94,104	\$79,450	\$74,648	\$132,431
Avg. Rental Affordability at 30%	\$2,917	\$2,531	\$2,353	\$1,986	\$1,866	\$3,311
Avg. Rental Affordability at 40%	\$3,889	\$3,374	\$3,137	\$2,648	\$2,488	\$4,414

By 2023, an average rent of roughly \$2,900 per month City-wide and \$2,500 per month is supportable at 30% of income for the NU Study Area neighborhoods. At 40% of HH income the 2023 supportable average rents jump to \$3,900 and \$3,500 respectively, consistent with the pace of anticipated rent growth.

### *City Apartment Pipeline*

As presented in the City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019 (p. 23), between 2014 and Q2 2018 nearly 18,000 new units had been created in the City of Boston. This represents over 30% of the City's targeted goal to create 53,000 new housing units by 2030 as set forth in the Housing Boston 2030 Plan.

These goals were revised in 2018 to 69,000 to account for the impacts of accelerating population growth. Permits issued by the BPDA as of year-end 2018 totaled 29,385 against a target of 21,829 through 2018, 135% of the target. Over \$2.1B in residential projects (4,219 units) were permitted in 2018, of which 17.1% were income restricted. Over 3,700 units were actually delivered in 2018.

The largest projects recently completed, under construction or permitted by number of units include the apartments at 345 Harrison Avenue in the South End (602 units), the Pierce in the Fenway (350 units), 60 Kilmarnock Street in the Fenway (445 units), Bulfinch Crossing at Government Center (348 units), The Benjamin and Via in the Seaport (820 units), The Smith in the South End (650 units), Rio Grande in Roxbury (236 units), 45 Townsend Street in Roxbury (322 units), 380 Harrison Avenue in the South End (324 units), Fenway Center in the Fenway (320 units) and the Charlesview Redevelopment in Brighton (340 units). Note that nearly 3,250 units in these largest projects are located within the NU Study Area submarkets (in the South End, Roxbury and Fenway).

A more complete review of rental apartment real estate trends for the targeted submarkets surrounding NU follows.

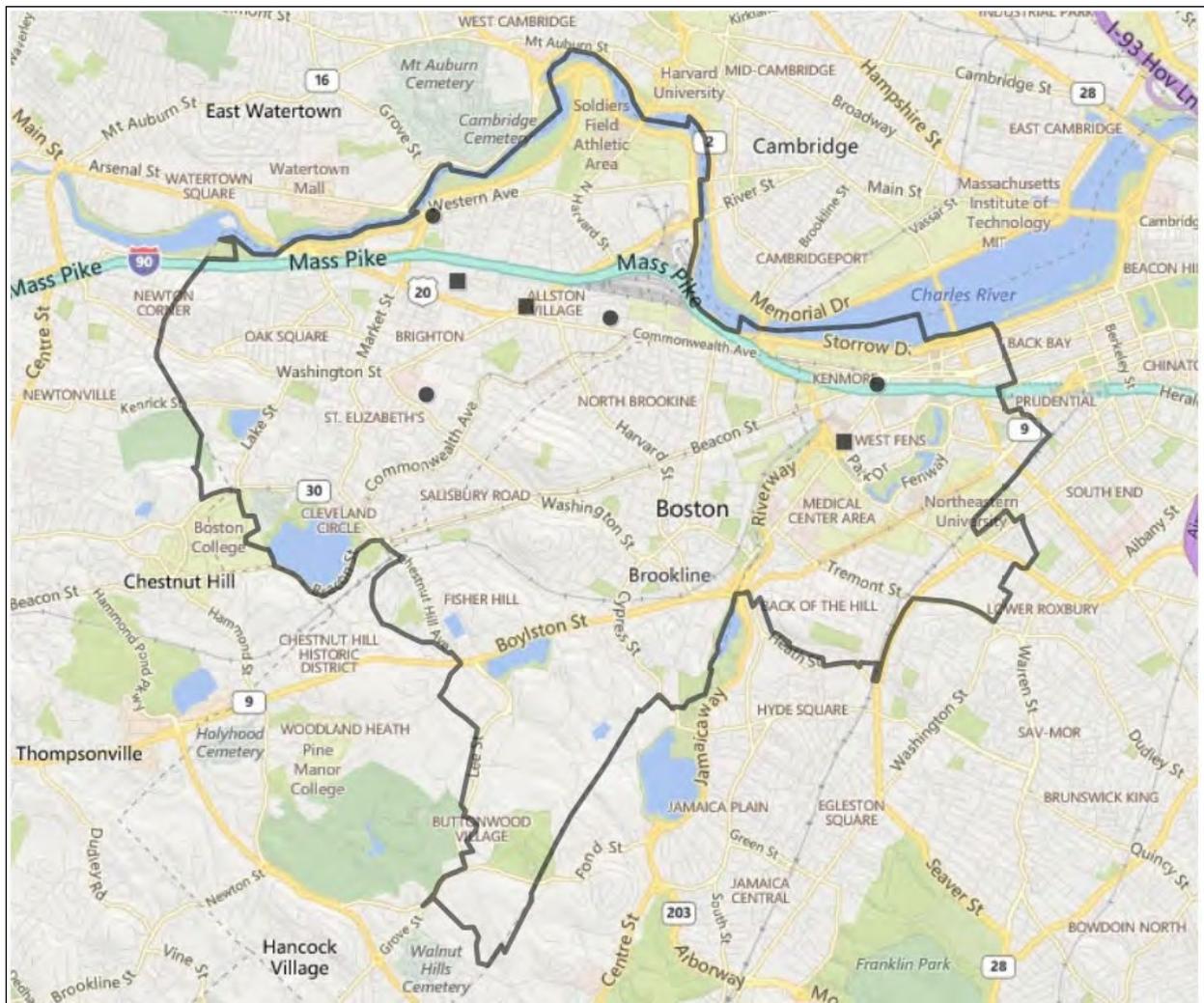
### *Fenway & Mission Hill Apartment Rental Market Trends*

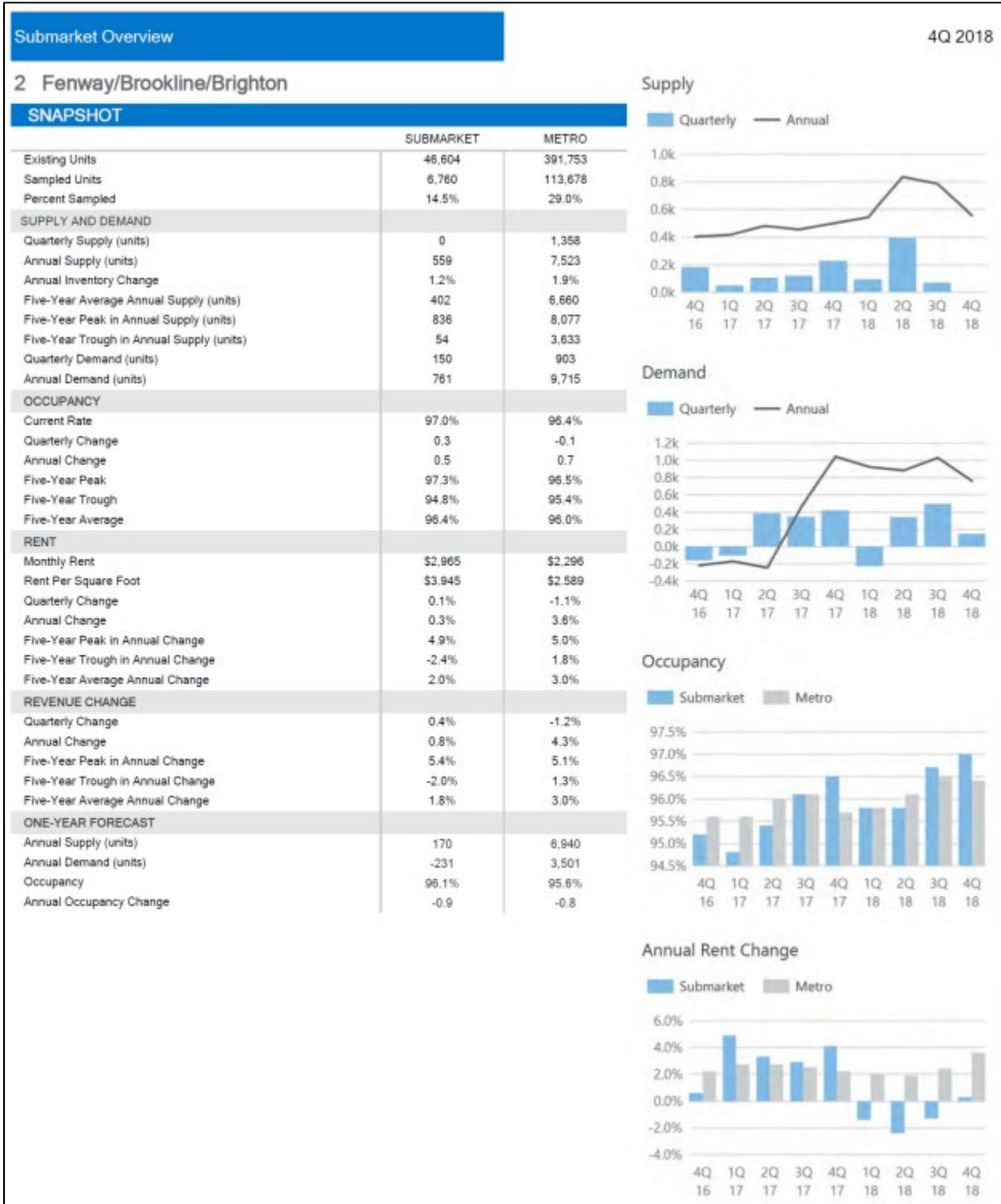
RealPage segments metro Boston into 15 submarkets (based on zip code areas). As shown below, the defined Fenway/Brookline/Brighton submarket, encompasses the NU Market Area neighborhoods of Fenway/Kenmore Square and Mission Hill, as well as the Allston/Brighton neighborhood and town of Brookline. A summary of key market metrics is presented below. A snapshot of submarket trends follows.

- With an existing supply of 46,604 units (of which 14.5% were sampled for their 4<sup>th</sup> quarter analysis), the submarket experienced a 1.2% change in inventory over the past year.
- Overall occupancy in the submarket increased from 96.5% to 97.0% from 4<sup>th</sup> Quarter a year earlier. While high across the board, differences are seen by product age, with somewhat lower rates for newer construction, at 95.3% for properties built since 2000 (compared with 97.6% to 99.8% for three categories of older construction).

- Fenway/Brookline/Brighton's average rent in 4<sup>th</sup> Quarter 2018 was \$2,965 per month and \$3.95 per square foot. The average annual change in rents is reported at 2.0% for the prior five years, and .3%, nearly flat, for the most recent 2018 year, reflecting the short-term effects of recent, substantial supply additions in both Fenway and Brighton.
- Submarket inventory is projected to grow by 170 units, or 0.4%, over the next year. Four properties with a total of 882 units currently under construction. This includes 312 units in the Fenway (Fenway Center with projected completion Fall 2021).

### SUBMARKET BOUNDARIES





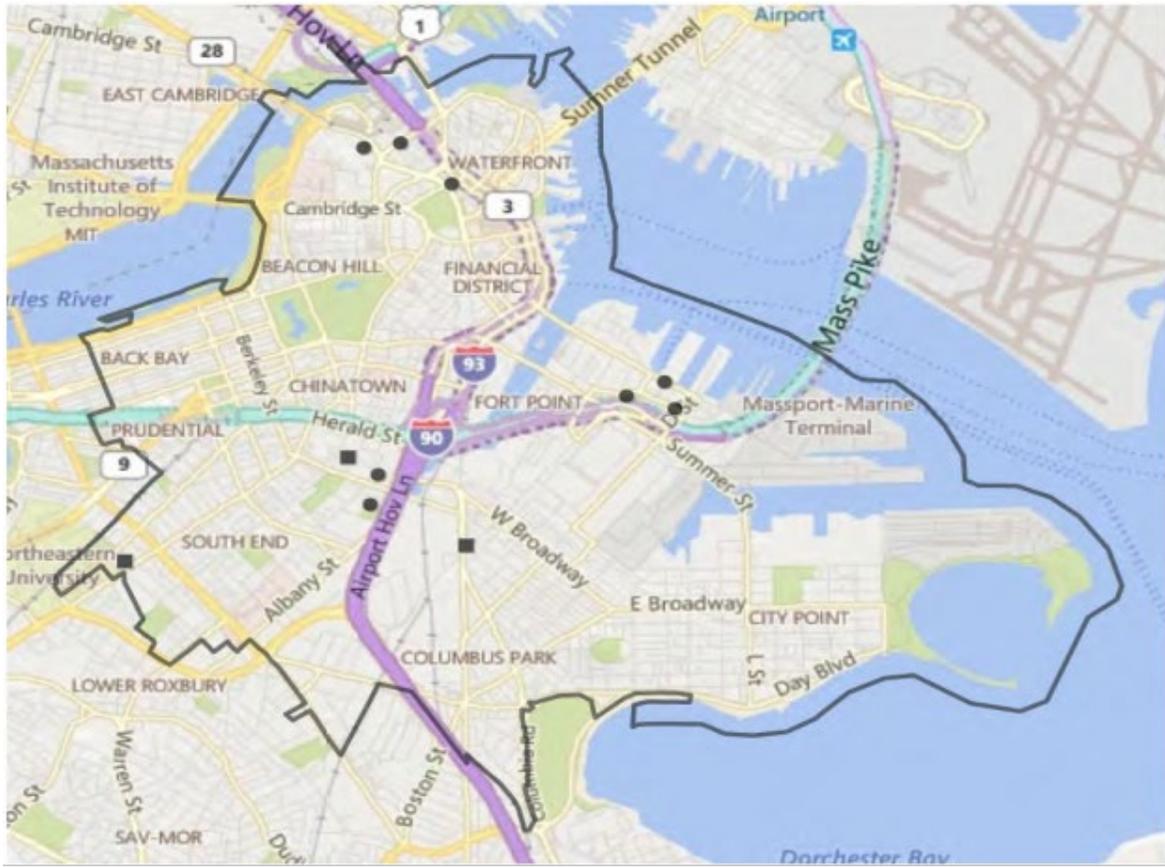
Submarket Overview						4Q 2018
<b>Submarket: Fenway/Brookline/Brighton Supply Details</b>						
Sub#	Properties Completed in the Last Four Quarters	Developer	Units	Stories	Start	Finish
2	200 Brookline 200 Brookline Ave, Boston, MA 02215	SAMUELS & ASSOCIATES	240	30	10/15	08/18
2	446 Cambridge Street 446 Cambridge St, Boston, MA 02134	Not Confirmed	40	4	03/16	03/18
2	Lantera Boston Landing 125 Guest St, Boston, MA 02135	John Hancock Realty	295	18	09/16	06/18
						<b>Total Units: 575</b>
Sub#	Properties Under Construction	Developer	Units	Stories	Start	Finish
2	159-201 Washington Street 159-201 Washington St, Brighton, MA 02135	Blue Vista Capital Management	400	5	06/18	02/21
2	Fenway Center I Overland St & Beacon St, Boston, MA 02215	Meredith Management	312	27	01/18	10/21
2	Packard Crossing I 79-83 Gardner St, Boston, MA 02134	The Hamilton Company, Inc.	38	4	09/17	08/19
2	Radius 530 Western Ave, Boston, MA 02135	Mount Vernon Company	132	6	08/17	09/19
						<b>Total Units: 882</b>

