

An aerial photograph of Boston, Massachusetts, serves as the background. Overlaid on this is a large, glowing blue DNA double helix structure that winds diagonally across the frame. The DNA is composed of thick, textured strands connected by horizontal rungs. The background image is darkened to allow the DNA and text to stand out.

BOSTON bioSTATUS

January 2023

Greater Boston Life Science Market

It was a year of two halves for the Greater Boston life science market, beginning with a period of unprecedented growth and record-breaking statistics across many key performance indicators, and concluding with muted demand and many tenants reassessing their space needs. This drop off was due to factors outside the control of Greater Boston's biotechnology companies, namely economic headwinds facing the national market. The Federal Reserve raised rates 350 basis points (bps) in the last six months of the year in their effort to fight inflation, exerting downward pressure on all industries. Boston based biotechnology companies were no exception, as companies including Sanofi and Ginkgo Bioworks saw their market prices drop significantly. The introduction of the Inflation Reduction Act passed in August announced pharmaceutical price controls beginning in 2026, further hampering the life science sector as firms reexamined growth strategies and began layoffs. Editas Medicine announced it was letting go of a fifth of their workforce, Cyteir Therapeutics cut ties with 70% of its employees, and many more Massachusetts companies followed suit. Because of these headwinds, many life science companies tempered outlooks and reevaluated their space requirements.

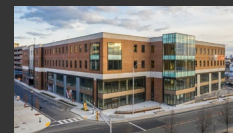
The life science market expanded by 14.9% year-over-year (YOY), growing by over 4.5 million square feet (msf) as 21 buildings delivered throughout the year. In contrast to prior years, Cambridge, the traditional epicenter of life science activity in Massachusetts, accounted for only 16.3% of total market inventory growth. Construction activity was concentrated in the non-traditional markets of the Urban Ring and the 128 Belt, which grew 40.2% and 17.6% respectively. Fourth quarter completions included 201 Brookline Avenue in the Fenway/Longwood submarket and 100 Forge Street in Watertown, both of which delivered fully leased. Overall vacancy rose 130 bps YOY to 10.0%, as demand failed to keep up with the influx of new supply in the market.

Though demand was robust during the first three quarters of 2022 with more than 4.5 msf leased, the fourth quarter brought a sharp slowdown. Annual demand peaked during the second quarter as 2.5 msf of new leases were inked across Greater Boston. Driving this figure were three big-block leases signed by Takeda, AstraZeneca, and Vertex, which together comprised 58.3% of total quarterly leasing. In contrast, the market recorded only 145,000 sf of new demand in the fourth quarter. Tenants seeking space in the market dwindled throughout the year, falling from more than 7.0 msf in Q1 to 1.5 msf at year-end. Beyond diminished demand, many existing tenants opted to place space on the sublease market. Total available sublease space in Greater Boston ballooned to more than 1.7 msf by the end of 2022, an astounding jump of more than 1000% YOY. Companies began reassessing their footprints in earnest during the third quarter causing sublease availability to jump by 190 bps quarter-over-quarter, a trend that worsened in the fourth quarter when sublease availability jumped to 3.5%. As with other key performance indicators, absorption declined as the year progressed. Net occupancy gains totaled 6.6 msf in 2022, with Q4 accounting for only 15.6% of that total. Investment sales activity remained stalled, though a pair of notable sales occurred in the 128 Belt during the fourth quarter. AstraZeneca sold its three-building "BioHub" healthcare incubator in Waltham to Alexandria Real Estate Equities for \$272.5M, while MetLife purchased the 109,000-sf, recently converted 4 Burlington Woods from The Gutierrez Co. for \$103M.

Despite the marked slowdown when compared with prior years, 2022 marked a period of stabilization for Greater Boston's life science market as it exited a state of exponential and record-breaking growth. The market is set to enter a period of multiple challenges, with further consolidation, layoffs and hardships expected.

Q4 LEASES

Discovery Life Sciences
200 Exchange St, Malden
53,620 sf



Lyra Therapeutics
480 Arsenal St, Watertown
22,343 sf



AI Proteins
20 Overland Dr, Boston
18,343 sf



Q4 GROUNDBREAKINGS



15 Riverside
Weston
130,000 sf



250 Western Ave
Boston
272,000 sf

Q4 COMPLETIONS



201 Brookline Ave
Boston
501,200 sf



One Kenmore
Boston
196,754 sf



100 Forge St
Watertown
165,000 sf



101 Cambridgepark Dr
Cambridge
155,000 sf



580 Pleasant St
Watertown
147,000 sf

SUBMARKET SNAPSHOT

CAMBRIDGE



Vacancy: 0.8%

Q4 Leasing Activity: 22,165 sf

Under Construction: 3.9 msf

2022 Absorption: 1.3 msf

- Not only the epicenter of Boston's life science industry, Cambridge reigns as a top life science hub nationally.
- Sublease availability peaked at 4.4% during the third quarter with over 600,000 sf on the market - a record high for the submarket. Sublease availability fell 100-bps during the fourth quarter to 3.4%.
- Three buildings delivered in Cambridge during the fourth quarter, most notably 250 Water Street, which delivered fully leased.
- Eight buildings are set to deliver in 2023, totaling more than 1.8 msf, with just 37.0% preleased.

