TRANSWESTERN

COMMERCIAL REAL ESTATE

U.S. MARKET | LIFE SCIENCES

Q4 2023

Contents

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Life Sciences

Q4 2023

THE VIEW FROM HERE

Fundamentals appear to be firming up, led by employment growth.

Gains in talent position emerging life sciences markets for future growth.

New top-tier space is driving asking rents up across the nation.

NET ABSORPTION

(134,236)

Driven by western markets

VACANCY RATE

13.35%

Fueled by new inventory

NATIONAL INVENTORY

227.3 MSF

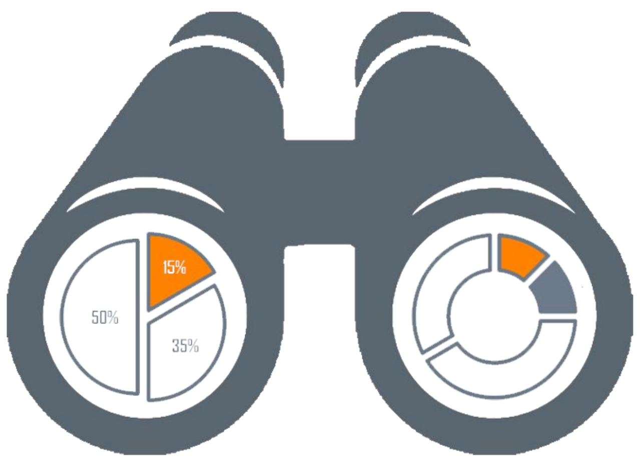
Over 10 Markets

ASKING RENT

$53.98

Annual PSF

NATIONAL MARKET OUTLOOK



The state of the life sciences market remains resilient, navigating a complex period within the commercial real estate cycle. The fourth quarter brought a renewed sense of optimism and relative clarity, as the downward trends started to show signs of flattening. The forces behind rising vacancy rates, asking rates and forecasts became more transparent. The growing science ecosystem fueling the surge in development is going through its own cycle, with a diverse set of challenges. The relationship between the real estate assets and the science are dependent on each other's success.

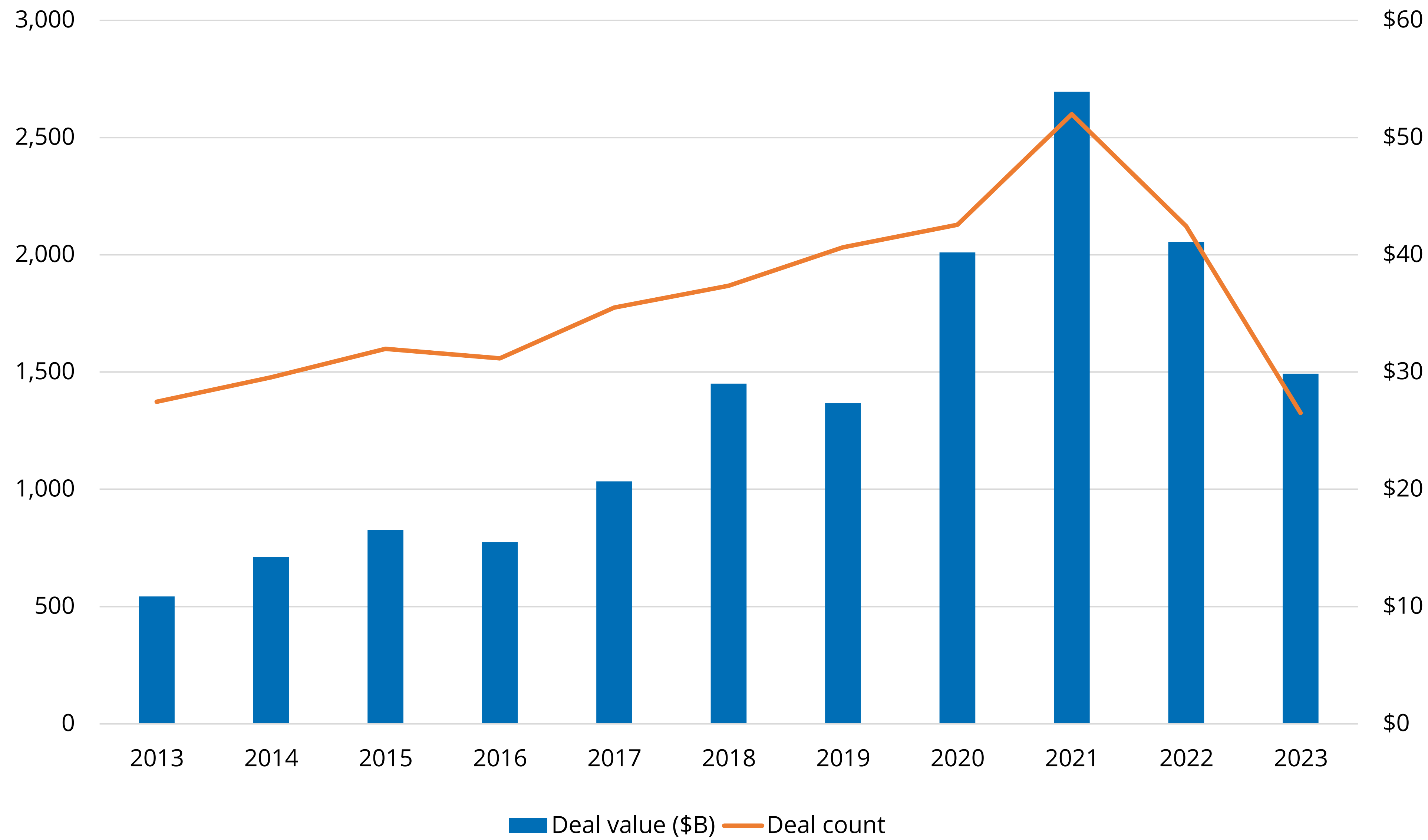
The abrupt rise in interest rates have been largely digested by those directly affected. The economic implications of the tightening of monetary policy have yet to achieve their desired result. The 2024 forecast shows gathering confidence that there will be at least two rate cuts. However, the fed is committed to tapping down inflation to their 2% target. Commercial real estate participants largely welcome a reprieve that rates cuts would bring, allowing the capital markets the cover needed to reinvest in loans that are coming due. The public markets are showing signs of rebounding, as the IPO numbers have bounced off Q1 2023 lows. Venture funding backing life sciences stabilized in the second half of 2023, above pracademic levels. M&A activity continues to expand with larger well capitalized firms seeking to rebalance their portfolio of science and investment. Conversely smaller less capitalized firms have limited options for funding growth and by seeking a merger or acquisition with a large cap firm is a viable option. The national life sciences employment numbers ticked upward, recording 2.0% growth. This outpaced the national average of 1.8% growth in non-farm employment.

The life sciences real estate market had a strong finish in 2023, with Q4 being the best quarter within the last year. Despite the strong finish, new deliveries couldn't pace demand. The lack of absorption matched with a robust development pipeline pushed vacancy rates higher through out all the markets across the nation. Asking rates jumped in select markets driven by new supply demanding a premium. Landlords offering better terms and allowances justify the asking rate hikes. Large institutional owners of life sciences buildings have noted the inter-tenant demand is driving their current leasing activity, allowing landlords to shuffle tenants within their portfolio. All in all, the life sciences inventory continues to grow at a rapid pace, supply and demand has yet to equalize. Despite the vacancy rates increasing, industry experts are impressed with the rate at which space is being taken. 2024 forecasts denote the strong finish of 2023 to carry through the rest of the year.