### South End Apartment Rental Market Trends

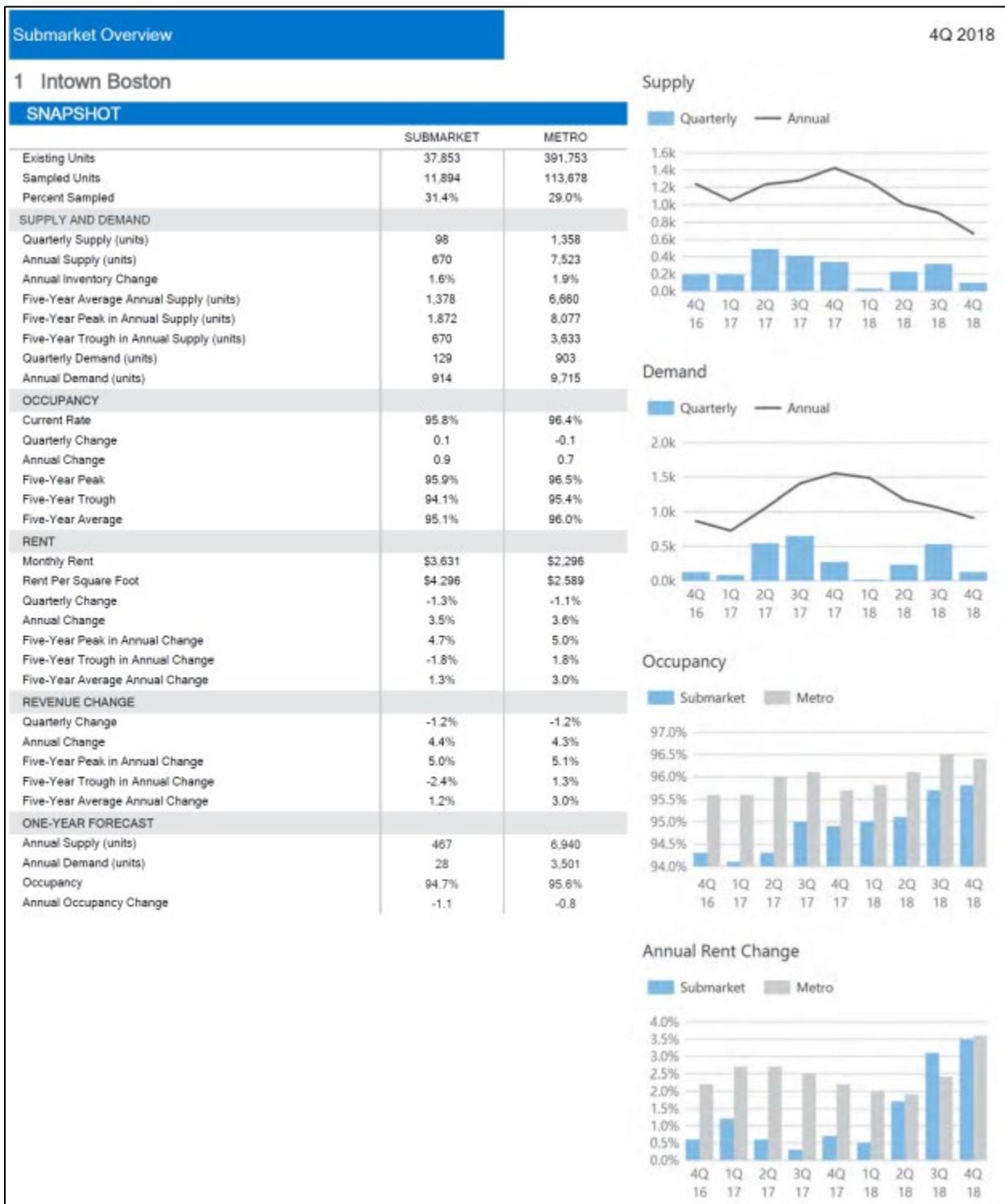
As shown in the following map, the defined InTown Boston submarket, encompasses the NU Market Area's South End neighborhood, as well as Back Bay, Seaport and the Downtown. Note that the South End is now firmly regarded to be part of the "first tier" core downtown marketplace. A summary of the key market metrics is presented below. A snapshot of submarket trends follows.

- With an existing supply of 37,853 units (of which 31.4% were sampled for their 4<sup>th</sup> quarter analysis), the submarket experienced a 1.6% change in inventory over the past year.
- Overall occupancy in the submarket increased from 95.1% to 95.8% from 4<sup>th</sup> Quarter a year earlier. While high across the board, differences are seen by product age, with somewhat lower rates for newer construction, at 95.7% for properties built since 2000 (compared with 94.4% to 96.8% for three categories of older construction).
- InTown average rent in 4<sup>th</sup> Quarter 2018 was \$3,631 per month and \$4.30 per square foot. The annual change in rents for the prior five years is reported at 1.3%, and around 3.5% for 2018.
- Submarket inventory grew by 662 units in 2018 and another eight properties with a total of 2,841 units are currently under construction. This includes 572 units in the South End.

**SUBMARKET BOUNDARIES**



Submarket Overview							4Q 2018
<b>Submarket: Intown Boston Supply Details</b>							
Sub#	Properties Completed in the Last Four Quarters	Developer	Units	Stories	Start	Finish	
1	248 Dorchester Avenue 248 Dorchester Ave, Boston, MA 02127	Evergreen Property Group	33	6	10/16	01/18	
1	345 Harrison Ave 1071 Washington St, Boston, MA 02118	Nordblom Management	585	14	11/15	10/18	
1	Camden Street 150 Camden St, Boston, MA 02118	The Hamilton Company, Inc.	44	5	11/16	02/18	
			<b>Total Units: 662</b>				
Sub#	Properties Under Construction	Developer	Units	Stories	Start	Finish	
1	35 Lomasney Way 35 Lomasney Way, Boston, MA 02114	EQUITY RESIDENTIAL	470	44	06/18	02/21	
1	Bulfinch Crossing I 100 Sudbury St, Boston, MA 02114	HYM Investment Group	368	46	01/17	09/20	
1	Echelon Seaport 145 Seaport Blvd, Boston, MA 02210	Cottonwood Management	270	21	06/17	07/20	
1	Hub on Causeway 100 Causeway, Boston, MA 02114	BOSTON PROPERTIES	440	38	01/18	09/20	
1	NEMA Boston 399 Congress St, Boston, MA 02210	Crescent Heights	414	22	07/17	07/20	
1	The Berkeley 370-380 Harrison Ave, Boston, MA 02118	Related Beal	172	14	02/18	02/20	
1	The Smith South End I Harrison Ave & Albany St, Boston, MA 02118	Leggat McCall Properties	400	11	07/18	03/21	
1	Waterside Place II 501 Congress St, Boston, MA 02210	Drew Company	307	23	02/18	05/20	
			<b>Total Units: 2,841</b>				

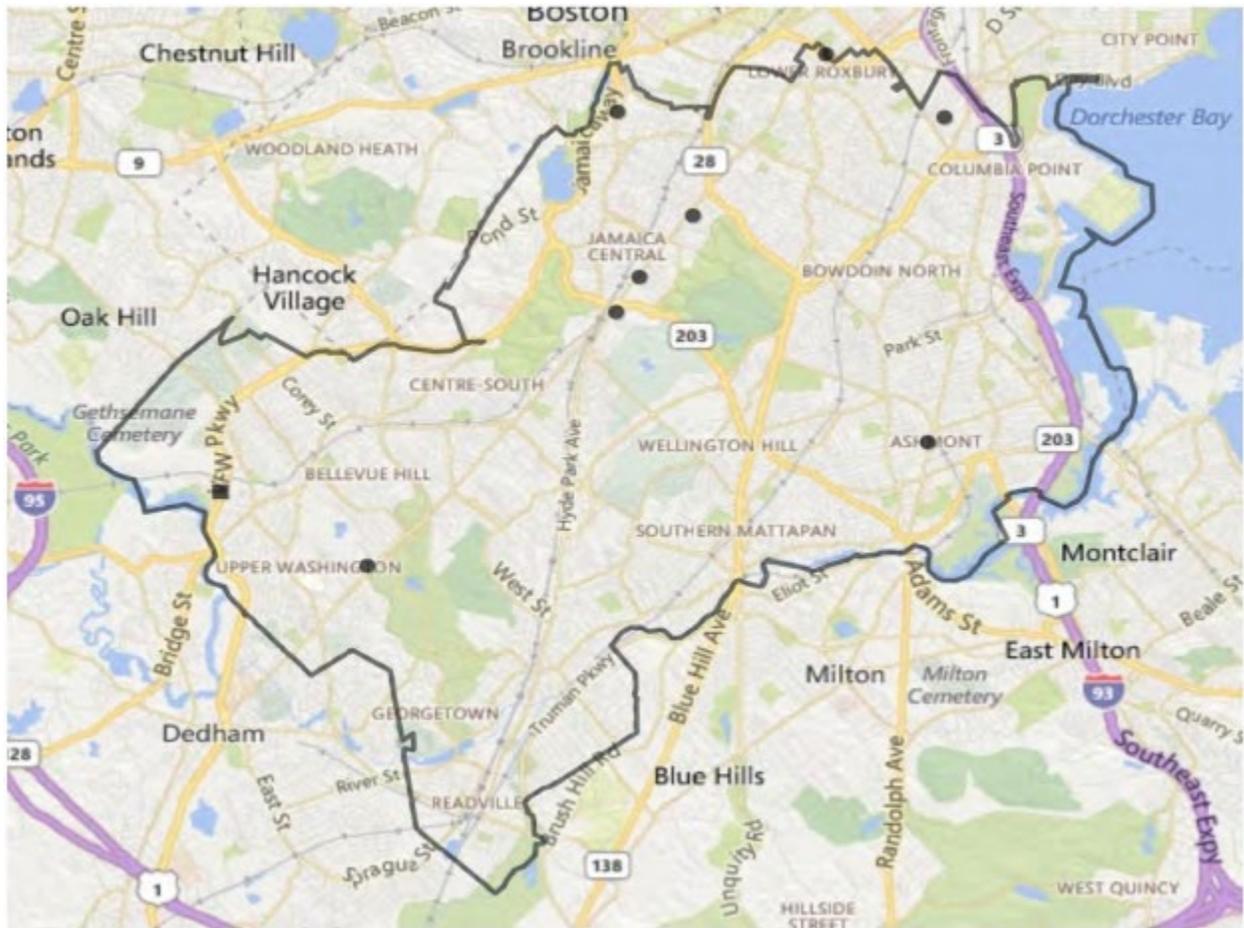


### *Roxbury Apartment Rental Market Trends*

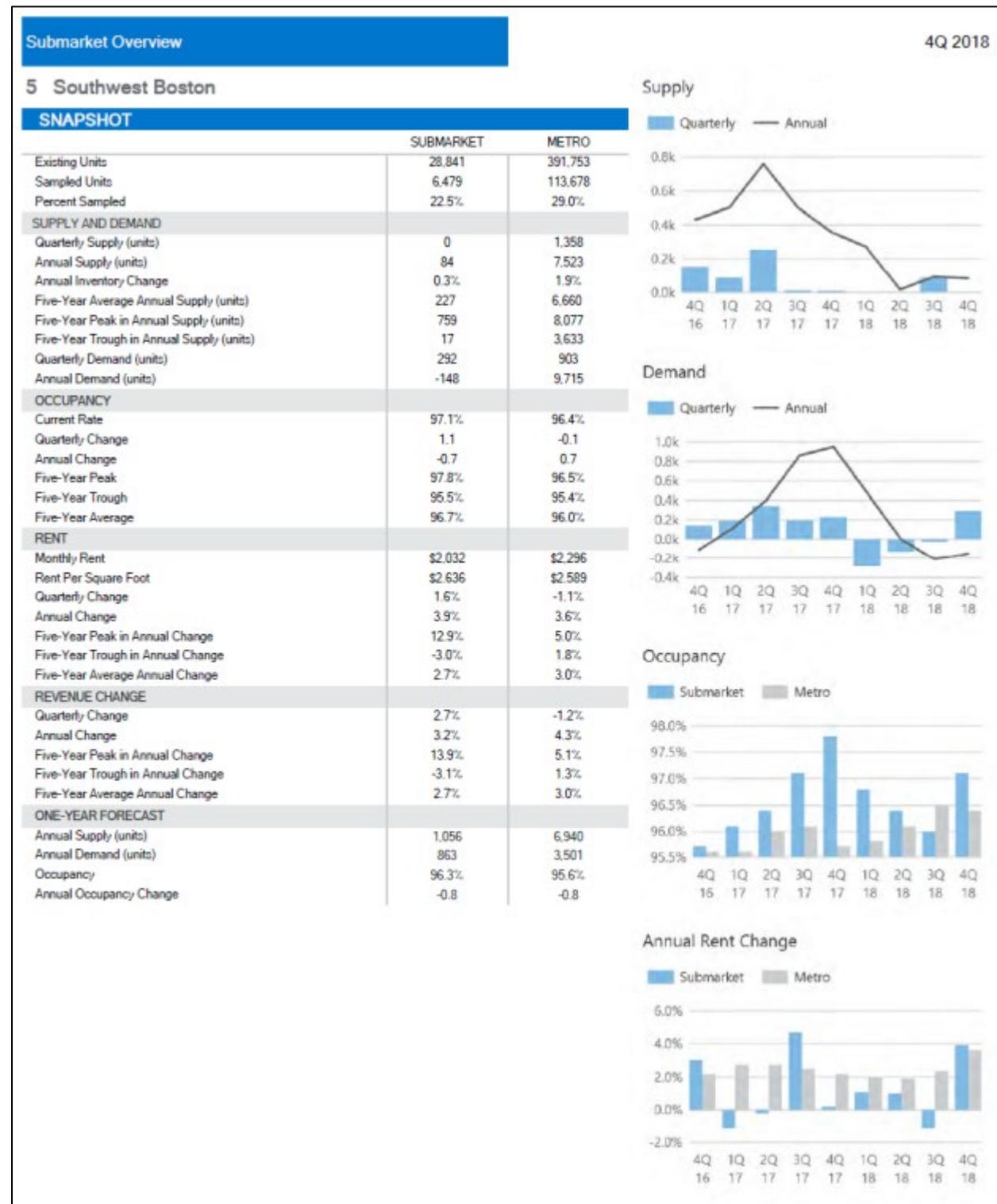
As shown in the following map, the defined Southwest Boston submarket, encompasses the NU Market Area's Roxbury neighborhood, as well as Jamaica Plain, Dorchester, Hyde Park, Roslindale, West Roxbury and Mattapan. A summary of the key market metrics is presented below. A snapshot of submarket trends follows.