URBAN CORE



Vacancy: 17.4%

Q4 Leasing Activity: 0 sf

Under Construction: 2.3 msf

2022 Absorption: 1.1 msf

- The Urban Core's life science market is predominantly concentrated in the Seaport, with all but one building located there.
- Vacancy is inflated by the addition of 601 Congress Street to the inventory, which delivered over 500,000 sf of fully vacant space in Q2. Withholding this building, Seaport vacancy is a healthy 4.7%.
- The Seaport followed the greater market trend of an influx in sublease space entering the market as sublease availability increased to 3.9%, an increase of 260 bps over the second half of the year.

URBAN RING



Vacancy: 20.1%

Q4 Leasing Activity: 114,277 sf

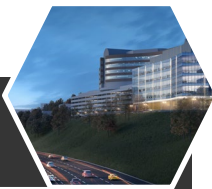
Under Construction: 5.6 msf

2022 Absorption: 1.5 msf

- The Urban Ring recorded the strongest fourth quarter of all clusters in the market. With 114,000 sf of new leasing activity and nearly 900,000 sf in absorption, the region led the market in both metrics.
- The Urban Ring benefited from the tight conditions in Cambridge, as developers shifted focus. The area boasts the most supply under construction, with over 2.0 msf set to deliver in 2023.
- Vacancy ticked up to 20.1% as several buildings delivered vacant throughout the year. Watertown rose from virtually no vacancy in the third quarter to 7.8% in the fourth, due in part to the delivery of largely vacant 580 Pleasant Street.

SUBMARKET SNAPSHOT

128 BELT



Vacancy: 13.1%

Leasing Activity: 9,000 sf

Under Construction: 2.0 msf

2022 Absorption: 1.4 msf

- Office to life science conversions were prominent in 2022 with nearly 946,000 sf delivering in the 128 Central submarket
- The submarket recorded the second-most demand in the market in 2022, with over 1.0 msf between Q2 and Q3
- Lexington and Waltham in 128 Central, which combined represent 74.7% of the 128 Belt, emerged as prominent life science clusters in 2022. Lexington boasts an impressive 5.7% vacancy rate, with only three availabilities across 23 buildings, while Waltham's 9.1% is well below market average