KEY VENTURE FUNDING POINTS

- 2023 venture-backed life sciences funding totaled $29.89B.
- Given the public market headwinds, VC funding remained higher than pre-pandemic levels.
- Industry sentiment continues to be positive, with life sciences and medical technology remaining top industries for private deployment of investment capital.
- Later stage companies with proven science continued to receive the vast majority of funding dollars.
- Industry professional's forecasts lean towards an active 2024. Patient venture funds with surplus dry powder are poised to deploy cash in the next 12-months.
- 2024 is an election year, which typically brings a more risk-off sentiment.

VC DEAL & FUNDING VOLUME



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Deal value ($B)	$10.85	$14.23	$16.53	$15.50	$20.67	$29.01	$27.34	$40.21	$53.90	$41.11	$29.89
Deal count	1,373	1,478	1,599	1,558	1,775	1,868	2,032	2,128	2,600	2,122	1,491

Source: TW Research, Pitchbook

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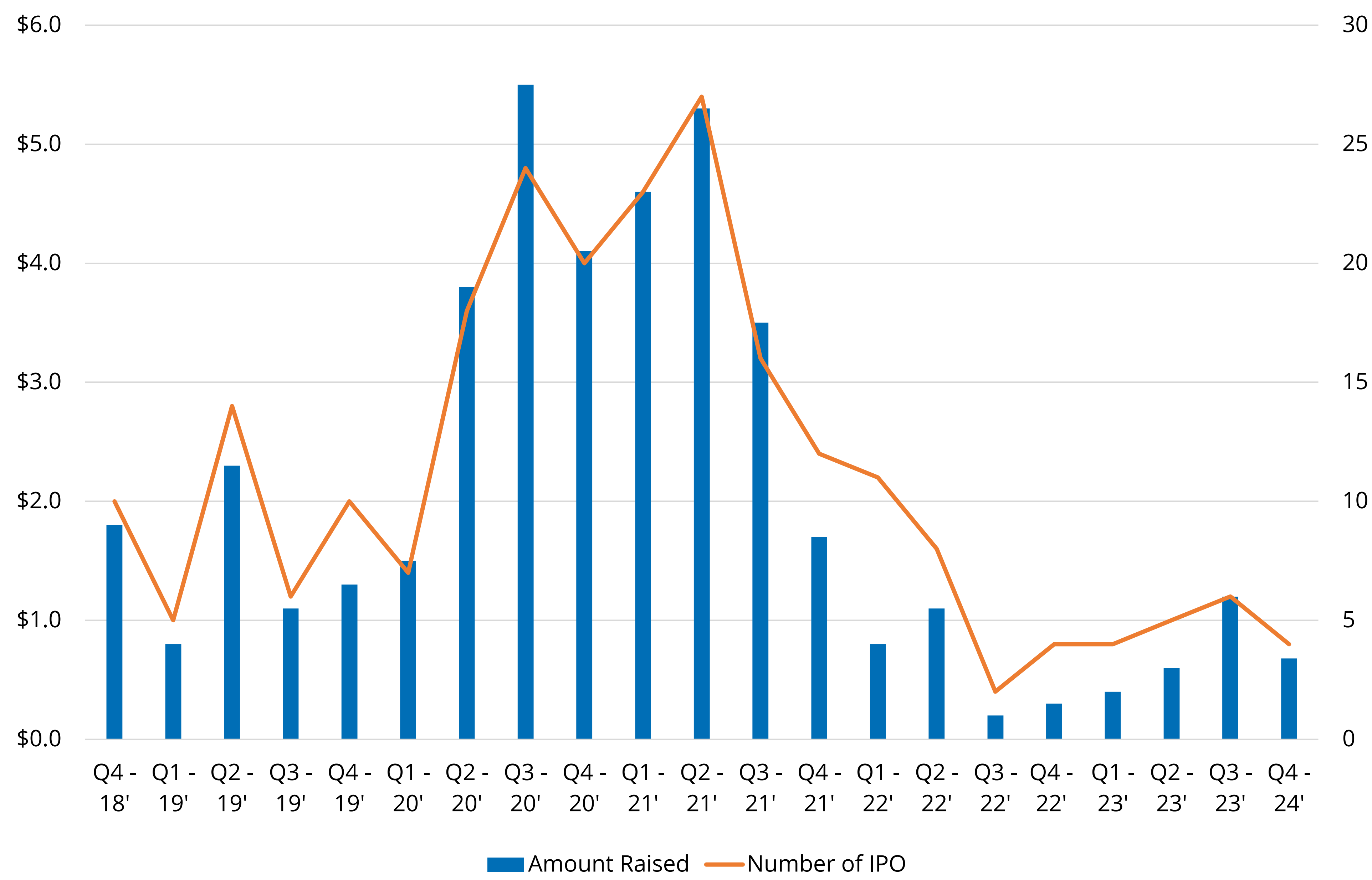
IPO MARKET SUMMARY

- The life sciences sector depends heavily on the public markets. An IPO gives ambitious talent and venture capital firms access to a multitude of opportunities for business expansion, and wealth creation. The venture funding cycle has been hampered by the decline in IPO activity in 2022; without the turnover of money within the cycle continuing to lack momentum. In 2023, venture companies moved to a risk-off mindset to preserve dry powder and concentrate on high-quality science.
- The entirety of the IPO market in the U.S.-based exchanges has experienced similar performance, yielding 21% fewer IPOs over 2022.
- Post IPO discounts could reignite M&A activity, as share prices continue to decline; it is only a matter of time before value investment fundamentals begin to pull capital off the sidelines.