- With an existing supply of 28,841 units (of which 22.5% were sampled for the 4<sup>th</sup> quarter analysis), the submarket experienced a .3% change in inventory over the past year (84 units).
- Overall occupancy in the submarket decreased from 97.8% to 97.1% from 4<sup>th</sup> Quarter a year earlier. While high across the board, differences are seen by product age, with somewhat lower rates for newer construction, at 95.9% for properties built since 2000 (compared with 97.0% to 98.1% for three categories of older construction).
- Southwest Boston average rent in 4<sup>th</sup> Quarter 2018 was \$2,032 per month and \$2.30 per square foot. The annual change in rents for the prior five years is reported at 2.7%, and around 3.9% for 2018.
- Submarket inventory grew by 84 units in 2018. Eight properties with a total of 1,239 units are currently under construction. This includes 199 units in Roxbury.

**SUBMARKET BOUNDARIES**



Submarket Overview							4Q 2018
<b>Submarket: Southwest Boston Supply Details</b>							
Sub#	Properties Completed in the Last Four Quarters	Developer	Units	Stories	Start	Finish	
5	Oak Row 1235 VFW Parkway, Boston, MA 02132	Sovad LLC	84	4	09/17	09/18	
<b>Total Units: 84</b>							
Sub#	Properties Under Construction	Developer	Units	Stories	Start	Finish	
5	3190-3200 Washington Street 3190-3200 Washington St, Boston, MA 02130	Berkeley Investments Inc	73	6	06/17	08/19	
5	4945 Washington Street 4945 Washington St, Boston, MA 02132	Vacca Property Management, LLC	46	4	11/17	11/19	
5	Former Flanagan & Seaton Motor Car Company 3521-3529 Washington St, Jamaica Plain, MA 02130	New Boston Ventures LLC	132	5	05/18	02/20	
5	Melnea Hotel & Residences Washington St & Melnea Cass Blvd, Roxbury, MA 02119	Madison Park Development Corp	50	6	03/17	06/19	
5	The Andi at South Bay 101 Allstate Rd, Dorchester, MA 02125	EDENS	475	6	07/17	09/19	
5	The Brynx 201 S Huntington Ave, Boston, MA 02130	Eden Properties	149	5	08/17	10/19	
5	The Residences at Forest Hills 3694 Washington St, Jamaica Plain, MA 02130	Criterion Development Partners	250	6	01/18	03/20	
5	1943 Dot Ave 1943 Dorchester Ave, Boston, MA 02124	Peregrine Group, LLC	64	5	06/17	01/19	
<b>Total Units: 1,239</b>							



## Boston and NU Study Area For-Sale Housing Market Trends

### *Home Prices and Homeowner Affordability*

The data for both 2018 and 2023 demonstrate the degree to which home ownership is out of reach for all but the more affluent households. The median price of a home in the City of Boston in 2018 requires an income 30% above the median household income for the City and of course in the NU Study Area, the gap between the incomes required and the incomes available is even greater.

This affordability gap is of course directly related to the demographic profile of the NU submarkets which are dominated by younger households, including many non-working or part-time working students of very limited means.

### 2018 HOME VALUES AND AFFORDABILITY METRICS

# Owner Occupied Housing Units	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2018 Home Value <\$300,000	16,705	1,315	327	198	659	131
2018 Home Value \$300,000-\$399,999	19,974	1,415	378	103	642	292
2018 Home Value \$400,000-\$499,999	17,994	1,320	353	111	379	477
2018 Home Value \$500,000-\$749,999	22,633	2,485	601	187	570	1,127
2018 Home Value \$750,000-\$999,999	7,077	1,626	385	53	159	1,029
2018 Home Value \$1,000,000-\$1,499,999	4,803	1,197	237	57	123	780
2018 Home Value \$1,500,000-\$1,999,999	1,396	435	84	9	0	342
2018 Home Value \$2,000,000 or greater	2,492	332	108	5	22	197
2018 Median Home Value	\$454,785	\$601,861	\$574,251	\$454,505	\$396,262	\$788,994
Med. Monthly Mortgage (10% Down-4%/30 Yr)	\$1,954	\$2,586	\$2,467	\$1,953	\$1,703	\$3,390
Med. HH Income Required (30% Income Req'd)	\$78,164	\$103,442	\$98,696	\$78,116	\$68,105	\$135,604
% of 2018 Median HH Income	130%	248%	265%	232%	184%	199%
2018 Average Home Value	\$571,496	\$725,462	\$712,020	\$536,584	\$482,753	\$905,960
Avg. Monthly Mortgage (10% Down-4%/30 Yr)	\$2,456	\$3,117	\$3,059	\$2,306	\$2,074	\$3,893
Avg. HH Income Required (30% Income Req'd)	\$98,223	\$124,685	\$122,375	\$92,222	\$82,971	\$155,707
% of 2018 Average HH Income	105%	160%	175%	162%	150%	136%

## 2023 HOME VALUES AND AFFORDABILITY METRICS

# Owner Occupied Housing Units	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
<b>Total Owner Occupied Housing Units</b>	<b>101,382</b>	<b>11,242</b>	<b>2,745</b>	<b>822</b>	<b>2,923</b>	<b>4,752</b>
2023 Home Value < \$300,000	10,616	827	258	135	371	63
2023 Home Value \$300,000-\$399,999	17,178	1,144	356	89	553	146
2023 Home Value \$400,000-\$499,999	20,226	1,323	354	121	503	345
2023 Home Value \$500,000-\$749,999	30,265	2,929	686	260	909	1,074
2023 Home Value \$750,000-\$999,999	10,378	2,167	511	100	261	1,295
2023 Home Value \$1,000,000-\$1,499,999	7,416	1,812	332	95	276	1,109
2023 Home Value \$1,500,000-\$1,999,999	1,887	585	111	14	0	460
2023 Home Value \$2,000,000 or greater	3,416	455	137	8	50	260
2023 Median Home Value	\$522,063	\$698,617	\$647,413	\$563,462	\$509,488	\$894,402
Med. Monthly Mortgage (10% Down-4%/30 Yr)	\$2,243	\$3,002	\$2,782	\$2,421	\$2,189	\$3,843
Med. HH Income Required (30% Income Req'd)	\$89,727	\$120,071	\$111,271	\$96,842	\$87,565	\$153,720
% of 2023 Median HH Income	123%	244%	248%	258%	205%	199%
2023 Average Home Value	\$648,884	\$819,456	\$777,404	\$638,047	\$600,334	\$1,009,912
Avg. Monthly Mortgage (10% Down-4%/30 Yr)	\$2,788	\$3,521	\$3,340	\$2,742	\$2,579	\$4,339
Avg. HH Income Required (30% Income Req'd)	\$111,523	\$140,839	\$133,612	\$109,661	\$103,179	\$173,573
% of 2023 Average HH Income	101%	156%	164%	165%	155%	136%

And prices are trending higher with continued growth expected between 2018 and 2023 averaging 3% per year City-wide and for the NU Study Area overall. Note, however, that in both Roxbury and Mission Hill, where the median 2018 prices are lowest, growth is expected to average 5%+ annually through 2023.

### HOME VALUE TRENDS

Median Home Value Trend	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2018 Median Value	\$454,785	\$601,861	\$574,251	\$454,505	\$396,262	\$788,994
2023 Median Value	\$522,063	\$698,617	\$647,413	\$563,462	\$509,488	\$894,402
% Change 2018-2023	15%	16%	13%	24%	29%	13%
Annual % Change	3%	3%	3%	5%	6%	3%

Average Home Value Trend	Boston-City	NU Area	Fenway	Mission Hill	Roxbury	South End
2018 Average Value	\$571,496	\$725,462	\$712,020	\$536,584	\$482,753	\$905,960
2023 Average Value	\$648,884	\$819,456	\$777,404	\$638,047	\$600,334	\$1,009,912
% Change 2018-2023	14%	13%	9%	19%	24%	11%
Annual % Change	3%	3%	2%	4%	5%	2%

Also note that in the South End, average prices are expected to top \$1.0M by 2023, putting ownership here far out of reach for most households.

### Single Family Trends

As presented in the City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 19 and illustrated in the following table, annual real median home prices peaked in 2006 at \$500,966 for the Greater Boston area. Prices declined 23.3% until 2012, when they reached a low of \$384,090. Prices have since recovered, climbing 20.8% from 2012 to 2017. They climbed further in the third quarter of 2018 to \$491,400, nearing the record highs of 2006.

<b>Median Residential Sales Prices for Boston First Quarter 2009 through Fourth Quarter 2018 (In Fixed 2018 Dollars)<sup>(1)</sup></b>					
<b>Year</b>	<b>Quarter</b>	<b>Single-Family</b>	<b>Two-Family</b>	<b>Three-Family</b>	<b>Condominium</b>
2009	First .....	\$316,000	\$318,950	\$283,800	\$349,150
	Second .....	405,000	328,900	292,600	415,500
	Third .....	411,100	374,550	302,000	403,750
	Fourth .....	378,050	340,000	351,100	386,250
2010	First .....	\$368,450	\$305,150	\$310,950	\$382,300
	Second .....	429,200	344,850	333,950	408,800
	Third .....	418,950	376,500	333,950	431,850
	Fourth .....	388,350	380,000	355,550	443,350
2011	First .....	\$356,400	\$332,100	\$368,350	\$393,750
	Second .....	398,500	363,350	352,650	429,800
	Third .....	395,700	371,200	364,400	418,550
	Fourth .....	369,200	365,050	390,700	424,200
2012	First .....	\$353,750	\$345,900	\$406,850	\$417,800
	Second .....	396,850	396,850	415,050	453,850
	Third .....	403,550	415,600	425,950	436,400
	Fourth .....	376,700	405,750	410,100	432,000
2013	First .....	\$388,050	\$366,450	\$425,750	\$440,300
	Second .....	460,800	444,650	466,700	462,400
	Third .....	435,450	454,800	474,250	468,850
	Fourth .....	409,850	482,350	476,950	517,400
2014	First .....	\$420,000	\$425,300	\$503,800	\$527,150
	Second .....	466,700	501,700	535,650	505,700
	Third .....	465,650	530,300	530,300	477,250
	Fourth .....	461,400	529,800	529,800	502,750
2015	First .....	\$422,700	\$460,850	\$566,800	\$519,100
	Second .....	487,300	540,300	627,700	545,600
	Third .....	519,100	553,500	622,350	540,300
	Fourth .....	477,250	549,850	609,150	619,200
2016	First .....	\$470,800	\$564,950	\$601,550	\$545,850
	Second .....	523,600	531,450	627,750	612,000
	Third .....	542,200	595,950	691,500	685,250
	Fourth .....	511,300	575,400	705,650	591,100
2017	First .....	\$521,900	\$563,400	\$651,500	\$589,000
	Second .....	582,850	668,400	768,300	599,250
	Third .....	573,650	683,750	791,350	599,250
	Fourth .....	563,400	624,850	814,300	643,550
2018	First .....	\$549,000	\$580,000	783,750	\$638,700
	Second .....	615,000	728,500	860,000	675,000
	Third .....	619,000	687,500	805,000	675,000
	Fourth .....	600,000	682,000	784,500	635,000

(1) Rounded to the nearest multiple of 50.  
Source: City of Boston, Department of Neighborhood Development using Banker & Tradesman data, January 2019.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 20

As described by the City’s OS, the median sales price, adjusted for inflation, for a single-family home in Boston increased by 5.3% per year between the fourth quarter 2009 (\$378,050) and the fourth quarter of 2018 (\$600,000), posting a 6.5% increase from the fourth quarter in 2017.

The total number of residential sales from 2017 to 2018 increased by 4.9% (from 7,658 to 8,030). The sales volume of single-family homes increased 2.8%.

### *Two and Three Family Trends*

As shown in the prior table, two and three family prices escalated straight through the recession years. Two-family sale prices averaged \$318,950 in Q1 of 2009 and have risen to \$682,000 as of year-end 2018, reflecting average annual un compounded growth of over 11% per year over a 10 year period. Three family sales prices have grown even more dramatically, averaging \$283,000 in Q1 of 2009 and \$784,500 in Q4 2018, reflecting annual growth over a 10 year period of over 17.5% per year.

These extreme increases are judged to reflect two factors, the first, related to the rental income potential of these properties in the face of serious undersupply conditions present in the local rental market; and, the second related to the condominium conversion potential of these properties. The tables below illustrate how the current prices might work from rental investor and condominium converter perspectives, helping to underscore the potentials represented by these properties in the current investor housing market.

#### **RENTAL INVESTOR ILLUSTRATION**

<b>Property Type</b>	<b>Analytic Factors</b>	<b>2 Fam</b>	<b>3 Fam</b>
2018 Average Price		\$682,000	\$784,500
Net Income Potential	6% Capitalization Rate	\$40,920	\$47,070
Gross Income (Rent)	70% Operating Ratio	\$58,457	\$67,243
Monthly Rent	12 months	\$4,871	\$5,604
Per Unit	All Units Rented	\$2,436	\$1,868
Per Bedroom	2 Bedrooms/Unit	\$1,218	\$934

Note that the resultant monthly rents and rents per bedroom presented by this illustration are generally consistent with the market rental experience for these property types.

So too are the resultant condominium sale prices reflected in the condominium converter illustration that follows.

**CONDOMINIUM CONVERTER ILLUSTRATION**

Property Type	Analytic Factors	2 Fam	3 Fam
2018 Average Price		\$682,000	\$784,500
Plus Renovation Cost	\$75,000 Per unit	\$150,000	\$225,000
Total Development Cost		\$832,000	\$1,009,500
Plus Converter Profit	25% of TDC	\$208,000	\$252,375
Sale Price Estimate	70% Operating Ratio	\$1,040,000	\$1,261,875
Per Unit	All Units Sold	\$520,000	\$420,625

*Condominium Trends*

Condominium prices climbed 5.7% annually from the fourth quarter 2009 price of \$386,250 to \$635,000 in the fourth quarter of 2018. As set forth in the City’s OS and presented in the table below, sales of condominiums increased 7.4%, and sales of multi-family non-condominiums properties decreased 3.9% between 2017 and 2018.

Year	Single-Family Sales	Percent Change	Multi-Family Residential Sales (2)	Percent Change	Total Condo Sales	Percent Change	Residential and Condo Sales (3)	Percent Change
2009.....	974	1.8%	1,403	0.7%	4,338	-10.1%	6,715	-6.4%
2010.....	999	2.6	1,455	3.7	4,282	-1.3	6,736	0.3
2011.....	938	-6.1	1,484	2.0	3,872	-9.6	6,294	-6.6
2012.....	1,205	28.5	1,124	-24.3	4,851	25.3	7,180	14.1
2013.....	1,316	9.2	1,277	13.6	5,204	7.3	7,797	8.6
2014.....	1,196	-9.1	1,147	-10.2	4,888	-6.1	7,231	-7.3
2015.....	1,406	17.6	1,334	16.3	5,723	17.1	8,463	17.0
2016.....	1,350	-4.0	1,227	-8.0	5,579	-2.5	8,156	-3.6
2017.....	1,267	-6.1	1,191	-2.9	5,200	-6.8	7,658	-6.1
2018.....	1,303	2.8	1,144	-3.9	5,583	7.4	8,030	4.9

(1) These do not include sales of apartment buildings larger than three-family structures. Condominium sales include buildings of any size.  
(2) Includes two- and three-family homes only.  
(3) Equals single-family, multiple-family residential sales plus total condominium sales.  
Source: City of Boston, Department of Neighborhood Development using Banker & Tradesman data, January 2019.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 21

*Neighborhood Trends*

As set forth in the City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 21, and described in the table below, the largest number of single-family home sales in 2017 and 2018 occurred in West Roxbury, Hyde Park, Dorchester and Roslindale. The median single-family home price for the city overall was \$600,000 for 2018. As the data shows, median sales prices increased by 6.5% between 2017 and 2018 after adjusting for inflation, while the sales volumes increased by 2.8%.