495 BELT



Vacancy: 12.5%

Leasing Activity: 0 sf

Under Construction: 291,300 sf

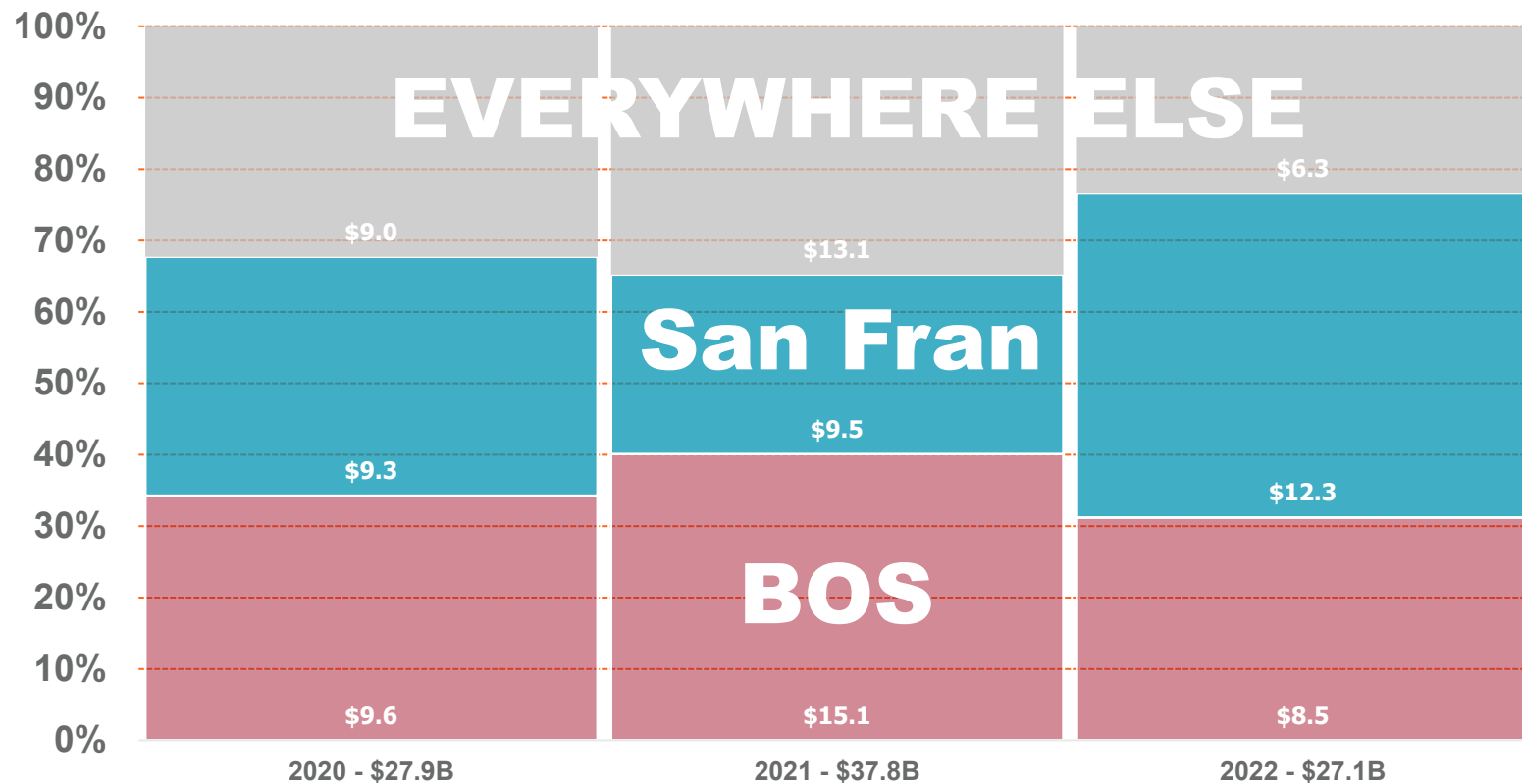
Absorption: 1.3 msf

- Inventory remained unchanged YOY, remaining at 3.5msf. The outward expansion of the life science market from Cambridge is only now reaching the 495 Belt.
- Two office to life science conversions broke ground in the fourth quarter: a 170,000-sf building in 495 North and a 120,000-sf facility in Framingham/Natick. Both are scheduled to deliver in 2024.
- Availability increased 480 bps from Q2 to 16.3%. With no sublease space available in the submarket in the second quarter, that figure surged to over 130,000 sf by year's end.

Venture Capital Investment Drops in 2022

\$8.5B Invested

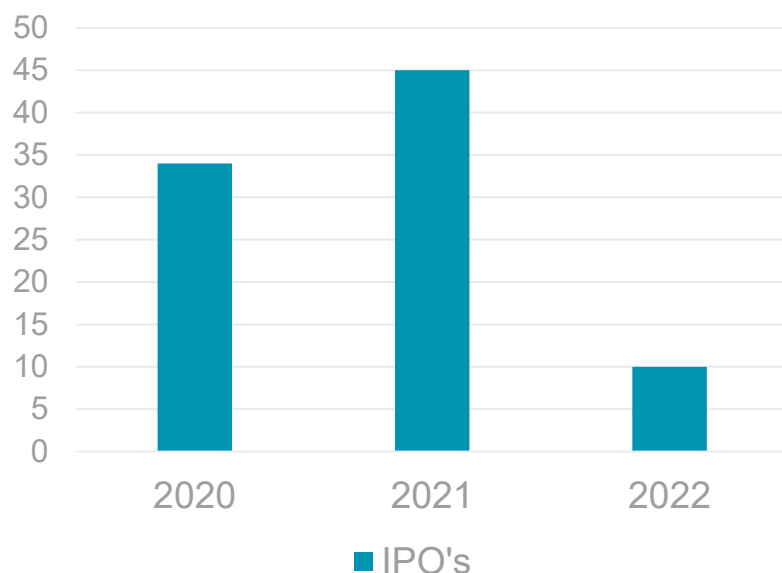
Following a record-breaking year in 2021, investment in Boston's life science market was muted during 2022, down 44.1% YOY. However, interest in Boston outpaces all but one other major market, commanding 31.2% of all North American VC investment in 2022. Despite the slowdown, the \$8.5B invested across the market this year surpassed 2019's pre-pandemic investment total by 62.6%.