LIFE SCIENCES IPO ACTIVITY



Source: TW Research, Pitchbook & NASDAQ

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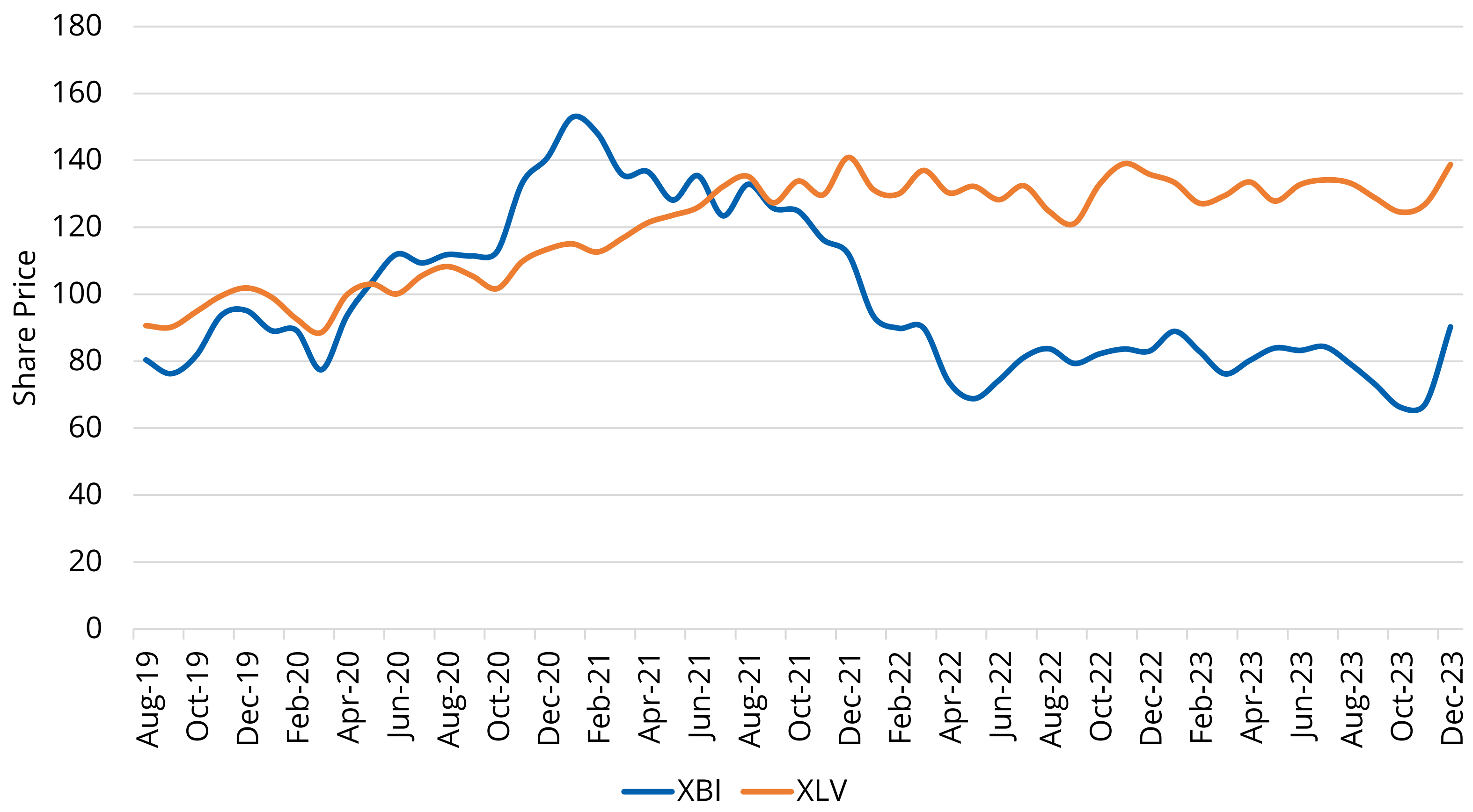
- Health Care Select Sector SPDR Fund (XLV) – Broad base of healthcare companies, including pharmaceuticals, healthcare equipment, devices and services. Considered to be stable, bellwether names representing the entirety of the sector's exposure.
- SPDR S&P Biotech ETF (XBI) – Life sciences and biotech focused, driving innovation for the healthcare industry. Considered to be less stable, representing novel sciences still in research and development phases.
- The similar trend between XLV and XBI ended in 2021, with XBI experiencing a sharp correction through 2022. The second half of 2023 has seen a noteworthy uptick in fund values, signaling a bounce off 18-month lows.

MARKET FUND COMPARISION



RECENT LIFE SCIENCES IPO – 2023 Q3-Q4

COMPANY	STAGE - IPO	FOCUS	IPO DATE	PROCEEDS	IPO PRICE	CURRENT PRICE
Cargo Therapeutics (CRGX)	Phase 2	Cancer - Cell Therapy	11/9/2023	$281M	$15.00	$26.45
Lexeo Therapeutics (LXEO)	Phase 1	Cardiovascular Diseases + Alzheimer	11/2/2023	$100M	$11.00	$14.75
Abivax (ABVX)	Phase 3	Immune Diseases - Small Molecules	10/20/2023	$236M	$11.60	$14.60
Adlai Nortye (ANL)	Phase 3	Cancer - Small Molecules	9/29/2023	57.5M	$23.00	$7.80
RayzeBio (RYZB)	Phase 3	Cancer - Cell Therapy	9/14/2023	$311M	$18.00	Acquired
Neumora Therapeutics (NMRA)	Phase 3	CNS Disorders - Small Molecules	9/14/2023	$250M	$17.00	$18.40
Mira Pharmaceuticals (MIRA)	Preclinical	Other - Small Molecules	8/2/2023	$8.9M	$7.00	$0.96
Turnstone Biologics (TSBX)	Phase 1	Cancer - Cell Therapy	7/20/2023	$80M	$12.00	$4.22
Sagimet Biosciences (SGMT)	Phase 3	Liver Diseases - Small Molecules	7/13/2023	$85M	$16.00	$6.67
Apogee Therapeutics (APGE)	Preclinical	Immune Diseases - Antibodies	7/13/2023	$300M	$17.00	$66.69
60 Degree Pharmaceuticals (SXTP)	Marketed	Infectious Diseases	7/12/2023	$7.6M	$5.30	$0.30
Intensity Therapeutics (INTS)	Phase 1	Cancer - Small Molecules	6/29/2023	$20M	$5.00	$5.19
Azitra (AZTR)	Phase 1	Other - Biologics	6/15/2023	$7.50M	$5.00	$0.23

Source: TW Research, Pitchbook & NASDAQ

NIH FUNDING HIGHLIGHTS

- The 2023 budget for NIH funding was $47.6B, with $1.5B in additional provisions. Fiscal Year 2024 has a proposed budget $48.9B.
- The established academic institutions with noteworthy research arms continue to remain the top recipients of NIH grants. Academic institutions support their post-grad ecosystem with increased investment in incubator and graduation space.

Additional governmental institutions that contribute to the advancement of life sciences:

Department of Energy (DOE)
Research budget $8.1B

Federal Drug Administration (FDA)
Research budget $1.2B

National Institute of Allergy and Infectious Diseases (NIAID)
Research budget $5.1B

2023 NIH FUNDING I TOP RECIPIENTS

ORGANIZATION	CITY	STATE	AWARDS	FUNDING
Johns Hopkins University	Baltimore	MD	1,411	$786,942,854
University Of California, San Francisco	San Francisco	CA	1,435	$720,236,546
University Of Pennsylvania	Philadelphia	PA	1,270	$651,631,196
University Of Michigan At Ann Arbor	Ann Arbor	MI	1,346	$647,644,529
University Of Pittsburgh At Pittsburgh	Pittsburgh	PA	1,214	$641,387,029
Stanford University	Stanford	CA	1,134	$626,387,484
Massachusetts General Hospital	Boston	MA	1,051	$621,280,477
Washington University	Saint Louis	MO	1,154	$619,474,331
Duke University	Durham	NC	970	$609,267,868
Yale University	New Haven	CT	1,123	$595,677,236
Columbia University Health Sciences	New York	NY	1,014	$583,996,204
University Of California, Los Angeles	Los Angeles	CA	869	$567,147,736
University Of California, San Diego	La Jolla	CA	1,041	$547,926,325
University Of Washington	Seattle	WA	995	$531,541,443
Research Triangle Institute	Triangle Park	NC	70	$503,809,542

Source: TW Research, NIH, DOE, FDA & NIAID

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NATIONWIDE TOP OCCUPIERS

Source: TW Research, ZoomInfo & CoStar

KEY MARKET POINTS

- Robust construction pipeline set to deliver with large inventory boost on the horizon. The four quarter brought a little over a million square feet of inventory onto the market.
- The robust construction pipeline continues to bring new inventory at a rapid pace, which outpaces leasing activity.
- Despite a slight uptick in lease activity in Q4, Boston's net absorption dropped to a five-year low.
- 20 MSF of development projects continue to be permitted. Starts are down 60% in 2023.