The four most expensive neighborhoods for condominiums were the Seaport (\$2,026,500), Back Bay/Beacon Hill (\$1,100,000), the South End (\$1,047,000) and Downtown (\$1,045,000).

Fenway, Charlestown, South Boston, the North End and the West End all exceeded the citywide median of \$655,000. Overall, the median condominium price increased 8.4% between 2017 and 2018, while the sales volume increased 7.4%.

Neighborhood	2017 Single-Family Price	2018 Single-Family Price	Price Percent Change	2017 Sales Volume	2018 Sales Volume	Sales Percent Change
Allston/Brighton .....	5650,500	5712,500	9.5%	50	52	4.0%
Back Bay/Beacon Hill .....	3,764,600	3,327,500	-11.6	24	28	16.7
Charlestown .....	973,150	990,250	1.8	69	66	-4.3
Dorchester .....	486,600	536,000	10.2	169	183	8.3
Downtown .....	*	*	*	-	-	-
East Boston .....	468,650	558,500	19.2	72	66	-8.3
Fenway .....	*	*	*	1	-	-100.0
Hyde Park .....	403,100	447,500	11.0	162	188	16.0
Jamaica Plain .....	870,700	885,000	1.6	84	92	9.5
Mattapan .....	385,150	410,000	6.5	61	61	0.0
Mission Hill/Longwood .....	*	*	*	4	1	-75.0
North End .....	*	*	*	5	-	-100.0
Roslindale .....	552,650	609,000	10.2	114	129	13.2
Roxbury .....	445,600	457,500	2.7	30	38	26.7
South Boston .....	819,500	835,000	1.9	90	85	-5.6
South Boston Waterfront .....	*	*	*	-	-	-
South End .....	2,663,400	2,709,000	1.7	33	33	0.0
West End .....	*	*	*	-	-	-
West Roxbury .....	589,000	583,000	-1.0	299	281	-6.0
Citywide .....	563,400	600,000	6.5	1,267	1,303	2.8

\* Medians or percentages with a sample size of less than ten are not reliable.  
 Note 1: The prices and volumes in the above table exempt all sales of properties of less than \$25,000 because these low price sales are not considered to be "arms-length" transactions.  
 Note 2: Data in the above table do not include "paired-sales" so the size, quality and type of houses sold vary from year-to-year.  
 Source: City of Boston, Department of Neighborhood Development using Banker & Tradesman data, January 2019.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 21

Short Term Trends in Housing Prices						
Median Sales Prices and Sales Volume of Condominiums						
In Boston's Neighborhoods, Calendar Years 2017 and 2018						
(In Fixed 2018 Dollars)						
Neighborhood	2017 Condo Price	2018 Condo Price	Price Percent Change	2017 Sales Volume	2018 Sales Volume	Sales Percent Change
Allston/Brighton.....	5435,350	5506,250	16.3%	397	558	40.6%
Back Bay/Beacon Hill .....	1,022,350	1,100,000	7.6	559	525	-6.1
Charlestown .....	694,000	710,000	2.3	310	314	1.3
Dorchester .....	441,000	475,000	7.7	550	482	-12.4
Downtown .....	1,224,150	1,045,000	-14.6	311	344	10.6
East Boston .....	466,100	499,950	7.3	279	270	-3.2
Fenway .....	643,300	916,100	42.4	174	209	20.1
Hyde Park .....	258,350	305,000	18.1	54	55	1.9
Jamaica Plain .....	534,200	605,000	13.3	428	420	-1.9
Mattapan .....	322,700	345,000	6.9	42	84	100.0
Mission Hill/Longwood.....	309,200	535,000	73.0	90	45	-50.0
North End.....	748,300	689,000	-7.9	148	155	4.7
Roslindale .....	430,250	455,000	5.8	162	179	10.5
Roxbury .....	489,650	485,000	-0.9	110	171	55.5
South Boston .....	664,800	731,000	10.0	741	788	6.3
South Boston Waterfront.....	1,014,150	2,026,500	99.8	49	185	277.6
South End .....	947,550	1,047,000	10.5	547	562	2.7
West End .....	742,650	699,500	-5.8	94	116	23.4
West Roxbury .....	353,400	388,000	9.8	155	121	-21.9
Citywide .....	604,400	655,000	8.4	5,200	5,583	7.4

Note 1: The prices and volumes in the above table exempt all sales of properties of less than \$25,000 because these low price sales are not considered "arms-length" transactions.

Note 2: Data in the above table do not include "paired-sales" so the size, quality and type of houses sold vary from year-to-year.

Source: City of Boston, Department of Neighborhood Development using Banker & Tradesman data, January 2019.

Source: City of Boston General Obligation Bond Offering, 2019 Series A - Appendix A-Exhibit III Selected Demographic & Economic Information, March 3, 2019, p. 22

## **STUDY AREA HOUSING MARKET OUTLOOK**

Based on the preceding analysis, the key market observations and housing market outlook for each of the neighborhoods surrounding Northeastern are summarized as follows.

### **Key Market Observations**

- Boston is a young city - with over 60% of the population in Millennial or younger cohorts, and Boston is growing with continued economic development successes expected to draw new employers to the City over the next five years and beyond.
- Growth in NU study area submarkets is forecast to be roughly proportionate to expected City-wide increases, however, increases in the younger population cohorts (including students) are expected to be very modest to declining as institutional demand is flattening and price pressures emanating from the downtown core neighborhoods make housing options in these neighborhoods less affordable for the youngest households – including students.
- Demand for housing in the City and NU submarkets will continue to be oriented to rental product as those seeking housing in the Boston markets overwhelmingly consist of one and two person, non-family households, for whom homeownership is either inconsistent with lifecycle or circumstances or simply out of reach financially.
- Despite major supply additions in recent years, the effects of economic growth in metro-Boston and the City are clearly being felt in the both the local rental apartment and ownership housing markets, with accelerating price growth in the most recent few years far exceeding either CPI or increases in annual wages and household income.
- Also note that if supply deliveries falter as a result of economic changes (e.g. recession or other economic shock) or City housing policy (e.g. rent control or other disincentives to investment and production), pricing pressure is sure to accelerate.
- The pricing pressures are most acute in the urban core submarkets (Seaport, Back Bay/Beacon Hill, South End and Downtown), but the search for value and better affordability is pushing housing consumers away from the downtown, toward other walkable and transit accessible “next tier” neighborhoods like the Fenway, Mission Hill and Lower Roxbury locations surrounding NU, driving rents and sale prices in these submarkets to historic highs and rental vacancy and sale inventory levels to historic lows.
- These submarkets, while strongly influenced by student demand, are increasingly affected by accelerating change in the broader market, trends that are expected to continue for the foreseeable future and will shape the future of these markets through 2023 forecast period and beyond.

## **Mission Hill**

Mission Hill has little market rate multi-family stock to serve the dominant one and two person household demand cohorts but is still inexpensive enough for the economics to work for these younger, non-family households if they cluster. We note that it is likely to become more difficult, even with clustering, for undergraduates to compete with working mingles households for existing product if prices continue to grow, as expected. We note as well that the lack of land availability and the lack of appetite for new construction at scale amplifies the price pressures for existing product in this neighborhood.

## **Fenway**

In the Fenway, the existing stock and what is being developed new (large scale projects designed to meet a modern market standard), are a perfect match to today's (and tomorrow's) small renter household market demand, so will continue to draw this group but at higher prices. The condominium market is expected to gain momentum here as a price alternative for Back Bay and South End consumers seeking smaller units appropriate to the dominant one and two person household ownership demand.

## **South End**

The South End is already too expensive for most young mingles households – and certainly out of reach for undergraduates, no matter how they cluster. Even homeownership demand here is skewing older and richer. That said, like the Fenway, there is land available in this neighborhood to support large scale projects designed to meet a modern market standard, so expect this neighborhood to continue attracting small renter and condominium ownership demand but at higher prices.

## **Roxbury**

Roxbury has little market rate multi-family stock and has yet to experience the multi-bedroom roommate clustering at the level seen in Mission Hill, but probably will. Unlike Mission Hill, there is ample land availability and an appetite for new construction at a scale that can help to tamp down price pressures for existing product in this neighborhood.

## **STUDENT HOUSING MARKET ANALYSIS**

Having set the market context, the balance of the report examines the student housing market and specifically, the influences of Northeastern students on the housing markets within the four neighborhoods that abut the campus. Information regarding student enrollments and housing accommodations was obtained from the City's University Accountability Office (UAO) Reports and the most recent report on Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), with additional detail concerning its students and housing stock provided by Northeastern.

### **Boston Student Housing Market Trends**

#### *Student Enrollment Trends*

Based on City-wide (UAO) data for the 2017-2018 academic year, the most recent year for which was available at year end 2018 (the effective date of our study), 147,689 students were enrolled in Boston academic institutions, up from 143,732 in the 2013-2014 academic year. Despite increased enrollments over the 2013-2017 period, NU remained a consistent 21% of student enrollments in the City of Boston.

As indicated by the tables that follow, the growth in graduate student enrollment is outpacing undergraduate enrollment. Since 2013, Grad enrollment has grown by 7.7%, while the growth for undergrads has remained flat. The same pattern holds for NU, where the increase in graduate enrollment (3,212 students) is over 3.5 times the increase undergraduate enrollment (889 students).

Consistent with the historic trend highlighted above, the supply-demand analysis presented earlier underscores stable to declining Boston undergraduate numbers across the City and in the surrounding NU neighborhoods over the next five years, in part owing to the growth in online education, more robust study-abroad programs and other hybrid educational programs influencing the higher ed delivery system.

Also note that the DND report observes that because graduate students are often working adults, fewer of them are entering the private housing market exclusively to study, unlike the undergraduate student population. This means that growth in graduate enrollment has less impact on the private housing market than the corresponding growth in undergraduate enrollment.

The vast majority of enrollment across the City reflects full time students - 93% of Undergrads and 80% of Grad students. The same pattern holds for NU but to an even greater degree - 99% of Undergrads and 89% of Grad students.

### CITY-WIDE ENROLLMENT TRENDS BY SCHOOL

Institution Name	Total Enrollment Counts					Difference 2013-2017		Difference 2016-2017	
	Total 2013	Total 2014	Total 2015	Total 2016	Total 2017	Count	%	Count	%
Bay State College	1,194	1,090	903	653	560	-538	-49%	-93	-14.2%
Benjamin Franklin Institute	463	485	460	492	540	77	16.6%	48	9.8%
Berklee College of Music	4,519	4,710	4,474	4,509	4,493	-26	-0.6%	-16	-0.4%
Boston Architectural College	725	757	695	675	656	-69	-9.5%	-19	-2.8%
Boston Baptist College	96	97	92	77	99	3	3.1%	22	28.6%
Boston College	13,525	13,575	13,694	13,851	13,996	471	3.5%	145	1.0%
Boston Conservatory	774	730	801	797	872	98	3.0%	75	9.4%
Boston University	27,508	26,925	27,577	27,890	27,861	173	0.6%	-209	-0.7%
Emerson College	4,523	4,535	4,475	4,450	4,494	-29	-0.6%	44	1.0%
Emmanuel College	2,320	2,199	2,092	2,104	2,011	-309	-13.3%	-93	-4.4%
Fisher College	978	921	1,005	1,005	993	15	1.5%	-12	-1.2%
Harvard University	3,830	3,966	4,019	4,072	3,924	94	2.5%	-148	-3.6%
MA College of Art & Design	1,910	1,710	1,760	1,785	1,866	-44	-2.3%	81	4.5%
MA College of Pharmacy & Health Sci	4,469	4,650	4,622	4,467	4,452	-17	0.4%	-15	-0.3%
MA Institute of Technology	11,301	11,319	11,359	11,395	11,434	133	1.2%	39	0.3%
MGH Inst. of Health Professions	1,302	1,426	1,418	1,561	1,581	279	21.4%	20	1.3%
NE College of Optometry	502	519	511	533	528	26	5.2%	-5	-0.9%
New England Conservatory	812	641	789	819	844	32	3.9%	25	3.1%
New England Law Boston	964	869	681	622	560	-404	-41.96%	-62	-10.0%
<b>Northeastern University</b>	<b>29,755</b>	<b>30,763</b>	<b>31,981</b>	<b>32,817</b>	<b>30,538</b>	<b>4,101</b>	<b>15.5%</b>	<b>1,976</b>	<b>6.9%</b>
School of Museum of Fine Arts	651	510	499	328	293	-358	-55.0%	-35	-10.7%
SHOWA Institute	263	258	270	229	222	-41	-15.6%	-7	-3.1%
Simmons College	4,655	3,996	4,316	4,367	6,300	1,645	35.3%	1,933	44.3%
St John Seminary	N/A	165	209	193	191	-1	-0.5%	-2	-1.0%
Suffolk University	8,437	8,155	7,800	7,378	6,832	-1,605	-19.0%	-546	-7.4%
Tufts Univ. (Health Sciences)	2,632	2,778	2,786	2,834	2,790	158	6.0%	-44	-1.6%
University of MA-Boston	12,804	13,176	13,540	13,390	12,964	160	1.2%	-426	-3.2%
Urban College of Boston	767	811	853	815	755	-12	1.6%	-60	-7.4%
Wentworth Institute	3,952	4,485	4,576	4,414	4,409	457	11.6%	-5	-0.1%
Wheelock College	1,323	1,319	1,173	1,053	811	-512	-38.7%	-242	-23.0%
<b>TOTAL ENROLLMENT</b>	<b>143,732</b>	<b>143,932</b>	<b>145,606</b>	<b>145,320</b>	<b>147,689</b>	<b>3,957</b>	<b>2.8%</b>	<b>2,369</b>	<b>1.6%</b>
<b>Northeastern University %</b>	<b>21%</b>	<b>21%</b>	<b>22%</b>	<b>23%</b>	<b>21%</b>				

Total enrollment figures include both full-time and part-time students. The Northeastern enrollment numbers from 2013-2016 have been revised because the previous reporting included online students.

Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 3

### CITY-WIDE ENROLLMENT TRENDS BY SCHOOL AND DEGREE PROGRAM

Institution Name	Undergraduate Enrollment				Graduate Enrollment			
	2013	2017	Change	% Change	2013	2017	Change	% Change
Bay State College	1,098	560	-538	-49.0%	0	0	0	N/A
Benjamin Franklin Institute	463	540	77	16.6%	0	0	0	N/A
Berklee College of Music	4,402	4,449	47	1.1%	117	44	-73	-62.4%
Boston Architectural College	407	307	-100	-24.6%	318	349	31	9.7%
Boston Baptist College	96	99	3	3.1%	0	0	0	N/A
Boston College	9,049	9,358	309	3.4%	4,476	4,638	162	3.6%
Boston Conservatory	545	612	67	12.3%	229	260	31	13.5%
Boston University	16,871	16,812	-59	-0.3%	10,637	10,869	232	2.2%
Emerson College	3,720	3,841	121	3.3%	803	653	-150	-18.7%
Emmanuel College	2,059	1,881	-178	-8.6%	261	130	-131	-50.2%
Fisher College	978	952	-26	-2.7%	0	41	41	N/A
Harvard University	0	0	0	N/A	3,830	3,924	94	N/A
MA College of Art & Design	1,776	1,739	-37	-2.1%	134	127	-7	-5.2%
MA College of Pharmacy & Health Sciences	3,499	2,750	-749	-21.4%	970	1,702	732	75.5%
MA Institute of Technology	4,528	4,544	16	0.4%	6,773	6,890	117	1.7%
MGH Inst. of Health	307	559	252	82.1%	995	1,022	27	2.7%
NE College of Optometry	0	0	0	N/A	502	528	26	N/A
New England Conservatory	430	436	6	1.4%	382	408	26	6.8%
New England Law Boston	0	0	0	N/A	964	560	-404	N/A
<b>Northeastern University</b>	<b>17,924</b>	<b>18,813</b>	<b>889</b>	<b>5.0%</b>	<b>8,513</b>	<b>11,725</b>	<b>3,212</b>	<b>37.7%</b>
School of Museum of Fine	484	222	-262	-54.1%	167	71	-96	-57.5%
SHOWA Institute	263	222	-41	-15.6%	0	0	0	N/A
Simmons College	1,732	1,767	35	2.0%	2,923	4,533	1,610	55.1%
St John Seminary	43	26	-17	-39.5%	149	165	16	10.7%
Suffolk University	5,593	5,067	-526	-9.4%	2,844	1,765	-1,079	-37.9%
Tufts Univ. (Health Sciences)	0	0	0	N/A	2,632	2,790	158	N/A
University of MA-Boston	10,122	10,548	426	4.2%	2,682	2,416	-266	-9.9%
Urban College of Boston	767	755	-12	-1.6%	0	0	0	N/A
Wentworth Institute	3,708	4,219	511	13.8%	244	190	-54	-22.1%
Wheelock College	859	604	-255	-29.7%	464	207	-257	-55.4%
<b>TOTAL ENROLLMENT</b>	<b>91,723</b>	<b>91,682</b>	<b>-41</b>	<b>0.0%</b>	<b>52,009</b>	<b>56,007</b>	<b>3,998</b>	<b>7.7%</b>
<b>Northeastern University</b>	<b>20%</b>	<b>21%</b>			<b>16%</b>	<b>21%</b>		

Total enrollment figures include both full-time and part-time students. The Northeastern enrollment numbers from 2013-2016 have been revised because previous reporting included online students.

Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 16

### CITY-WIDE ENROLLMENT TRENDS BY SCHOOL, DEGREE PROGRAM & STATUS

Institution Name	Undergraduate Enrollment			Graduate Enrollment		
	Full Time	Part Time	Total	Full Time	Part Time	Total
Bay State College	374	186	560	0	0	0
Benjamin Franklin Institute	468	72	540	0	0	0
Berklee College of Music	3,968	481	4,449	20	24	44
Boston Architectural College	195	112	307	267	82	349
Boston Baptist College	59	40	99	0	0	0
Boston College	9,358	0	9,358	3,514	1,124	4,638
Boston Conservatory	605	7	612	237	23	260
Boston University	16,571	241	16,812	8,992	1,877	10,869
Emerson College	3,788	53	3,841	569	84	653
Emmanuel College	1,840	41	1,881	0	130	130
Fisher College	744	208	952	12	29	41
Harvard University	0	0	0	3,559	365	3,924
MA College of Art & Design	1,662	77	1,739	67	60	127
MA College of Pharmacy & Health Sciences	2,579	171	2,750	1,661	41	1,702
MA Institute of Technology	4,510	34	4,544	6,642	248	6,890
MGH Inst. of Health Professions	196	363	559	760	262	1,022
NE College of Optometry	0	0	0	528	0	528
New England Conservatory	407	29	436	384	24	408
New England Law Boston	0	0	0	380	180	560
<b>Northeastern University</b>	<b>18,645</b>	<b>168</b>	<b>18,813</b>	<b>10,492</b>	<b>1,233</b>	<b>11,725</b>
School of Museum of Fine Arts	209	13	222	67	4	71
SHOWA Institute	222	0	222	0	0	0
Simmons College	1,558	209	1,767	1,622	2,911	4,533
St John Seminary	26	0	26	100	65	165
Suffolk University	4,792	275	5,067	1,104	661	1,765
Tufts Univ. (Health Sciences)	0	0	0	2,678	112	2,790
University of MA-Boston	8,314	2,234	10,548	953	1,463	2,416
Urban College of Boston	67	688	755	0	0	0
Wentworth Institute	3,876	343	4,219	83	107	190
Wheelock College	593	11	604	115	92	207
<b>TOTAL ENROLLMENT</b>	<b>85,626</b>	<b>6,056</b>	<b>91,682</b>	<b>44,806</b>	<b>11,201</b>	<b>56,007</b>
<b>Northeastern University</b>	<b>22%</b>	<b>3%</b>	<b>21%</b>	<b>23%</b>	<b>11%</b>	<b>21%</b>

Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 17

#### Greater Boston Student Housing Overview

As set forth in the latest DND report and shown in the following table, just over 50,000 or one in three students in Greater Boston are housed on-campus or in university-provided housing (comprised of 44,189 undergraduates and 6,077 graduates).

### 2017 GREATER BOSTON STUDENT HOUSING CATEGORY BY DEGREE PROGRAM

Living Arrangement	Under-graduates	% of Grand Total	Graduates	% of Grand Total	Total	% of Grand Total
On-Campus or in University Provided Housing	44,189	29.9%	6,077	4.1%	50,266	34.0%
Off-Campus (Not in Private Housing)	14,769	10.0%	17,019	11.5%	31,788	21.5%
Off-Campus (In Private Housing)	33,210	22.5%	32,303	21.9%	65,513	44.4%
Not Categorized	43	0.0%	79	0.1%	122	0.1%
<b>TOTAL</b>	<b>92,211</b>	<b>62.4%</b>	<b>55,478</b>	<b>37.6%</b>	<b>147,689</b>	<b>100.0%</b>

Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 4

More than 97,000 (66%) students were housed off-campus and approximately 65,500 (44%) of off-campus students lived in private housing and half of these were undergraduates and half were graduate students. The recent DND report, further states that almost 32,000 (33%) students living off-campus reside at home or are enrolled in a study abroad or co-op program, and therefore are not believed to have an impact on the private housing market.

#### *City of Boston Student Housing Overview*

As indicated in the table below, of all students enrolled for Fall 2017 in the City of Boston, just over 38,000 (46%) are housed on-campus or in university-provided housing (35,431 undergraduates and 3,020 graduates).

### 2017 CITY OF BOSTON STUDENT HOUSING CATEGORY BY DEGREE PROGRAM

Living Arrangement	Under-graduates	% of Grand Total	Graduates	% of Grand Total	Total	% of Grand Total
On-Campus or in University Provided Housing	35,431	42.5%	3,020	3.6%	38,451	46.1%
Off-Campus (Not in Private Housing)	3,393	4.1%	5,086	6.1%	8,479	10.2%
Off-Campus (In Private Housing)	20,578	24.7%	15,873	19.0%	36,451	43.7%
<b>TOTAL</b>	<b>59,402</b>	<b>71.2%</b>	<b>23,979</b>	<b>28.8%</b>	<b>83,381</b>	<b>100.0%</b>
% of Greater Boston Totals	64%		43%		56%	

Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 7

Nearly 45,000 (54%) students reside off-campus. Approximately 65,500 (44%) of off-campus students reside in private housing. Of these, roughly 56% are undergraduates and 44% are graduate students. Almost 8,500 (10%) students living off-campus reside at home or are enrolled in a study abroad or co-op program, and therefore are not believed to have an impact on the private housing market. As noted by the BPDA analysis, students residing On-Campus or in University-Managed Housing have no impact on the private housing market.

Undergraduate Housing Percentages

As described by the recent DND report and shown in the table below, 60.2% of full-time undergraduates in greater Boston are housed on-campus by their institutions, up from 58.5% last year.

**% OF FULL TIME UNDERGRADUATES HOUSED BY SCHOOL (2017)**

Institution	Enrolled Full-Time Undergrads	Students Provided Housing by School		Students Not in Need of Housing		Students in Need of Housing	
		In University Housing	In University Managed Housing	Off Campus Living at Home	Study Abroad	Off Campus Not at Home	% Students Provided Housing
Bay State College	374	61	0	229	0	84	42.1%
Benjamin Franklin Institute	468	22	0	423	0	23	48.9%
Berklee College of Music	3,968	1,169	0	105	131	2,578	31.3%
Boston Architectural College	195	4	0	21	0	170	2.3%
Boston Baptist College	59	26	22	11	0	0	100.0%
Boston College	9,358	7,582	0	225	254	1,297	85.4%
Boston Conservatory	605	220	0	0	3	383	36.5%
Boston University	16,571	11,418	0	764	434	3,955	74.3%
Emerson College	3,788	1,889	105	1,385	0	405	83.0%
Emmanuel College	1,840	1,051	187	429	28	145	89.5%
Fisher College	744	321	0	169	1	299	55.9%
Harvard University**	0	0	0	0	0	0	N/A
MA College of Art & Design	1,662	715	464	0	5	487	71.2%
MA College of Pharmacy & Health Sciences	2,579	682	2	191	0	1,704	28.6%
MA Institute of Technology	4,510	3,839	366	11	4	286	93.5%
MGH Institute of Health	196	0	0	196	0	188	0.0%
NE College of Optometry	0	0	0	523	5	0	N/A
NE Conservatory of Music	407	221	0	186	0	0	100.0%
New England Law Boston	0	0	0	0	0	0	N/A
<b>Northeastern University</b>	<b>18,645</b>	<b>8,112</b>	<b>485</b>	<b>1,568</b>	<b>2,006</b>	<b>6,474</b>	<b>57.0%</b>
School of Museum of Fine Arts	209	99	0	24	2	84	54.1%
SHOWA Institute	222	222	0	0	0	0	100.0%
Simmons College	1,558	1,100	0	16	0	442	71.3%
St John Seminary	26	18	0	0	0	8	69.2%
Suffolk University	4,792	1,254	0	1,561	27	1,950	39.1%
Tufts University (Health	0	0	0	0	0	0	N/A
University of MA-Boston*	8,314	0	0	0	0	8,314	0.0%
Urban College of Boston	67	0	0	67	0	0	N/A
Wentworth Institute	3,876	2,080	0	1,152	0	644	76.4%
Wheelock College	593	353	0	185	3	52	87.2%
<b>TOTAL FULL TIME</b>	<b>85,626</b>	<b>42,458</b>	<b>1,631</b>	<b>9,441</b>	<b>2,903</b>	<b>29,784</b>	<b>60.2%</b>
<b>PART-TIMERS (ALL SCHOOLS)</b>	<b>6,056</b>	<b>63</b>	<b>37</b>	<b>2,400</b>	<b>25</b>	<b>3,426</b>	<b>-</b>
<b>GRAND TOTAL</b>	<b>91,682</b>	<b>42,521</b>	<b>1,668</b>	<b>11,841</b>	<b>2,928</b>	<b>33,210</b>	<b>-</b>

This table calculates the percentage of students housed for the entire enrolled undergraduate (full-time) population, not just Boston. Part-time students are excluded from the calculation as these students generally do not seek housing provided by schools. Data provided by UMB and MGH Institute of Health Professionals did not distinguish between students residing off-campus at-home and off-campus not-at-home and are identified by an asterisk. The students at MGH are categorically treated as off-campus not-at-home given the age of its students and purpose of their undergraduate degree. The students at UMB are categorized as off-campus not-at-home. Neither UMB nor MGH currently have on-campus housing. Schools with \*\* reflect Boston-based programs only.

Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 6

In the 2017-2018 academic year NU housed 57% of its total full time undergraduates (excluding students living at home or abroad), compared to 47% in the 2013-2014 academic year.

*Undergraduates Living in Private Off-Campus Housing in Boston*

According to DND’s data, over 21,000 full and part-time undergraduates lived in privately-owned housing in the City of Boston in 2017, reflecting a net decrease of 256 (-1%) undergraduates in the private housing market for the 2017/2018 academic year.

**UNDERGRADUATES IN THE PRIVATE HOUSING MARKET BY SCHOOL**

Institution	2016	2017	Change: 2016 to 2017	% Change: 2016 to 2017
Bay State College	85	64	-21	16%
Benjamin Franklin Institute	113	7	-106	-94%
Berklee College of Music	2,727	2,704	-23	-1%
Boston Architectural College	56	43	-13	-23%
Boston Baptist College	0	0	0	N/A
Boston College	1,066	1,057	-9	-1%
Boston Conservatory	362	360	-2	-1%
Boston University	2,926	2,776	-150	-5%
Emerson College	240	298	58	24%
Emmanuel College	128	103	-25	-20%
Fisher College	87	120	33	38%
Harvard University	0	0	0	N/A
MA College of Art & Design	294	250	-44	-15%
MA College of Pharmacy & Health Sciences	858	923	65	8%
MA Institute of Technology	73	65	-8	-11%
MGH Institute of Health Professions	0	0	0	N/A
NE College of Optometry	0	0	0	N/A
NE Conservatory of Music	0	0	0	N/A
New England Law Boston	0	0	0	N/A
<b>Northeastern University*</b>	<b>5,409</b>	<b>5,597</b>	<b>188</b>	<b>3%</b>
School of Museum of Fine Arts	66	56	-10	-15%
SHOWA Institute	0	0	0	N/A
Simmons College	116	149	33	28%
St John Seminary	0	8	8	N/A
Suffolk University	1,543	1,509	-34	-2%
Tufts University (Health Sciences)	0	0	0	N/A
University of MA-Boston**	4,113	3,999	-114	-3%
Urban College of Boston	0	0	0	N/A
Wentworth Institute	543	480	-63	-12%
Wheelock College	29	10	-19	-66%
<b>TOTAL</b>	<b>20,578</b>	<b>21,057</b>	<b>-256</b>	<b>-1%</b>

This table includes both full-time and part-time students. The Northeastern 2016 private housing count is an estimate given data incompatibility issues. UMass Boston reflects gross off-campus count since they did not distinguish between students residing off-campus (living-at-home) and off-campus (not-at-home).

Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 8

In 2017, 5,597 full-time Northeastern undergrads lived in private housing in Boston, an increase of 188 students over the prior year.

*Graduates Living in Private Off-Campus Housing in Boston*

According to DND’s data, the graduate student population living in private housing was trending down in 2017 - with a 2% decrease over the prior year. The decline is spread throughout various schools, including NU, which saw a decrease of 238 (-4%).