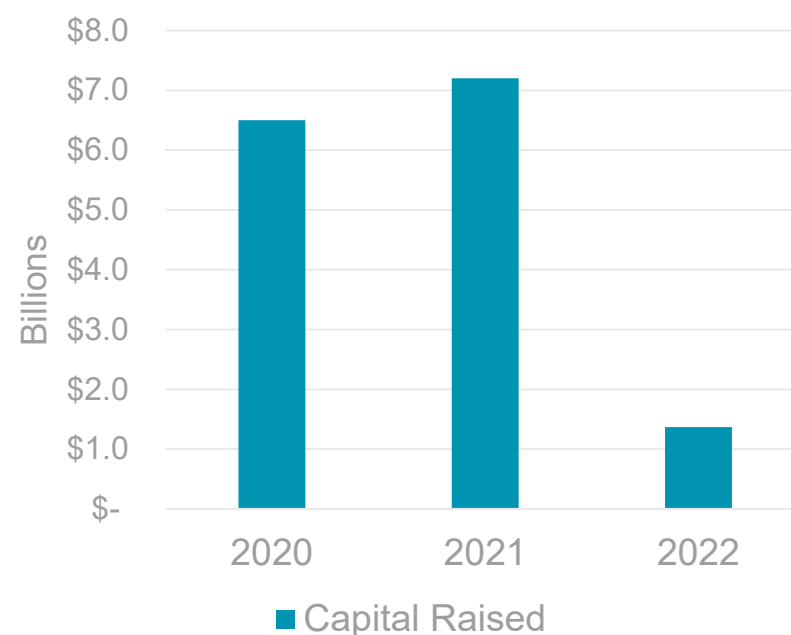
GREATER BOSTON LIFE SCIENCES INVESTMENT

Biotechnology Initial Public Offerings Within Greater Boston 2020-2022

IPO Deal Count

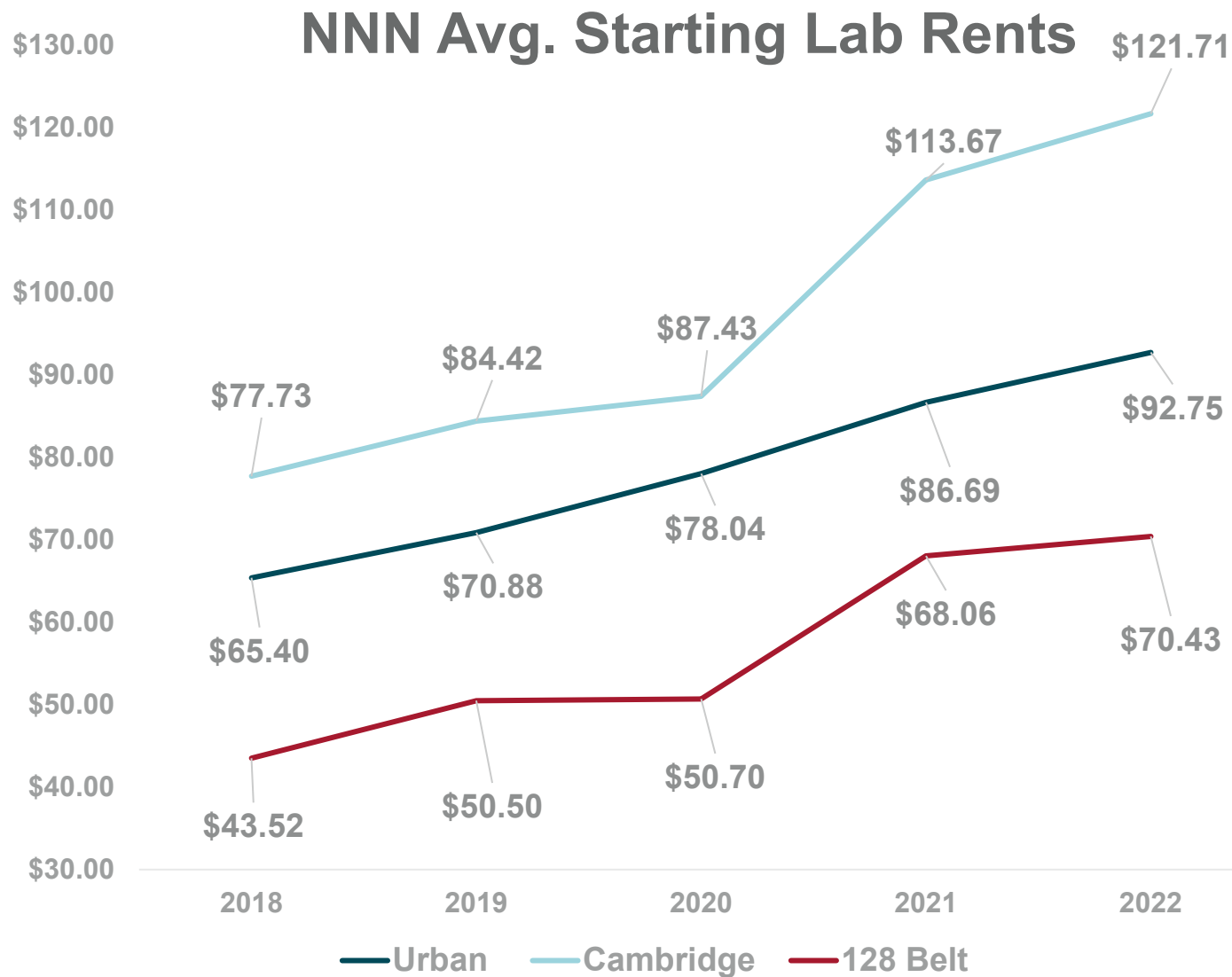


IPO Deal Value



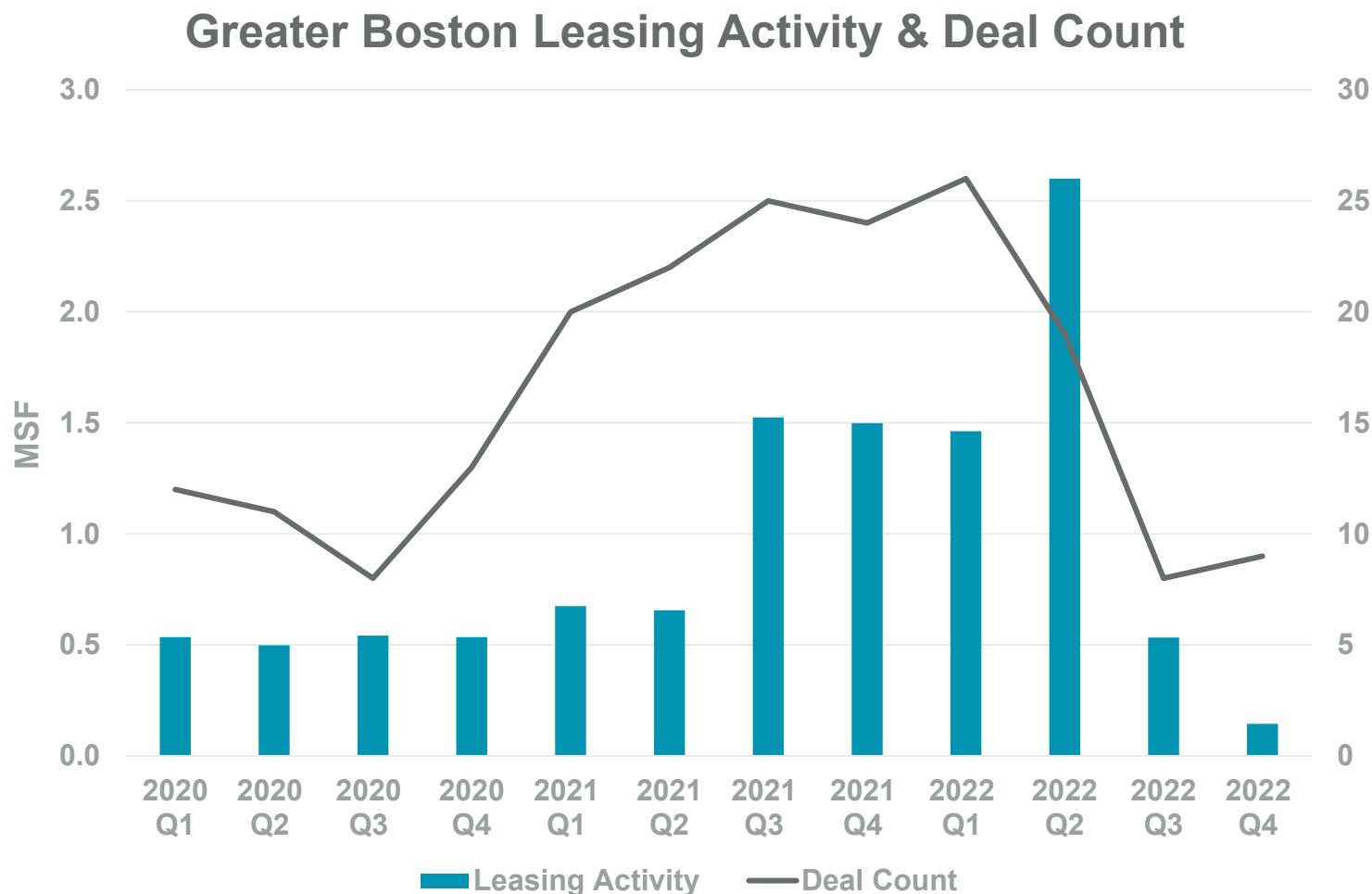
After record-breaking years for IPOs and capital investment in 2020 and 2021, the market experienced a substantial slowdown in 2022. Only 10 biotech companies across Greater Boston went public throughout the year – a fraction of 2021's total.