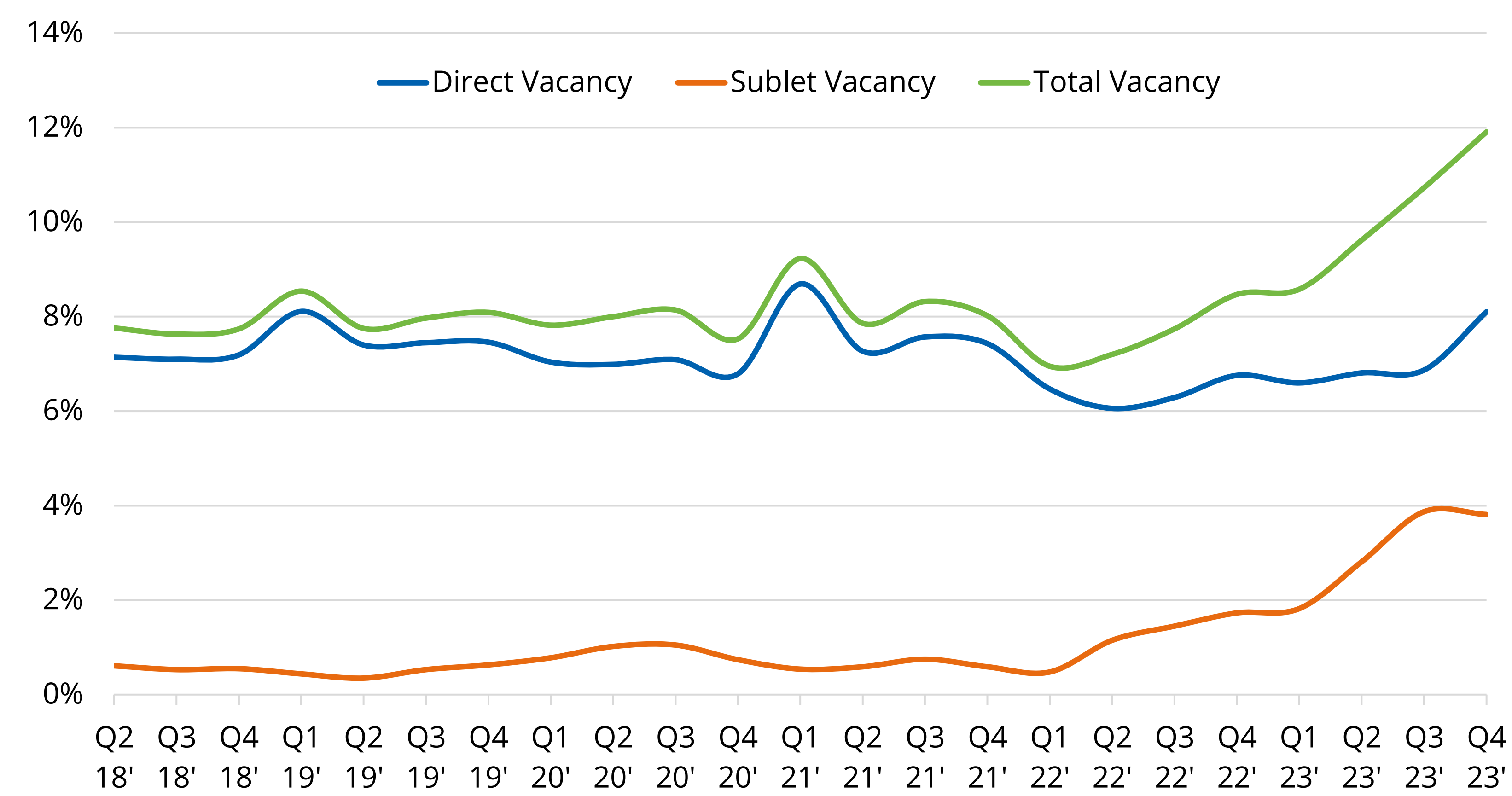
MARKET OVERVIEW

Despite difficult market conditions, the life sciences market in Boston remains stable. Local supply and demand dynamics are still being stretched as new inventory keeps the landscape competitive. There has been an increase in vacancies over the past 18-months. Over the past two years, major pharmaceutical companies have expanded their local presence by utilizing their existing credit and capitalizing on the pause in venture investing.

The regions biggest transaction in history with Norges Bank Investment Management and BXP. The deal encompassed two buildings totaling 810,000 RSF, with a total value of $1.6B. Norges purchased a 45% stake in the project for $746.6M. The anchor tenant in the deal is AstraZenica; which plans on moving into 290 Binney Street, a 16-story, 570,000 RSF building. The other building, 300 Binney Street, a six-story facility undergoing redevelopment will be delivered in April 2025.

TRENDLINES	Q4 2023	Q4 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	66.40	62.81	↑	↑
NET ABSORPTION (THOUSANDS SF)	(131,500)	(40,292)	↓	↔
VACANCY RATE	12.02%	8.44%	↑	↑
UNDER CONSTRUCTION (MSF)	23.10	18.40	↑	↓
ASKING RENT, NNN (PSF)	$58.10	$52.57	↑	↔
YTD NIH STATE GRANTS (BILLIONS)	$3.35	$3.11	↑	↔

VACANCY RATE

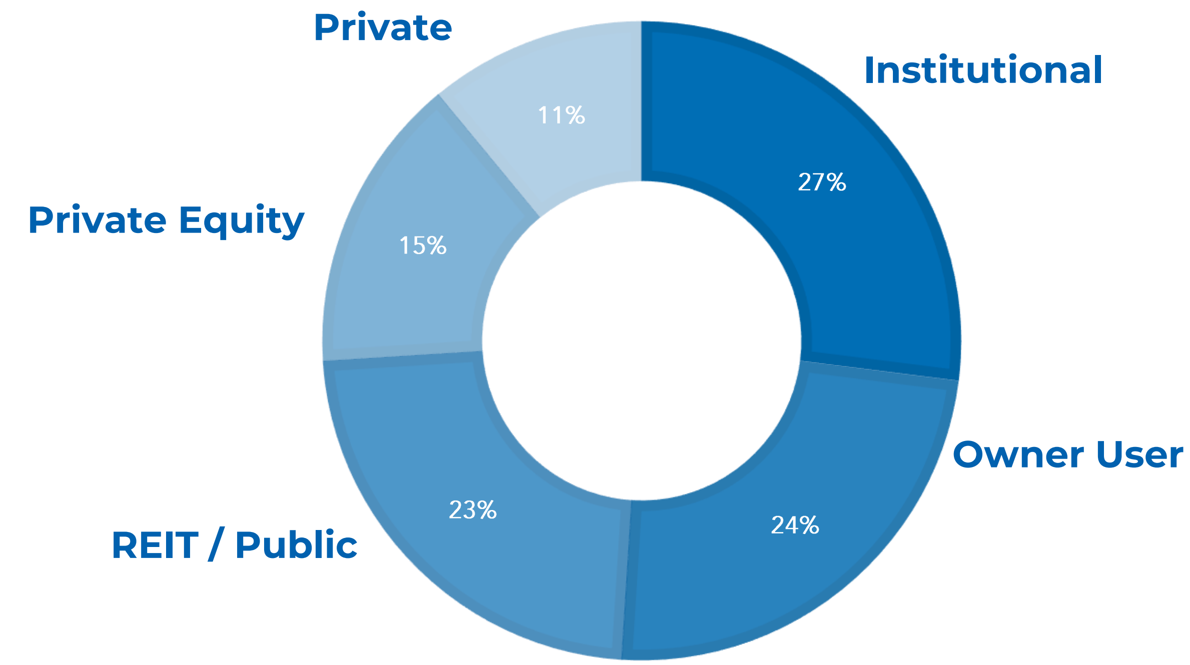


Source: TW Research. CoStar, NIH

LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Massachusetts General Hospital	1051	$621,280,477	Boston
Brigham And Women's Hospital	650	$384,746,183	Boston
Boston Children's Hospital	431	$233,844,390	Boston
Harvard Medical School	343	$170,137,538	Boston
Univ Of Massachusetts Medical School	343	$175,636,904	Worcester
Boston University Medical Campus	275	$180,844,499	Boston
Massachusetts Institute Of Technology	254	$116,168,478	Cambridge
Dana-Farber Cancer Institute	223	$150,324,001	Boston
Beth Israel Deaconess Medical Center	217	$122,507,523	Boston