**GRADUATE STUDENTS IN THE PRIVATE HOUSING MARKET BY SCHOOL**

Institution	2016	2017	Change: 2016 to 2017	% Change: 2016 to 2017
Bay State College	0	0	0	N/A
Benjamin Franklin Institute	0	0	0	N/A
Berklee College of Music	11	18	7	64%
Boston Architectural College	65	52	-13	-20%
Boston Baptist College	0	0	0	N/A
Boston College	882	894	12	1%
Boston Conservatory	151	179	28	19%
Boston University	4,092	4,040	-52	-1%
Emerson College	139	113	-26	-19%
Emmanuel College	0	0	0	N/A
Fisher College	0	4	4	N/A
Harvard University	482	509	27	N/A
MA College of Art & Design	45	33	-12	-27%
MA College of Pharmacy & Health Sciences	811	969	158	19%
MA Institute of Technology	469	497	28	6%
MGH Institute of Health Professions	0	0	0	N/A
NE College of Optometry	0	0	0	N/A
NE Conservatory of Music	0	0	0	N/A
New England Law Boston	0	0	0	N/A
<b>Northeastern University</b>	<b>5,376</b>	<b>5,138</b>	<b>-238</b>	<b>-4%</b>
School of Museum of Fine Arts	54	45	-9	-17%
SHOWA Institute	0	0	0	N/A
Simmons College	466	475	9	2%
St John Seminary	0	27	27	N/A
Suffolk University	468	406	-62	-13%
Tufts University (Health Sciences)	1,664	1,512	-152	-9%
University of MA-Boston*	1,011	928	-83	-8%
Urban College of Boston	0	0	0	N/A
Wentworth Institute	30	34	4	13%
Wheelock College	25	0	-25	-100%
<b>TOTAL</b>	<b>16,241</b>	<b>15,873</b>	<b>-368</b>	<b>-2%</b>

This table includes both full-time and part-time students. UMB shows gross off-campus population only (not off-campus not-at-home) given that they did not distinguish between off-campus sub-groups. MGH Institute of Health Professionals, New England College of Optometry, New England Conservatory of Music, and New England Law of Boston, also did not distinguish between the off-campus subgroups, but their students are not included in this table as they most likely would be categorized as living-at-home.

Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 9

### Top Ten Neighborhoods Supporting Off-Campus Students

Based on data compiled by DND, the zip codes with the greatest number of students were 02115 (Fenway/Kenmore), 02120 (Mission Hill), 02134 (Allston), 02215 (Longwood/Mission Hill/Fenway), and 02135 (Brighton). Collectively, these zip codes represent 63% of the students living in Boston’s private housing market in the 2017/2018 academic year.

### TOP TEN OFF-CAMPUS STUDENT HOUSING LOCATIONS

Neighborhood: 2017	Zip Code	Undergraduates Off-Campus	% Total Boston Students Off-Campus	Graduates Off-Campus	% Total Boston Students Off-Campus	Total Off-Campus	% Total Boston Students Off-Campus
Fenway-Kenmore	02115 & 02215	5,749	16%	3,311	9%	9,060	25%
Mission Hill	02120	2,757	8%	2,109	6%	4,866	13%
Roxbury	02119	594	2%	332	1%	926	3%
South End	02118	678	2%	1,020	3%	1,698	5%
<b>Total NU Study Area</b>		<b>9,778</b>	<b>27%</b>	<b>6,772</b>	<b>19%</b>	<b>16,550</b>	<b>45%</b>
Back Bay	02116	365	1%	469	1%	834	2%
Jamaica Plain	02130	539	1%	843	2%	1,382	4%
Upham's Corner	02125	1,300	4%	465	1%	1,765	5%
Allston/Brighton	02134 & 02135	4,280	12%	4,206	12%	8,486	23%
<b>Total of Top 10 Off-Campus Student Locations</b>		<b>16,262</b>	<b>45%</b>	<b>12,755</b>	<b>35%</b>	<b>29,017</b>	<b>80%</b>

Based on geocoded Off-Campus addresses obtained from Fall 2017 University Accountability Reports. While these are mostly students in the private housing market, totals may include addresses for students living at home, or in a university-managed facility. These figures include both full-time and part-time students.

Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 22

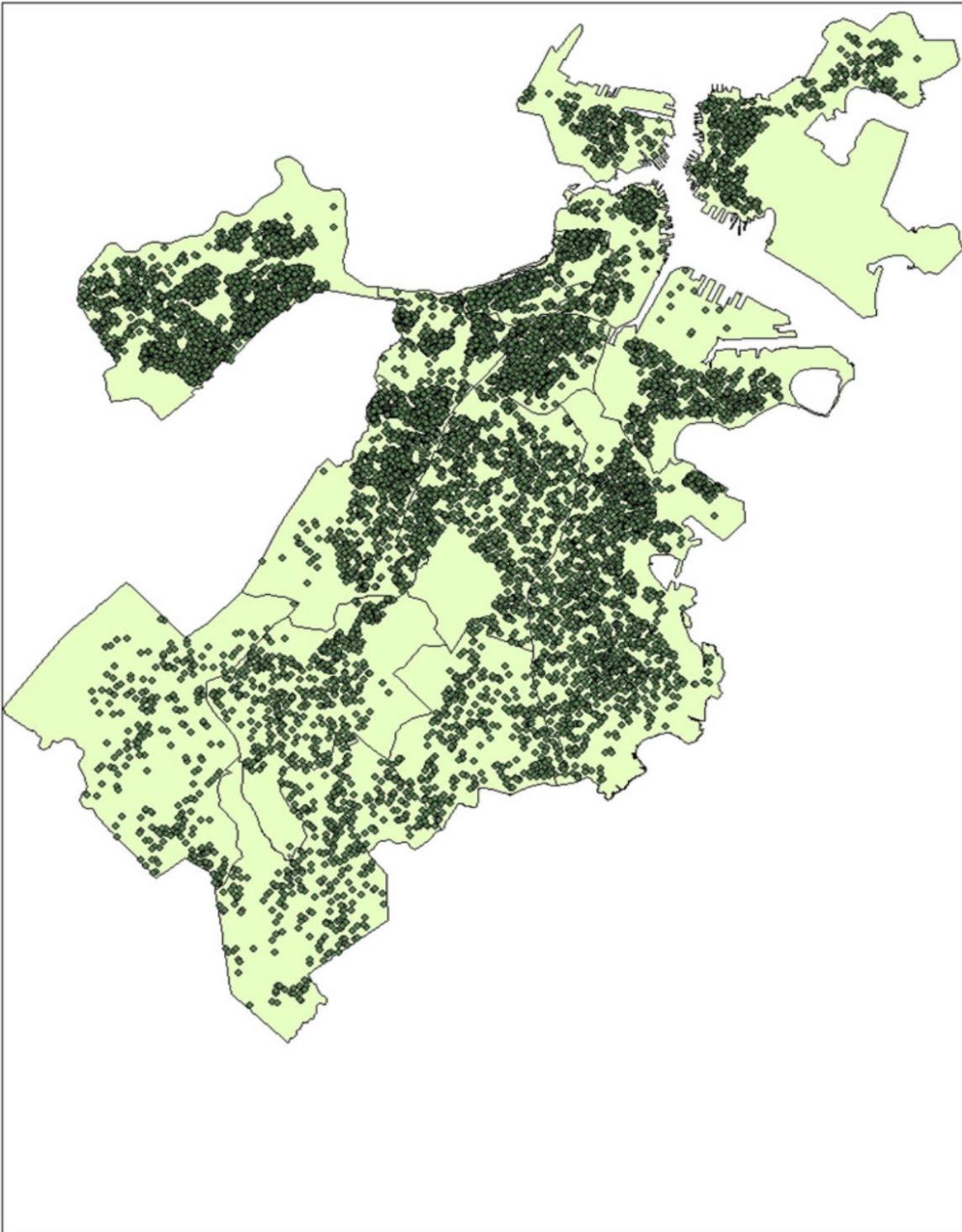
The remaining top ten zip codes where students live account for 19% of all student addresses and include: 02125 (Upham’s Corner, Columbia Point), 02118 (South End), 02130 (Jamaica Plain), 02119 (Roxbury), and 02116 (Back Bay). The remaining 18% are scattered across many other zip codes.

Together, the neighborhoods surrounding the NU campus (Fenway, Mission Hill, Roxbury and the South End) comprise 45% (16,550 students) of all students living in Boston privately owned housing. Of these, 60% are undergrads and 40% are grad students.

According to data compiled by the NU Registrar's Office, NU students represented approximately 52% of students living in private housing in these neighborhoods (8,640 students) in 2017. Of these 4,630 were undergraduates.

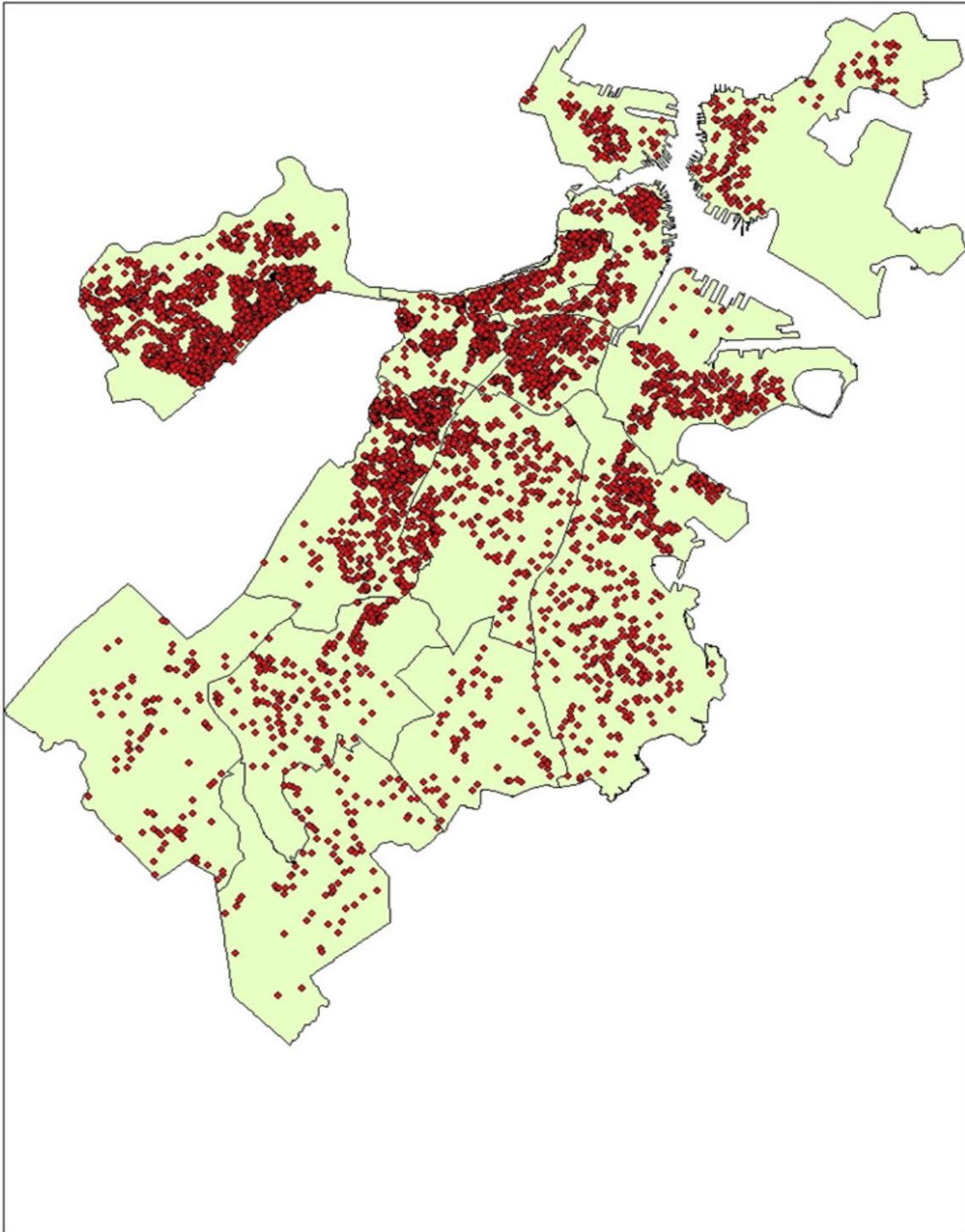
To further underscore the concentrations, the maps that follow show 2017 student housing locations for all students (Undergraduate and Graduate) from all schools across the City.

**2017 UNDERGRADUATE HOUSING DISTRIBUTIONS – ALL SCHOOLS**



Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 20

**2017 GRADUATE HOUSING DISTRIBUTIONS – ALL SCHOOLS**



Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 21

### Off-Campus Housing Types

According to DND’s recent report, nearly 30% of Boston’s off-campus students (9,949) live in private housing properties of three units or fewer. Originally built to house Boston’s working families, many of Boston’s triple-deckers and other one-, two- and three-family properties, are no longer a match to Boston’s now smaller and predominantly non-family households. These units are now occupied by young professional singles and couples, and other non-family households including students.

#### STUDENTS LIVING OFF-CAMPUS BY HOUSING TYPE

	Property Type	2017 Student Count	% of Addresses
<b>Undergraduates</b>	3 units or less (excluding condos)	6,441	32%
	Students in Condos	3,584	18%
	Students living in Apartments (4 units or more)	5,105	25%
	Students in Multi-Use Properties	3,608	18%
	Other Properties	1,384	7%
<b>Graduates</b>	3 units or less (excluding condos)	3,508	23%
	Students in Condos	3,152	21%
	Students living in Apartments (4 units or more)	4,743	31%
	Students in Multi-Use Properties	2,683	18%
	Other Properties	1,065	7%
<b>All Students</b>	3 units or less (excluding condos)	9,949	28%
	Students in Condos	6,736	19%
	Students living in Apartments (4 units or more)	9,848	28%
	Students in Multi-Use Properties	6,291	18%
	Other Properties	2,449	7%

15 Based on geocoded Off-Campus addresses obtained from Fall 2017 University Accountability Reports. Property categories are based on the Massachusetts Property Classification System Occupancy Codes. “3 Unit or Less” refers to residential properties: single-family (code 101), 2-Family (code 104) and 3-Family (code 105). The condominium category (code 102/995) counts instances in which a condominium exists, irrespective of whether the condominium is located in a house or apartment building. For example, condos in a three-unit building are reported as condominiums, not as a 3-family. Apartments are buildings with 4+ units (codes 111-114). Multi-Use properties are buildings with multiple uses such as residential, commercial, condominium, or office (code 10-31). These figures include both full-time and part-time students.

Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 11

In addition, students are living in condominium units purchased by parents as an investment to provide housing while their children are in school, which will later be sold when the student graduates. Other condominium units are rented at a profit to students by investor-owners.

*Permitting and Production of New On-Campus Beds*

In 2011, the City has set a target to create 18,500 dorm beds by 2030. Fully 69% of the dorm bed goal is met by considering dorm beds built completed 2011 (4,241), beds currently or soon to be under construction (2,886), and future projects (6,223) in the pipeline (includes proposed additions made public after the publication of the 2017/2018 DND report). After considering dorm bed demolitions, the net number built, and planned production is just over 12,000 (65% of the goal).