GREATER BOSTON LIFE SCIENCES RENTAL RATES



Cambridge continues to boast the highest starting rents in Greater Boston, commanding a nearly \$30.00 premium over the Urban Ring. The 128 Belt remains a less expensive option compared to more traditional Boston hotspots.

GREATER BOSTON LIFE SCIENCES DEMAND



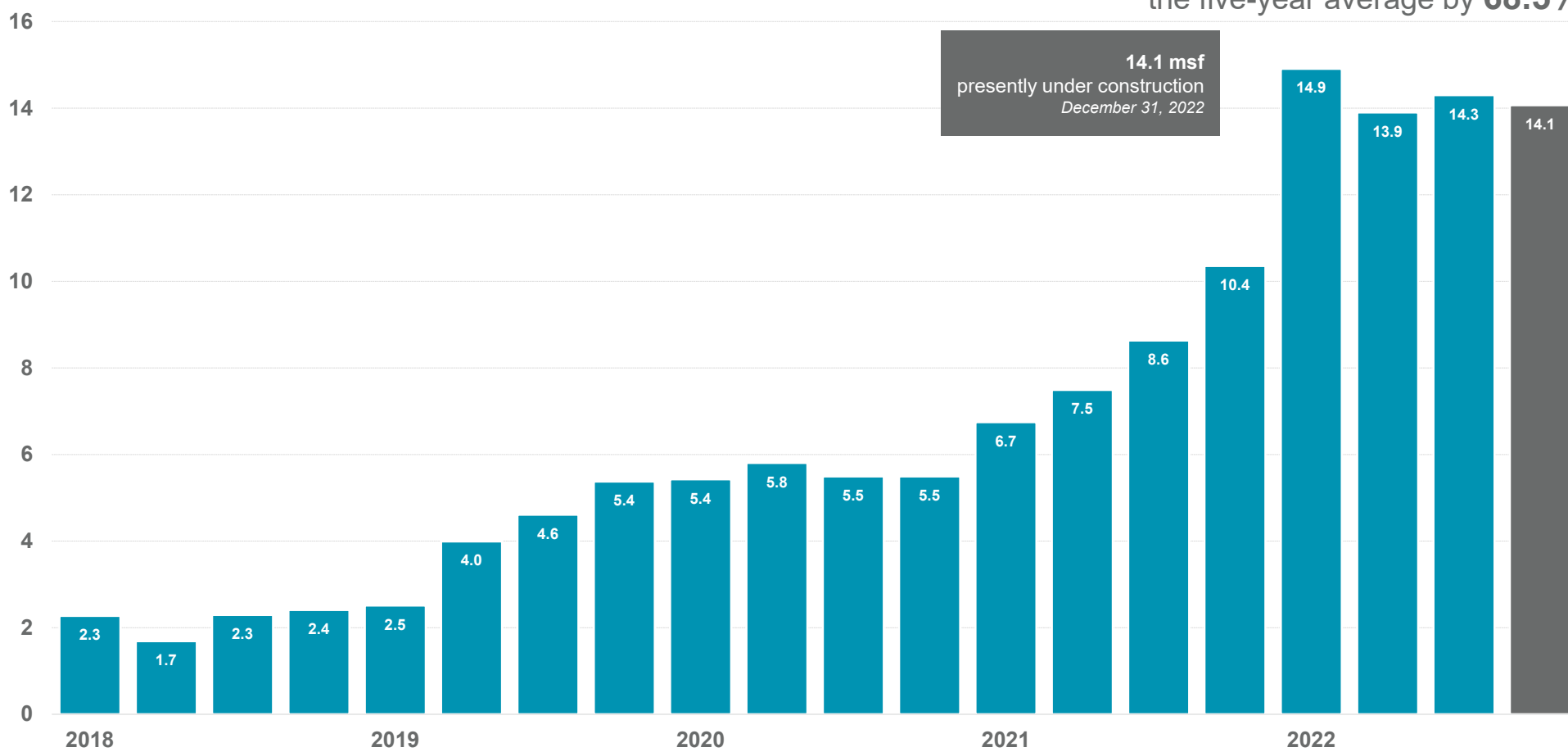
Leasing activity in 2022 exceeded 2021's total by 5.7%, propelled by a slew of large second-quarter transactions inked by Big Pharma users, including Takeda, Vertex, and AstraZeneca