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

ALEXANDRIA

Blackstone

LEASE I Q4 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Novo Nordisk	New	60 Sylvan Road	165,919	Waltham
Zoll Medical	New	38 Upton Drive	110,000	Wilmington
BPG Bio	New	300 Third Avenue	70,000	Waltham
Alexion Pharma	Sublease	100 Binney Street	62,000	Cambridge
Stoke Therapeutics	Renewal	45 Wiggins Avenue	38,500	Bedford
Lemaitre Vascular	New	53 Second Street	27,289	Boston
TScan Therapeutics	New	830 Winter Street	25,475	Boston

SALE I Q4 2023

ADDRESS	TYPE	SIZE	PRICE	MARKET
640 Memorial Drive	Office	242,500	$223,800,000	Boston
300 Binney Street	Office	195,000	$422,700,000	Cambridge
100 Beaver Street	Office	82,500	$81,725,000	Boston
290 Binney Street*	Office	570,000	$1,230,000,000	Cambridge

Source: TW Research. CoStar
*Portfolio sale

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KEY MARKET POINTS

- Direct availability remains the primary driver of the of the vacancy rate, as sub-lease space remains limited.
- The development pipeline consists of four active projects.
- Leasing activity continues to trend positive for the last four quarters.
- Chicago's inventory is anchored by owner users.
- Increasing number of local Bio-Medical degrees awarded from top-tier institutions.

MARKET OVERVIEW

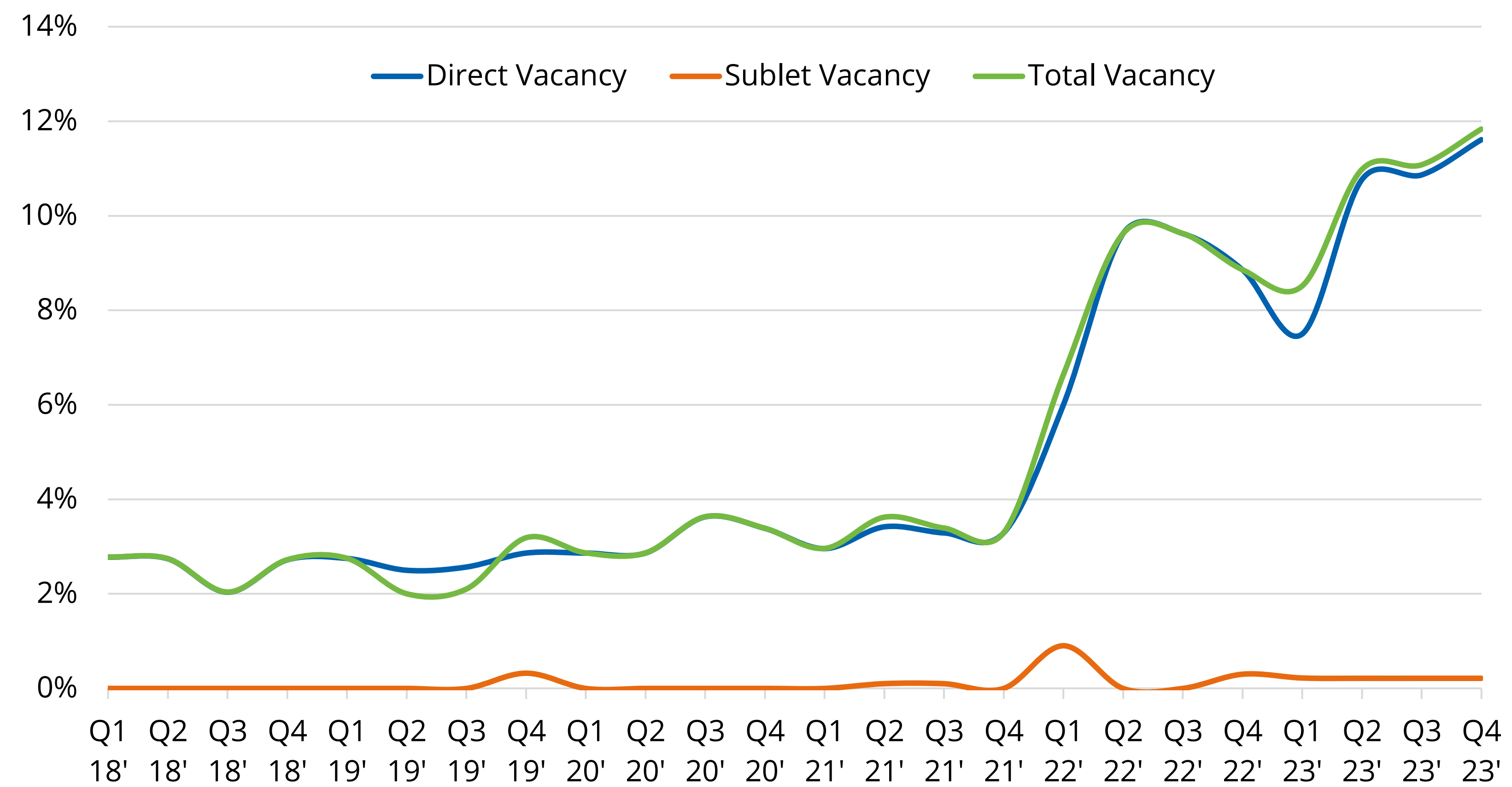
Chicago is rapidly becoming an established market for life sciences companies. The greater Chicago area has received limited coverage within life sciences leasing reports. Much of the existing inventory is made up of owner-users, totaling seven million square feet. The remaining four million square feet of leased inventory is split between the North Chicago and Chicago's CBD.

The local market contains four incubators: Portal Innovations, mHub, Helix51 and Chan Zuckerberg Biohub Chicago. These spaces are reported to be at near capacity and signal the budding innovation in the local market.

Illinois Institute of Chicago's recent lease at 400 N Aberdeen Avenue is the institute's first move off campus. This lease continues to show a trend toward local higher education insinuations expanding their research arms into collaborative spaces, off campus.

TRENDLINES	Q4 2023	Q4 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	12.00	11.90	↑	↑
NET ABSORPTION (THOUSANDS SF)	58.10	(100)	↑	↑
VACANCY RATE	11.80%	10.27%	↑	↑
UNDER CONSTRUCTION (THOUSAND SF)	810	940	↓	↑
ASKING RENT, NNN (PSF)	$46.70	$40.55	↑	↑
YTD NIH STATE GRANTS (BILLIONS)	$1.16	$0.98	↑	↑