**CITY PRODUCTION TARGETS FOR 2030 AND PROGRESS TO DATE**

<b>Goal for Total Beds by 2030</b>	<b>18,500</b>	<b>% of Total</b>
<b>Beds Permitted 2011-2017</b>	<b>6,504</b>	<b>35%</b>
2011	1,031	6%
2012	638	3%
2013	272	1%
2014	490	3%
2015	1,187	6%
2016	1,780	10%
2017	1,106	6%
<b>Beds Built 2011-2017</b>	<b>4,241</b>	<b>23%</b>
Annual Pace	606	3%
<b>Currently In/Soon to be in Construction</b>	<b>2,886</b>	<b>16%</b>
<b>NU Beds/% of Construction</b>	<b>825</b>	<b>29%</b>
<b>Pipeline</b>	<b>6,223</b>	<b>34%</b>
Planned and Committed as of 2018 <sup>1</sup>	3,223	17%
Planned but Not yet Committed as of 2018 <sup>2</sup>	3,000	16%
<b>NU Beds/% of Pipeline</b>	<b>175</b>	<b>3%</b>
<b>Total Built and Planned Production</b>	<b>13,350</b>	<b>72%</b>
<b>Demolitions</b>	<b>-1,334</b>	<b>-7%</b>
Demolitions (2011-2017)	-1,114	-6%
Planned Demolitions	-220	-1%
<b>Net Built and Planned Production <sup>1</sup></b>	<b>12,016</b>	<b>65%</b>
Annual Pace	1,502	8%
<b>NU Beds/% of Net Built &amp; Planned</b>	<b>1,000</b>	<b>8%</b>
<b>Beds Left to Plan, Permit &amp; Build</b>	<b>6,484</b>	<b>35%</b>

1) Includes 500 private beds proposed by Scape on Boylston St in the Fenway in 2018

2) Includes 2500 add'l private beds proposed by Scape in the Fenway and 500 beds proposed by Peak in Brighton

Source: BMA and Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 12

Between now and 2030, just under 6,500 beds (35% of the target) remain to be planned, permitted and built to achieve the 18,500 goal.

### Unmet Undergraduate Bed Demand

Nearly 30,000 students occupy beds (equivalent to roughly 12,000 units) in Boston's private housing market, of which NU represents roughly 22% roughly in keeping with its overall share of local enrollment.

### UNDERGRADUATE HOUSING NEED V. PRODUCTION PLANS BY SCHOOL

Institution	Undergrads in Private Housing Market	Dorm Beds Currently or Soon to Be in Construction	In Large Project Review	New Dorm Beds in Pipeline	Current or Planned Demo/Renovations	UG On Campus Housing Shortfall
Bay State College	84					84
Benjamin Franklin Institute	23					23
Berklee College of Music*	2,578			450		2,128
Boston Architectural College	170					170
Boston Baptist College	0					0
Boston College*	1,297			550		747
Boston Conservatory*	383					383
Boston University*	3,955			523		3,432
Emerson College*	405	294				111
Emmanuel College*	148	691			-220	-326
Fisher College	299					299
Harvard University	0					0
MA College of Art & Design	487					487
MA College of Pharmacy & Health	1,704					1,704
MA Institute of Technology	286					286
MGH Institute of Health Professions	0					0
NE College of Optometry	0					0
NE Conservatory of Music*	0					0
New England Law Boston	0					0
<b>Northeastern University*</b>	<b>6,474</b>	<b>825</b>		<b>175</b>		<b>5,474</b>
School of Museum of Fine Arts	84					84
SHOWA Institute	0					0
Simmons College*	442					442
St John Seminary	8					8
Suffolk University*	1,950					1,950
Tufts University (Health Sciences)	0					0
University of MA-Boston	8,314	1,089		1,000		6,225
Urban College of Boston	0					0
Wentworth Institute*	644					644
Wheelock College*	52					52
Other Private Beds Proposed				3,000		
<b>TOTAL</b>	<b>29,784</b>	<b>2,886</b>	<b>0</b>	<b>5,698</b>	<b>-220</b>	<b>21,420</b>

Schools with negative numbers in the unmet housing need column appear to show an intention to build more housing than their student body needs. In actuality, some schools set-up cross leasing arrangements with other schools or may wish to move students from off-campus managed housing, i.e., leased apartments to on-campus dorms.

NU's Lightview Dorm on Burke Street (now under construction) is proposed for 825 beds (13 more than the 812 beds that BPDA reports)

Source: Student Housing Trends 2017/2018 Academic Year published by the City Department of Neighborhood Development (DND), p 13 with revisions to reflect NU production actuals and future targets

Including institutionally and privately sponsored product now in the pipeline, the unaccommodated undergraduate demand will be reduced to 21,420 students.

NU's proposed additions (825 beds under construction and 175 planned) comprise just under 30% of beds under construction and 3% of the future pipeline.

## **Northeastern Student Housing Market Impacts**

The following discussions profile Northeastern student housing supply and demand concluding with an analysis of the impact of NU's off-campus undergraduate residents on the local neighborhood markets described on the previous pages. The intent is to explore both the extent of the existing impact and the likely effects of new Northeastern dormitory construction on the competitive price and occupancy characteristics the local housing market.

### *NU Undergraduate Enrollment Trends and Bed Demand*

In 2013, the NU Undergraduate enrollment was 18,901 students. Of these, 16,630 represented students in need of local housing (not living at home or abroad). These students lived primarily in Boston (79%), 47% lived in NU managed housing, 32% lived in private off-campus housing in all of Boston's neighborhoods and 27% lived in private off-campus housing in the neighborhoods immediately surrounding the campus.

**UNDERGRADUATE ENROLLMENTS AND BED DEMAND (2013-2018-2023)**

All Undergraduate Enrollees (Full & Part Time)	2013	% All UG	2018	% All UG	# Change 2013-18	% Change 2013-18	2023 (Forecast)	% All UG	# Chg 2018-23	% Chg 2018-23	% Chg/Yr 2018-23
1. Boston - On Campus	7,396	39%	8,174	43%	778	11%	9,411	51%	1,237	15%	3%
2. Boston - Off Campus Leased	442	2%	591	3%	149	34%	645	3%	54	9%	2%
3. Boston - Off Campus at Home	545	3%	499	3%	-46	-8%	492	3%	-7	-1%	0%
4. Boston - Off Campus Private	5,308	28%	5,519	29%	211	4%	3,939	21%	-1,580	-29%	-6%
4a. Mission Hill	1,641	9%	1,697	9%	56	3%	1,211	7%	-486	-29%	-6%
4b. Fenway	2,435	13%	2,332	12%	-103	-4%	1,664	9%	-668	-29%	-6%
4c. Roxbury	75	0%	216	1%	141	188%	154	1%	-62	-29%	-6%
4d. South End	323	2%	385	2%	62	19%	275	1%	-110	-29%	-6%
4e. Other Boston	834	4%	889	5%	55	7%	634	3%	-255	-29%	-6%
6a. Outside Boston At Home	N/A	N/A	1,474	8%	N/A	N/A	1,450	8%	-24	-2%	0%
6b. Outside Boston Not At Home	3,484	18%	723	4%	-2,761	-79%	713	4%	-10	-1%	0%
7. Outside Boston Study Abroad/COOP	1,726	9%	1,887	10%	161	9%	1,848	10%	-39	-2%	0%
<b>Grand Enrollment Total</b>	<b>18,901</b>	<b>100%</b>	<b>18,867</b>	<b>100%</b>	<b>-34</b>	<b>0%</b>	<b>18,500</b>	<b>100%</b>	<b>-367</b>	<b>-2%</b>	<b>0%</b>
<b>Bed Demand (Excl. Living @ Home + Abroad)</b>	<b>16,630</b>	<b>88%</b>	<b>15,007</b>	<b>80%</b>	<b>-1,623</b>	<b>-10%</b>	<b>14,708</b>	<b>80%</b>	<b>-299</b>	<b>-2%</b>	
% in Boston	13,146	79%	14,284	95%	1,138	9%	13,995	95%	-289	-2%	
% On Campus (Includes Owned & Leased)	7,838	47%	8,765	58%	927	12%	10,056	68%	1,291	15%	
% Private Off Campus in Boston	5,308	32%	5,519	37%	211	4%	3,939	27%	-1,580	-29%	
% Private in the Target Neighborhoods	4,474	24%	4,630	25%	156	3%	3,304	18%	-1,326	-29%	

In 2018, the NU Undergraduate enrollment was slightly lower at 18,867 students. Of these, 15,007 represented students in need of local housing (not living at home or abroad) a decline in bed demand of fully 1,623 students. These students lived primarily in Boston (95%), 58% lived in NU managed housing (a 10% increase over 2013 representing 927 more students housed), 37% lived in privately-owned housing (211 more than 2013) and 31% lived in private housing in the neighborhoods surrounding the campus (156 more than 2013).

By 2023, the NU Undergraduate enrollment is forecast by NU Administration to stabilize at approximately 18,500 students. Of the total, 14,708 are expected to represent local bed demand, a further decrease of roughly 300 beds. Of these 95% are expected to live in Boston (289 fewer than in 2018), 69% will live in NU managed housing (an 11% increase over the next 5 years representing 1,291 more than 2018), and 27% will live off-campus in privately-owned housing (1,580 fewer than in 2018) and importantly, 18% will live in the surrounding neighborhoods (1,326 fewer than 2018).

*Existing Bed Supply*

In 2018, the NU student housing inventory including the soon to be delivered LightView Residences at 10 Burke Street totaled 9,411 beds in owned property and another 929 beds master-leased in the neighborhoods surrounding the campus (largely in Fenway). The Master lease at 1110 Commonwealth is terminating producing a forecasted 750 bed master leased inventory in 2023.

**2018/2019 MASTER LEASED INVENTORY**

<b>Master-Leased Properties (2018)</b>	<b>Street Address</b>	<b>Type</b>	<b>Total Units</b>	<b>Avg. Occ. Per Unit</b>	<b>Total Beds</b>
1110 Commonwealth Ave	1110 Commonwealth Av	Apartments	89	2.0	179
331 Huntington Ave	331 Huntington Ave	Apartments	15	1.8	27
335 Huntington Ave	335 Huntington Ave	Apartments	14	1.7	24
LP-109 St. Stephen St	LP-109 St. Stephen St	Apartments	13	1.9	25
LP-115 St. Stephen St	LP-115 St. Stephen St	Apartments	32	2.0	65
LP-132 Hemenway St	LP-132 Hemenway St	Apartments	8	3.3	26
LP-136 Hemenway St	LP-136 Hemenway St	Apartments	9	2.3	21
LP-16 Westland Ave	LP-16 Westland Ave	Apartments	6	2.7	16
LP-165 Hemenway St	LP-165 Hemenway St	Apartments	11	2.2	24
LP-171 Hemenway St	LP-171 Hemenway St	Apartments	12	2.2	26
LP-204 Hemenway St	LP-204 Hemenway St	Apartments	16	2.8	44
LP-309 Huntington Ave	LP-309 Huntington Ave	Apartments	2	3.5	7
LP-311 Huntington Ave	LP-311 Huntington Ave	Apartments	10	2.3	23
LP-313 Huntington Ave	LP-313 Huntington Ave	Apartments	8	2.1	17
LP-315 Huntington Ave	LP-315 Huntington Ave	Apartments	10	2.9	29
LP-49 Symphony Rd	LP-49 Symphony Rd	Apartments	23	2.1	48
LP-52 Westland Ave	LP-52 Westland Ave	Apartments	6	4.0	24
LP-84 The Fenway	LP-84 The Fenway	Apartments	11	3.5	38
LP-97 St. Stephen St	LP-97 St. Stephen St	Apartments	21	2.9	61
LP-NU at Douglass Park	LP-NU at Douglass Park	Apartments	57	3.6	205
<b>TOTAL</b>			<b>373</b>	<b>2.5</b>	<b>929</b>

**ON-CAMPUS INVENTORY**

<b>NU Owned Properties (2018)</b>	<b>Street Address</b>	<b>Type</b>	<b>Year Built</b>	<b>Year Acquired</b>	<b>Total Beds</b>
LightView Apartments	10 Burke Street	Apartments	2018	ACC Partnership	825
106 St. Stephen Street	106 St. Stephen Street	Apartments	1923	1975	58
110 St. Stephen Street	110 St. Stephen Street	Apartments	1923	1975	58
116 St. Stephen Street	116 St. Stephen Street	Apartments	1923	1975	58
Levine Hall	122 St. Stephen Street	Apartments	1923	1975	48
319 Huntington Ave.	319 Huntington Avenue	Apartments	c 1916	1982	118
337 Huntington Ave.	337 Huntington Avenue	Apartments	1923	1982	139
407 Huntington Ave.	407 Huntington Avenue	Apartments	1922	1969	77
Rubenstein Hall	464 Huntington Avenue	Apartments	1924	1977	82
768 Columbus Avenue	768 Columbus Avenue	Apartments	1914	1999	15
780 Columbus Avenue	780 Columbus Avenue	Apartments	1912	2001	112
Burstein Hall	454-458-460 Huntingtor	Apartments	1927	Unknown	144
10 Coventry Street	10 Coventry Street	Apartments	2004	2004	153
Davenport Commons A	700 Columbus Avenue	Apartments	2001	2001	379
Davenport Commons B	696 Columbus Avenue	Apartments	2001	2001	224
East Village Apartments	291 St Botolph Street	Apartments	2014	2014	86
East Village Suites	291 St Botolph Street	Hybrid	2014	2014	627
International Village	1155-1175 Tremont St	Hybrid	2009	NU Built	1,186
Hastings Hall		Dorm Style	2012	2012	117
Kennedy Hall	115-119 Hemenway St	Dorm Style	1911	1979	198
Kerr Hall	96 The Fenway	Dorm Style	1913	1973	112
Loftman Hall	163, 157, 153 Hemenwa	Dorm Style Apts	1909	1976-78	209
Light Hall	81-83 St. Stephen Street	Dorm Style	1892	1965	58
Melvin Hall	90 The Fenway	Dorm Style	1913	1965	117
Stetson East	11 Speare Place	Dorm Style	1967	NU Built	286
Smith Hall	125,129,131 Hemenway	Dorm Style	1902	1965	239
Speare Hall	10 Speare Place	Dorm Style	1964	NU Built	404
Stetson West	10 Forsyth Street	Dorm Style	1966	NU Built	536
White Hall	19-21-23 Forsyth Street	Dorm Style	1925	1961	324
Willis Hall	50 Leon Street	Apartments	1979	NU Built	364
West Village A	500-510 Parker Street	Apartments	1999	NU Built	599
West Village B	460 Parker Street (rear)	Apartments	2000	NU Built	219
West Village C	480 Parker Street (rear)	Apartments	2000	NU Built	230
West Village E	10-20 Leon Street	Apartments	2002	NU Built	292
West Village F	40 Leon Street	Apartments	2006	NU Built	229
West Village G	450 Parker Street	Apartments	2004	NU Built	302
West Village H	440 Huntington Avenue	Apartments	2004	NU Built	187
<b>Total Bed Count</b>					<b>9,411</b>

### On Campus Housing Costs

Rates for NU On-Campus beds in 2018/2019 were highly competitive with off-campus alternatives, which generally averaged between \$800 and \$1,000 per bed for multi-occupancy units (3 beds+) and substantially higher - \$1,500+ per bed for 1 and 2 person units of inferior quality.