GREATER BOSTON LIFE SCIENCES SUPPLY

TODAY'S PIPELINE FAR SURPASSES RECENT AVERAGES

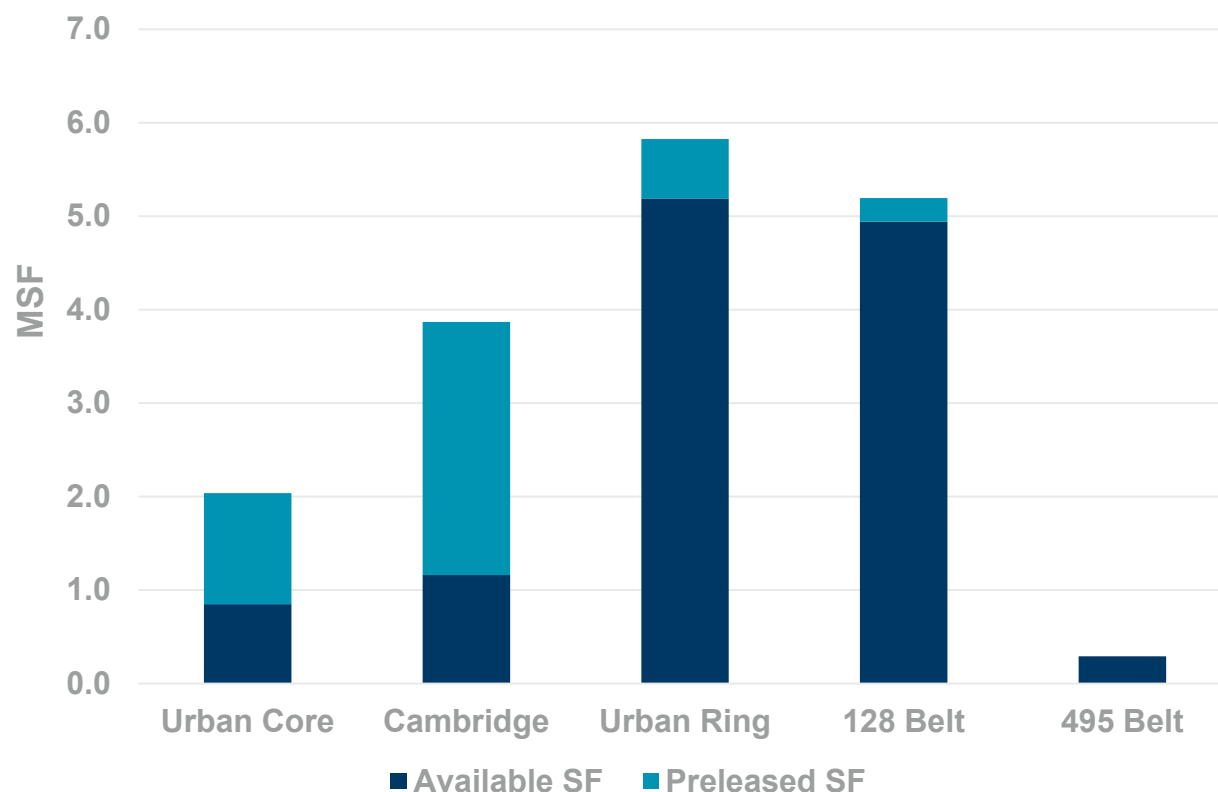
Greater Boston Under Construction Life Sciences Real Estate
sf in millions

Boston's pipeline has exploded over the past five years,
jumping to **14.1 msf** by the end of 2022, and exceeding
the five-year average by **68.5%**



GREATER BOSTON LIFE SCIENCES SUPPLY

Inventory Under Construction by Market Cluster



Lab Q4 2022 Boston Submarkets	CONSTRUCTION UC SF	% Leased
TOTAL MARKET	14,068,546	34.0%
URBAN CORE	2,037,400	58.3%
Financial District	0	na
Seaport	2,037,400	58.3%
CAMBRIDGE	3,869,586	70.0%
East Cambridge	3,697,492	73.3%
Mid Cambridge	0	na
Alewife	172,094	0.0%
URBAN RING	5,825,957	10.9%
Urban North	2,611,957	1.6%
Watertown	1,886,000	30.8%
Allston/Brighton	592,000	0.0%
Fenway/Longwood	736,000	0.0%
Urban South	0	na
128 BELT	2,044,303	12.4%
128 North	0	na
128 Central	1,924,303	13.2%
128 South	120,000	0.0%
495 BELT	291,300	0.0%
495 North	171,300	0.0%
495 West	0	na
Framingham/Natick	120,000	0.0%
495 South	0	na

With 70.0% of under-construction inventory committed, Cambridge leads the market in preleasing activity. Unprecedented demand throughout 2020 and 2021 propelled an explosion of construction activity in the Urban Ring and 128 Belt as supply in traditional hotspots dwindled. However, preleasing has lagged in these clusters amidst an uncertain economic climate. Of the nearly 5.8 msf under development in the Urban Ring, just 10.9% has been preleased.