VACANCY RATE

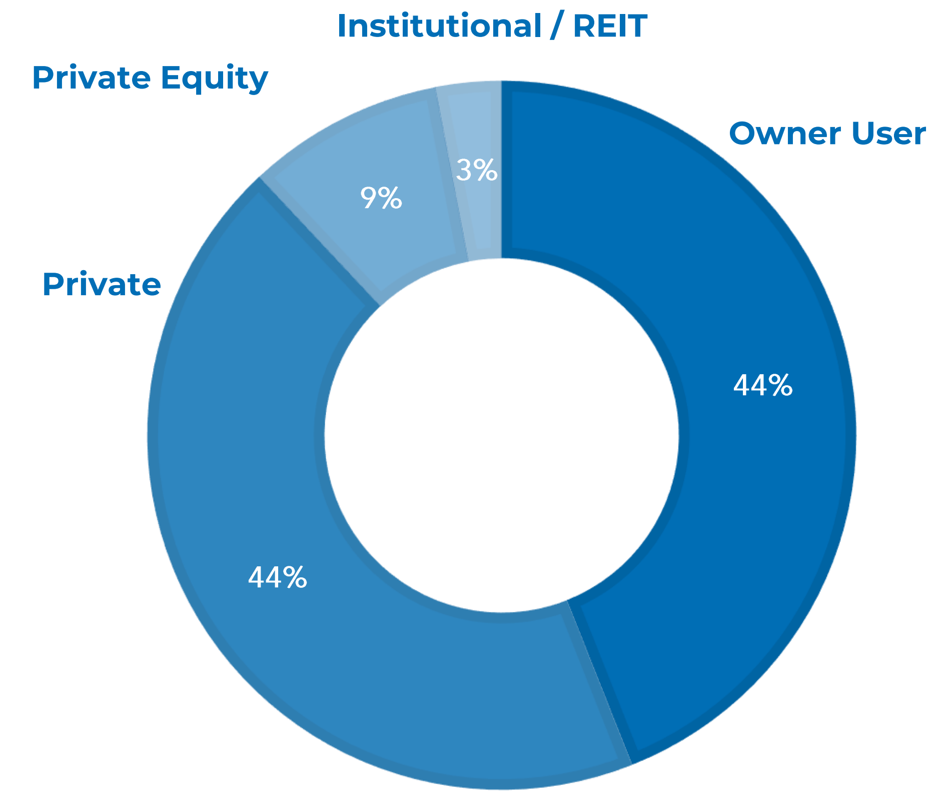


Source: TW Research. CoStar

LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Northwestern University	699	$395,241,147	Chicago
University Of Chicago	454	$253,751,156	Chicago
University Of Illinois At Chicago	364	$150,801,795	Chicago
University Of Illinois	189	$75,757,069	Champaign
Rush University Medical Center	105	$69,949,648	Chicago
Northwestern University	128	$49,082,494	Chicago
Lurie Children's Hospital	54	$26,878,449	Chicago
Loyola University Chicago	65	$21,863,983	Maywood
Alliance Foundation	3	$11,521,819	Chicago

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

Sterling Bay

TrammellCrowCompany

DEVELOPMENT SPOTLIGHT: HYDE PARK LABS

302,388 RSF
Total Square Footage

13 Stories
14’ – 15’ Ceiling Heights

35,000 RSF
Floor Plates

9 Stories
Dedicated Lab Space

40,000 RSF
Amenity Space

125 Spaces
Underground Parking

Slated to be delivered June 2024

Trammell Crow Company & Beacon Capital Partners

SALE | Q4 2023

ADDRESS	TYPE	SIZE	PRICE	MARKET
1101 Arnold Street	Manufacturing	350,000	$28,000,000	Chicago

LEASE | MID-YEAR 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Illinois Institute of Chicago	New	400 N. Aberdeen	34,295	Chicago
MonoSol	New	1345 W. Fulton Ave	34,021	Fulton
Belay Diagnostics	New	1345 W. Fulton Ave	6,750	Fulton

Source: TW Research, CoStar. Beacon Capital Partners & NIH

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KEY MARKET POINTS

- Houston's life science growth continues to gain momentum, anchored by the renowned Texas Medical Center.
- Preleasing continues to tick upward
- The area receives the largest share of NIH funding in the state. FY 2024 is to be released shortly.
- Local demographics make for an ideal location for certification trials
- The employment talent pool is robust, given the crossover between medical and research fundamentals.

MARKET OVERVIEW

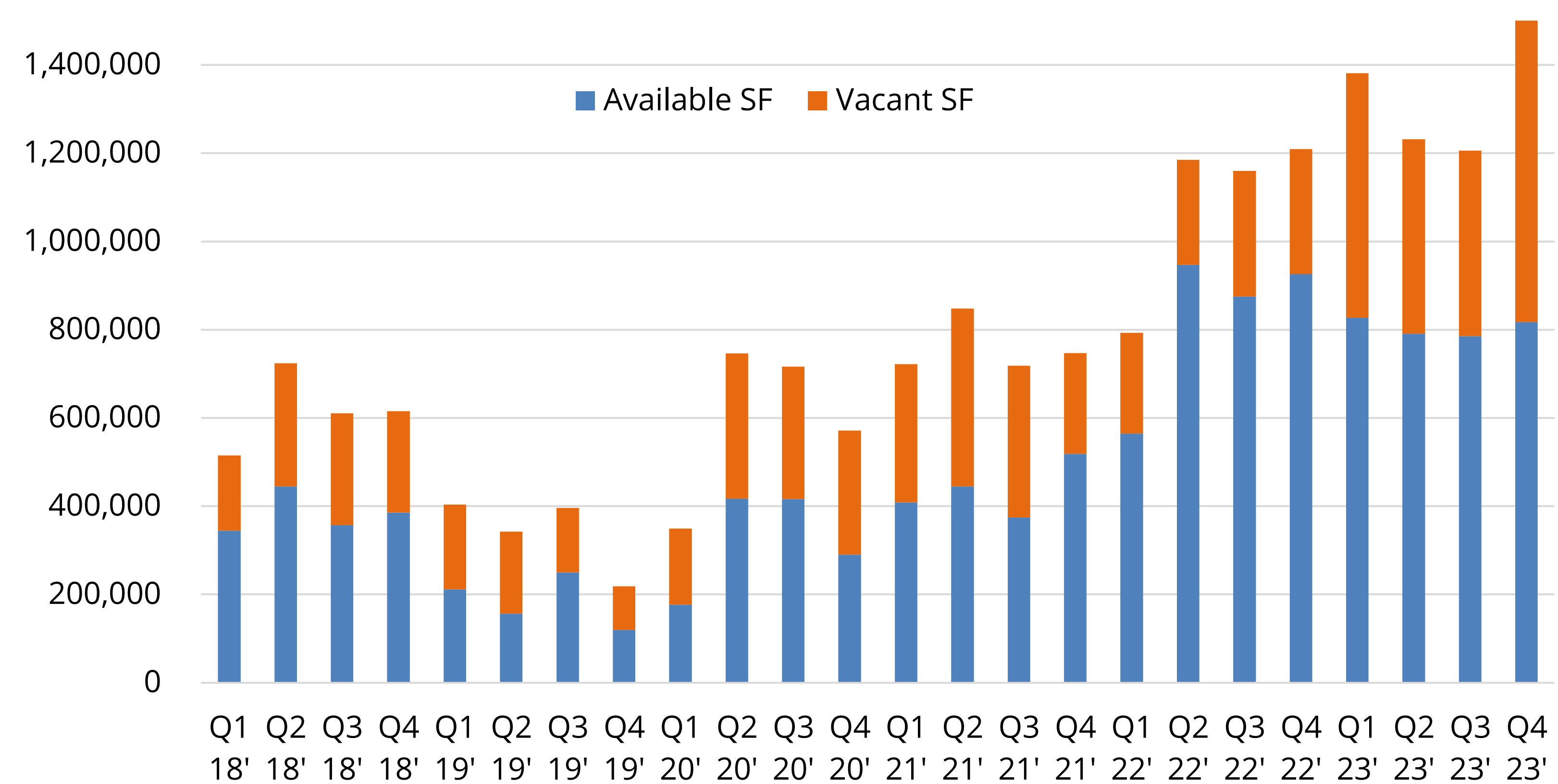
The life science market in Houston continues growing at a steady pace. Top talent is drawn to the Texas Medical Center's robust ecosystem. Many local industry partners play a critical part of the region's rising success; like BioHouston, which helps to build local synergies and foster collaboration across industry collaborators, large and small alike. Johnson and Johnson's JLABS furthered its expansion, with a focus on graduation space.