#### NU STUDENT HOUSING COST SUMMARY 2018/2019 ACADEMIC YEAR

Avg. Monthly Rent Per Bed	% Beds	Beds	Avg. Rent Per Bed	Avg. Rent Per Unit
Owned	91%	9,411	\$1,336	\$2,731
Leased	9%	929	\$1,386	\$3,241
<b>Totals/Averages</b>	<b>100%</b>	<b>10,340</b>	<b>\$1,341</b>	<b>\$2,996</b>

Avg. Monthly Rent Per Bed	% Beds	Beds	Avg. Rent Per Bed	Avg. Rent Per Unit
Apartments	49%	5,102	\$1,496	\$3,125
Hybrids	26%	2,638	\$1,233	\$3,081
Dorms	25%	2,600	\$1,112	\$2,480
<b>Totals/Averages</b>	<b>100%</b>	<b>10,340</b>	<b>\$1,341</b>	<b>\$2,996</b>

Avg. Monthly Rent Per Bed	Avg. Rent Per Bed	Per Unit Equivalent
Single Occupancy	\$1,462	\$1,462
Double Occupancy	\$1,184	\$2,368
Triple Occupancy	\$1,001	\$3,002
Quadruple Occupancy	\$828	\$3,310
<b>Totals/Averages</b>	<b>\$1,341</b>	<b>\$2,996</b>

Monthly rents were calculated assuming an average of four months per semester  
Per unit rents were calculated based on avg. occupancy per unit

NU rates appear well positioned to attract and retain undergraduate student occupancy in the face of off-campus competition.

### NU Bed Supply Trends

As of 2013, the NU bed supply totaled 8,029 existing beds with another 1,129 planned or under construction. Of these, 7,509 were owned (82%), 520 beds were master leased (6%) and the pipeline represented another 12%. Roughly 99% of the existing supply was occupied at the time the survey was undertaken – 99% by undergrads and 1% by grad students (most affiliated with the law school).

**2013 NU HOUSING INVENTORY**

NU Supply-Demand	2013 NU Accommodated UG Demand			
	NU Bed Count (Existing & Planned/UC)	% NU Operated Beds	Occupied Beds	% Occupied
<b>NU Owned Beds</b>	<b>7,509</b>	<b>82%</b>	<b>7,420</b>	<b>99%</b>
Apartments	3,723	41%		
Res Hall traditional dorm	2,600	28%		
Hybrid/Res hall suites	1,186	13%		
<b>NU Master Leased Beds</b>	<b>520</b>	<b>6%</b>	<b>520</b>	<b>100%</b>
<b>Existing NU Operated Beds</b>	<b>8,029</b>	<b>88%</b>	<b>7,940</b>	<b>99%</b>
<b>New Beds Planned/UC</b>	<b>1,129</b>	<b>12%</b>		
Owned beds	720	8%		
Master Leased	409	4%		
<b>Total NU Student Beds (Existing &amp; Proposed)</b>	<b>9,158</b>	<b>100%</b>		
Grad Beds	105	1%		
Under Grad Beds	9,053	99%		
Owned	8,229	90%		
Master Leased	929	10%		

Note that Units Planned and Under Construction in 2013 included 720 beds at East Village (Delivered in 2014).

As of 2018 (see the table that follows), the NU bed supply totaled 9,515 existing beds, an increase of 1,486 beds owned or operated by the University, with another 825 under construction and about to be delivered on Burke Street.

Of the total, 8,586 were owned (83%), 929 beds were master leased (9%) and the pipeline represented another 8%. Roughly 93% of the existing supply was occupied at the time the survey was undertaken – 99% by undergrads and 1% by grad students (most affiliated with the law school).

Note that Units Planned and Under Construction in 2018 another 825 beds at 10 Burke were Under Construction in 2018.

### 2018 NU HOUSING INVENTORY

NU Supply-Demand	2018 NU Accommodated UG Demand			
	NU Bed Count (Existing & Planned/UC)	% NU Operated Beds	# Change 2013-2018	% Change 2013-2018
<b>NU Owned Beds</b>	<b>8,586</b>	<b>83%</b>	<b>1,077</b>	<b>14%</b>
Apartments	4,173	40%	450	12%
Res Hall traditional dorm	2,600	25%	0	0%
Hybrid/Res hall suites	1,813	18%	627	53%
<b>NU Master Leased Beds</b>	<b>929</b>	<b>9%</b>	<b>409</b>	<b>79%</b>
<b>Existing NU Operated Beds</b>	<b>9,515</b>	<b>92%</b>	<b>1,486</b>	<b>19%</b>
<b>New Beds Planned/UC</b>	<b>825</b>	<b>8%</b>		
Owned beds	825	8%		
Master Leased	0	0%		
<b>Total NU Student Beds (Existing &amp; Proposed)</b>	<b>10,340</b>	<b>100%</b>	<b>1,182</b>	<b>13%</b>
Grad Beds	105	1%	0	0%
Under Grad Beds	10,235	99%	1,182	13%
Owned	9,411	91%	1,182	14%
Master Leased	929	9%	0	0%

By 2023, the NU bed supply is expected to total 10,161 existing beds, a net gain of 646 beds by 2023, with another 175 under construction or planned (note that these may be delivered by 2023, which would increase the 2023 existing count to 10,331 beds).

Of the total, 9,411 will be owned (91%), 750 beds will be master leased (7% - reflecting the elimination of the master lease at 1110 Commonwealth Avenue) with the pipeline (175 beds) represented another 2%. Roughly 100% of the existing supply is assumed to be available for occupancy – 99% by undergrads and 1% by grad students (most affiliated with the law school).

**2023 NU HOUSING INVENTORY FORECAST**

NU Supply-Demand	2023 NU Accommodated UG Demand			
	NU Bed Count (Existing & Planned/UC)	% NU Operated Beds	# Change 2018-2023	% Change 2018-2023
<b>NU Owned Beds</b>	<b>9,411</b>	<b>91%</b>	<b>825</b>	<b>10%</b>
Apartments	4,173	40%	0	0%
Res Hall traditional dorm	2,600	25%	0	0%
Hybrid/Res hall suites	2,638	26%	825	46%
<b>NU Master Leased Beds</b>	<b>750</b>	<b>7%</b>	<b>-179</b>	<b>-19%</b>
<b>Existing NU Operated Beds</b>	<b>10,161</b>	<b>98%</b>	<b>646</b>	<b>7%</b>
<b>New Beds Planned/UC</b>	<b>175</b>	<b>2%</b>	<b>0</b>	<b>0%</b>
Owned beds	175	2%		
Master Leased	0	0%		
<b>Total NU Student Beds (Existing &amp; Proposed)</b>	<b>10,336</b>	<b>100%</b>	<b>-4</b>	<b>0%</b>
Grad Beds	105	1%	0	0%
Under Grad Beds	10,231	99%	-4	0%
Owned	9,586	93%	175	2%
Master Leased	750	7%	-179	-19%

Note that units planned and under construction for 2023 include 175 units (at unspecified locations), which are currently being proposed by NU for delivery beyond 2018 and might be in place by 2023. Note that the most the recent BPDA report carries an additional 200 units (25 fewer), accounting for the 25 unit increase at 10 Burke Street, originally planned for 800 beds – but being delivered at 825 beds.

*NU Accommodated Undergraduate Demand*

As shown in the table on the following page, assuming full availability of all undergraduate beds (excluding 105 beds reserved for graduate students) the NU bed supply accommodated 48% of undergraduate bed demand (Boston & Other but excluding students living at Home and Abroad) in 2013, 63% in 2018 and is expected to fulfill the need for 69% of undergraduates needing housing by 2023. These figures only account for units in place at the start of the 2013, 2018 and 2023 academic years.

**ACCOMMODATED UNDERGRADUATE DEMAND**

NU Supply-Demand	2013 NU Accommodated UG Demand			2018 NU Accommodated UG Demand			2023 NU Accommodated UG Demand		
UG Bed Demand (Boston + Other - Excl. At Home & Abroad)	16,630	% Accommodated @ Full Occupancy (Including Existing Beds Only)	48%	15,007	% Accommodated @ Full Occupancy (Including Existing Beds Only)	63%	14,708	% Accommodated @ Full Occupancy (Including Existing Beds Only)	69%
UG Bed Demand (Boston Only - Excl. At Home & Abroad)	13,146	% Accommodated @ Full Occupancy (Including Existing Beds Only)	61%	14,284	% Accommodated @ Full Occupancy (Including Existing Beds Only)	67%	13,995	% Accommodated @ Full Occupancy (Including Existing Beds Only)	73%

If the existing bed supply is only counted against enrolled undergraduate students that reside in Boston, the percentages of accommodated demand increase to 61% in 2013, 67% in 2018 and 73% in 2023.

*However, the measurements are taken, the rate of undergraduate accommodation in on-campus housing has grown substantially and will continue to grow through 2023, as new beds are delivered and as growth in online education, international campus affiliations and hybrid education models deliver lower stabilized enrollments.*

*Local Market Impacts*

The combination of proposed supply additions and lower enrollments at the NU campus are expected to reduce the NU undergraduate demand for housing within the surrounding neighborhoods.

**NU UNDERGRADUATE OCCUPANCY IN THE SURROUNDING NEIGHBORHOODS**

All Undergraduate Enrollees (Full & Part Time)	2013	% All UG	2018	% All UG	# Change 2013-18	% Change 2013-18	2023 (Forecast)	% All UG	# Chg 2018-23	% Chg 2018-23	% Chg/Yr 2018-23
4. Boston - Off Campus Private	5,308	28%	5,519	29%	211	4%	3,939	21%	-1,580	-29%	-6%
4a. Mission Hill	1,641	9%	1,697	9%	56	3%	1,211	7%	-486	-29%	-6%
4b. Fenway	2,435	13%	2,332	12%	-103	-4%	1,664	9%	-668	-29%	-6%
4c. Roxbury	75	0%	216	1%	141	188%	154	1%	-62	-29%	-6%
4d. South End	323	2%	385	2%	62	19%	275	1%	-110	-29%	-6%
% Private in the Target Neighborhoods	4,474	24%	4,630	25%	156	3%	3,304	18%	-1,326	-29%	

*As shown by the table above, 1,326 fewer undergrads (3,304, down from 4,630 today) are expected to reside in the neighborhoods by 2023 a reduction of nearly 30%.*

More significant however, for the future of the local markets are the general trends expressed earlier and the expectation that all the of the surrounding submarkets are sure to see continued pricing pressure in the future as the rental markets downtown drive prices higher.

Even the complete elimination of Northeastern students from the neighborhood markets would not produce price declines or even stability in these “next tier” neighborhoods as economic growth continues to fuel value seeking behavior by consumers in the downtown.

As prices rise, even students are expected to be displaced by higher income mingles households, capable of paying more per capita than cash strapped students. Only consistent and substantial supply deliveries can improve the market supply-demand imbalance and tamp down future price escalations.

## **ADDENDA**

## CERTIFICATION

We certify that, to the best of our knowledge and belief:

- The statements of fact contained in this report are true and correct.
- We have the requisite knowledge and experience to competently undertake this assignment.
- Use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- The reported analysis, opinions and conclusions are limited only by the reported assumptions and limiting conditions and are our personal, impartial and unbiased professional analysis, opinions, conclusions and recommendations.
- We have no present or prospective interest in the property that is the subject of this report and have no personal interest with respect to the parties involved.
- We have no bias with respect to any property that is the subject of this report or to the parties involved with this assignment.
- Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
- Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this consulting assignment.
- Our analysis, opinions and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice.
- No one provided significant real property appraisal or appraisal consulting assistance to the persons signing this certification.
- Pamela S. McKinney, MAI is currently certified under the continuing education program of the Appraisal Institute and is registered with the State of Massachusetts as a Certified General Real Estate Appraisers holding license number 745.

BYRNE MCKINNEY & ASSOCIATES, INC.

*Pamela S. McKinney, MAI*

Pamela S. McKinney, MAI  
Principal

---

# BYRNE MCKINNEY & ASSOCIATES, INC.

Real Estate Consultants and Appraisers

---

## **PAMELA S. MCKINNEY, MAI**

Pamela S. McKinney, MAI, has conducted a broad range of consulting and valuation assignments over her 35+ year career. Her background includes public, institutional and private sector experience with an emphasis on commercial, hospitality, large-scale residential, industrial, maritime and other special purpose property.

Notable assignments undertaken by Ms. McKinney include: master planning, asset management and disposition/acquisition counseling for public agencies, Fortune 500 companies and institutional investors; market and financial feasibility studies for large scale waterfront developments; development feasibility and marketing implementation studies for both downtown and suburban office, industrial, bio-medical research parks and retail malls; development consulting for major mixed-use developments; hotel valuation and feasibility analyses nation-wide; adaptive re-use, redevelopment planning and disposition studies for surplus public, corporate and institutional properties; residential condominium, rental apartment and senior housing analyses for market rate and affordable projects; retail district revitalization planning, affordable housing and fiscal impact studies to support policy development at the state and local levels; and the evaluation of investor-held properties nationwide. Ms. McKinney has qualified as an expert witness in the Middlesex, Norfolk and Suffolk County courts in Massachusetts as well as the Massachusetts Land Court, the Court of Chancery of the State of Delaware and the Federal bankruptcy and tax courts.

Ms. McKinney is the President and a Principal of Byrne McKinney & Associates, Inc., which she founded in 1989. BMA is nationally recognized for its expertise in commercial development, real estate finance and valuation. In 2009, Ms. McKinney formed an affiliation with the Pinnacle Advisory Group, a specialty hospitality consulting firm with offices in Boston, Florida, New York, Washington, DC and California and serves as its Director of Valuation Services. Prior to founding Byrne McKinney & Associates, Inc. Ms. McKinney was Senior Vice President of Leggat McCall Advisors, Inc., the national consulting arm of the Leggat McCall Companies. Before joining Leggat McCall, she served as Senior Vice President of Minot, DeBlois & Maddison, Inc., the nation's oldest real estate firm, where she was a principal in the consulting group and a director of the firm. Early in her career, Ms. McKinney worked as an economic development planner and market analyst for metropolitan Boston's Regional Planning Agency (MAPC) where she managed major land use projects, and authored several planning manuals for local officials.

Ms. McKinney has taught courses in real estate development and investment analysis for Harvard University Graduate School of Design, the MIT Center for Real Estate, the Boston University School of Management and Metropolitan College and Tufts University and lectures widely on the topics of real estate finance, valuation and development and the economics of smart growth.

Ms. McKinney holds the MAI designation of the Appraisal Institute, is a former member of the Society of Real Estate Counselors, was on the Board of Directors of the Greater Boston Chapter of the Appraisal Institute and has been elected to Lambda Alpha International, an honorary land economics society. She is a State Certified General Real Estate Appraiser holding Massachusetts license number 745. Ms. McKinney is a founding director of New England Women in Real Estate (NEWIRE, now CREW) and of the Massachusetts Chapter of the Assisted Living Facilities Association of America (ALFA). She is a former trustee of the Boston Latin School Association, past-chair of the Board of the YWCA Boston and a past-chair of the Board of the Advent School in Boston. She has been a resident of Boston's South End neighborhood for over 30 years.