Looking Ahead to 2023

LOOK AHEAD TO 2023

- Boston's life sciences sector will continue to face headwinds as the U.S. economy remains unbalanced, due to high inflation and interest rates. The impact of uncertainty in the macroeconomy is expected to have a more pronounced impact on life sciences companies during the first half of 2023 before easing near the end of the year.
- As availability continues to increase, market conditions will remain favorable for tenants, yielding increased concessions. Finding affordable, top-tier space around Greater Boston will be less difficult as the 5.8 msf currently scheduled to deliver in 2023 is only 32.0% preleased, which will put further pressure on landlords.
- Diminished demand will result in a substantial slowdown in construction starts, especially compared with the explosive growth of preceding years.
- With sublease availabilities across the market having an average term of more than four years remaining and users continuing to reevaluate space needs, sublease availability will remain elevated throughout 2023.
- Tenants will look for solutions that offer the least amount of out-of-pocket capital, driving increased tenant improvement allowances and a jump in leasing activity in fully built out spec suites. As in 2022, initial public offerings could remain a fraction of 2021 numbers in the face of economic instability. Venture capital investment in biotechnology firms will likely remain stalled as investors continue to be conservative with their capital.

MARKET STATS

Lab Q4 2022 Boston Submarkets	INVENTORY		VACANCY		ABSORPTION		AVAILABILITY		LEASING ACTIVITY	CONSTRUCTION	
	RBA	# Bldgs	%	SF	QTR	LTM	Total	Sublet	Q4 2022	UC SF	% Leased
TOTAL MARKET	35,240,227	241	10.0%	3,501,001	1,031,203	6,628,894	13.0%	3.5%	145,442	14,068,546	34.0%
URBAN CORE	3,188,665	12	17.4%	556,074	21,000	1,080,000	20.4%	3.8%	0	2,037,400	58.3%
Financial District	115,667	1	17.3%	11,000	0	20,000	9.5%	0.0%	0	0	na
Seaport	3,072,998	11	17.7%	545,074	21,000	1,059,000	20.8%	3.9%	0	2,037,400	58.3%
CAMBRIDGE	13,875,265	92	0.8%	108,000	52,543	1,306,543	5.7%	3.4%	22,165	3,869,586	70.0%
East Cambridge	8,127,980	38	0.0%	0	45,543	1,114,543	2.9%	2.9%	22,165	3,697,492	73.3%
Mid Cambridge	4,020,333	34	0.0%	0	7,000	25,000	7.6%	4.3%	0	0	na
Alewife	1,726,952	21	6.3%	108,000	0	0	14.7%	3.3%	0	172,094	0.0%
URBAN RING	6,705,749	32	20.1%	1,351,136	888,247	1,526,747	18.1%	1.7%	114,277	5,825,957	10.9%
Urban North	1,603,719	8	16.6%	266,416	96,277	419,277	13.6%	2.5%	96,277	2,611,957	1.6%
Watertown	1,391,665	13	7.8%	108,000	211,216	347,216	12.5%	2.0%	0	1,886,000	30.8%
Allston/Brighton	430,035	2	0.0%	0	0	25,000	0.0%	0.0%	0	592,000	0.0%
Fenway/Longwood	2,421,409	7	8.5%	205,689	580,754	588,254	6.1%	0.6%	18,000	736,000	0.0%
Urban South	858,921	2	89.8%	771,031	0	147,000	78.4%	3.7%	0	0	na
128 BELT	7,976,110	69	13.1%	1,047,279	69,413	1,410,604	16.8%	4.6%	9,000	2,044,303	12.4%
128 North	522,752	6	0.0%	0	0	156,000	19.7%	5.4%	0	0	na
128 Central	7,301,358	62	12.3%	895,279	69,413	1,254,604	16.2%	5.0%	9,000	1,924,303	13.2%
128 South	152,000	1	100.0%	152,000	0	0	37.5%	0.0%	0	120,000	0.0%
495 BELT	3,494,438	35	12.5%	438,512	0	1,305,000	16.3%	3.8%	0	291,300	0.0%
495 North	2,150,283	20	17.5%	376,498	0	1,310,000	23.7%	6.2%	0	171,300	0.0%
495 West	343,210	6	18.1%	62,014	0	(16,000)	18.1%	0.0%	0	0	na
Framingham/Natick	964,945	8	0.0%	0	0	11,000	0.0%	0.0%	0	120,000	0.0%
495 South	36,000	1	0.0%	0	0	0	0.0%	0.0%	0	0	na

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