Two large life science developments added to the inventory. First, Dynamic One within Helix Park delivered 350,000 RSF, of which 217,233 SF is leased. Second, Levit Green's Phase One by Hines delivered 265,000 SF of which 10,000 SF is noted to be leased.

2024 is shaping up to be a landmark year for the region's growth. Supply and demand drivers are stable, as development is pacing demand at a consistent pace. FY 2024 funding will undoubtedly boost local innovation for both medical and research fields.

TRENDLINES	Q4 2023	Q4 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	4.30	3.43	↑	↑
NET ABSORPTION (THOUSANDS SF)	(58.79)	(16.70)	↓	↑
VACANCY RATE	12.14%	8.88%	↑	↑
UNDER CONSTRUCTION (THOUSAND SF)	1.4M	981	↑	↓
ASKING RENT, NNN (PSF)	$46.20	$39.92	↑	↑
YTD NIH STATE GRANTS (BILLIONS)	$1.61	$1.22	↑	↑

AVAILABLE INVENTORY



Source: TW Research. CoStar

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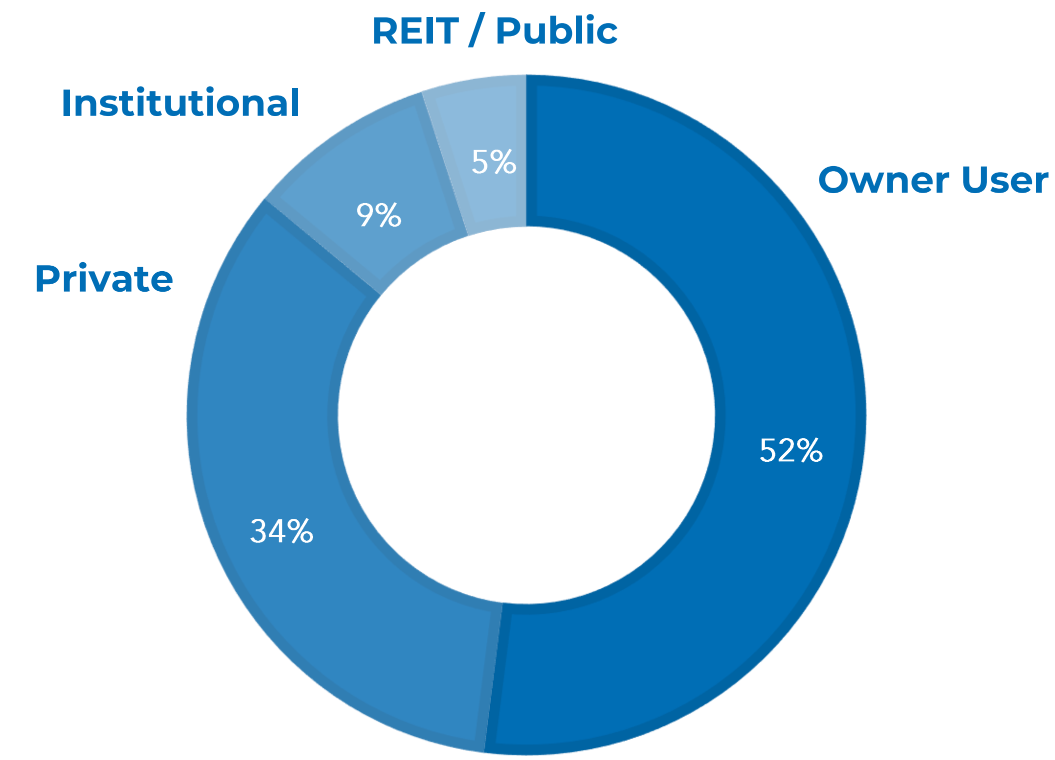
LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Baylor College Of Medicine	608	$306,172,575	Houston
University Of Tx Md Anderson	341	$176,883,216	Houston
University Of Texas Health Science Center	308	$137,591,734	Houston
University Of Texas Med Br Galveston	142	$103,374,688	Galveston
University Of Houston	116	$41,471,231	Houston
Methodist Hospital Research Inst	71	$32,534,260	Houston
Rice University	77	$29,654,653	Houston
Texas Heart Institute	6	$3,652,411	Houston
Bivacor, Inc.	3	$3,128,775	Houston
7 Hills Pharma, LLC	2	$1,926,091	Houston

INVENTORY BUILDING OWNERSHIP



TOP OWNERS: TMC | TEXAS MEDICAL CENTER, ATM, BEACON CAPITAL PARTNERS

LEASE | Q4 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Houston Methodist Research Inst.	New	1840 Dynamic Way	75,800	TMC
Motif Neurotech	New	2450 Holcombe Blvd	5,486	TMC
Front Door Pharmacy, LLC	Expansion	8968-8998 Kirby Drive	1,344	TMC
Immatics	New	2450 Holcombe Blvd	28,070	TMC

DEVELOPMENT SPOTLIGHT: NIMBLE BIOSPACEST

McCord Development
Owner & Developer

67,200 RSF
Total Square Footage

6 cGMP Suites
Fully Turn-Key

March 2025
Anticipated Delivery

Source: TW Research, CoStar. NIH
*No recent sale activity.

KEY MARKET POINTS

- New Jersey continues to be the cornerstone of manufacturing and long stablished pharmaceutical firms.
- Increased investment into second generation campuses renews interest from new tenants.
- Onshoring trends continue to be a tailwind for the region’s biomanufacturing sector.
- Mature transportation infrastructure aids to the stability and ongoing success.

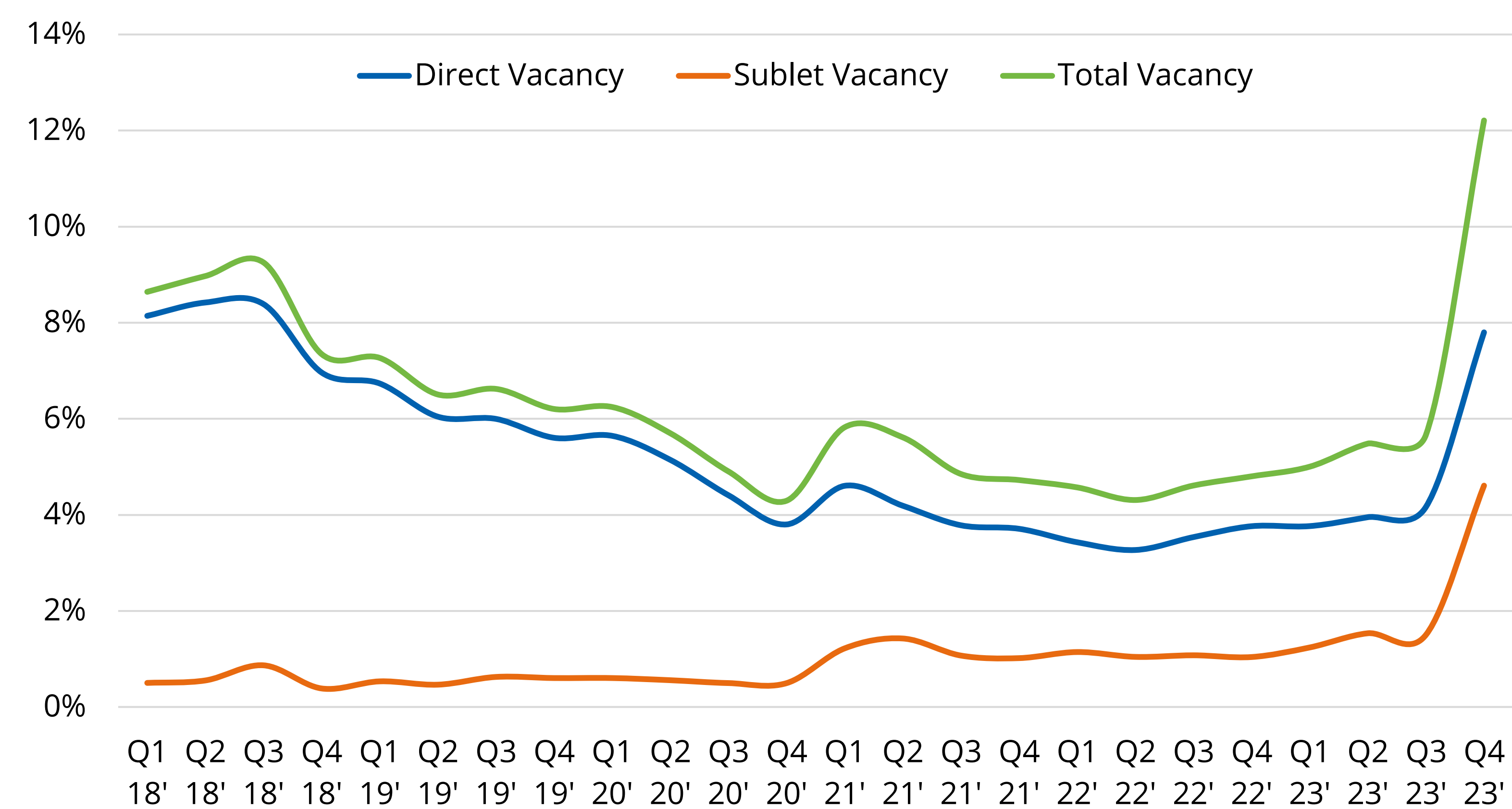
TRENDLINES	Q4 2023	Q4 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	32.68	32.60	↔	↑
NET ABSORPTION (THOUSANDS SF)	(194.13)	(61.47)	↓	↑
VACANCY RATE	12.20%	6.69%	↑	↑
UNDER CONSTRUCTION (MSF)	1.70	1.27	↔	↔
ASKING RENT, NNN (PSF)	$36.40	$34.51	↑	↑
YTD NIH STATE GRANTS (MILLIONS)	$359	$333	↑	↑

MARKET OVERVIEW

New Jersey is well known as the birthplace of immunotherapy, with 3,500 life sciences businesses employing 410,000 professionals. The region’s adoption of contemporary manufacturing techniques has shed light on the value of legacy facilities. In addition, rail, trucks, and seaports are among the well-established modes of transportation that sustain North New Jersey. The delivery of goods—both completed and raw, is made more efficient with these possibilities.

The area boasts 28 post-secondary educational institutions with Bio-Med degrees, which as a whole awarded over 100,000 degrees in 2022. This contributes towards a sustainable talent pipeline and boosts the regions attractiveness for industry growth. Additionally, the Northeast is home to 22% of the country's population, giving industry a healthy pool of customers to serve, within a two-hour drive. New Jersey life science market continues to demonstrate its strength, despite receiving limited public funding.

VACANCY RATE

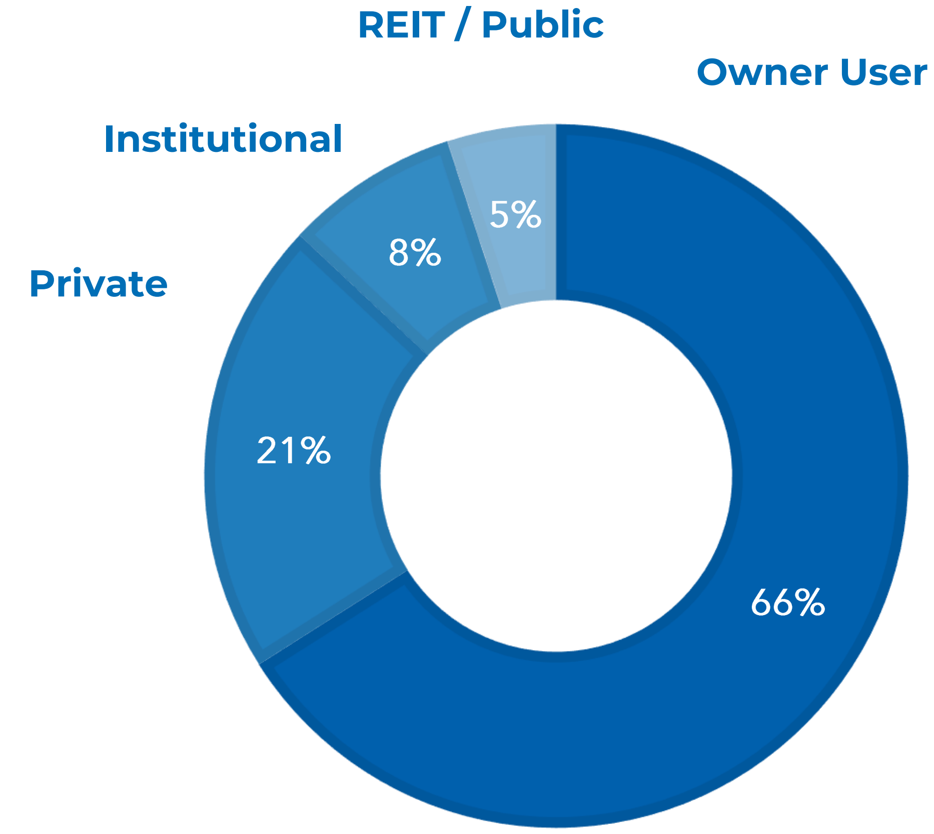


Source: TW Research. CoStar

LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Rutgers Biomedical	333	$182,713,684	Newark
Rutgers, The State Univ	123	$52,028,876	Piscataway
Princeton University	102	$48,723,055	Princeton
Hackensack University	24	$20,587,660	Hackensack
Rutgers (Newark)	23	$9,472,563	Newark
Cornell Institute Medical	6	$6,623,451	Camden
Rowan University	16	$5,676,720	Glassboro
New Jersey Institute Of Tech	15	$3,686,660	Newark
Park Therapeutics, Inc.	1	$3,329,591	Morristown
Kessler Foundation, Inc.	7	$2,410,981	East Hanover

INVENTORY BUILDING OWNERSHIP



TOP OWNERS: MERCK Bristol-Myers Squibb Johnson & Johnson

LEASE | Q4 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Nokia Bell Labs	New	French Street	360,000	New Brunswick
Ingredion	Renewal	10 Finderne Avenue	130,000	Bridgewater
Roche Molecular Systems	Renewal	1080 US Highway 202	82,000	Branchburg
Intergra Life Science	Renewal	104 Morgan Avenue	61,000	Plainsboro
AECOM	Renewal	311 Pennington Rock Hill	12,000	Pennington

DEVELOPMENT SPOTLIGHT: BeiGene Campus

400,000 RSF
Total Square Footage

42 ACRES
Total Space

16,000 liters
Manufacturing Capacity

LATE 2024
Expected Delivery

Source: TW Research. CoStar, NIH
*No sales activity noted

KEY MARKET POINTS

- Leasing activity remains strong, resilient preleasing
- Vacancy rates will be tested with a robust development pipeline
- Top academic institutions provide the market with a healthy qualified talent pool
- 240 Sierra Drive recently delivered 113,000 RSF to the inventory, 100% preleased

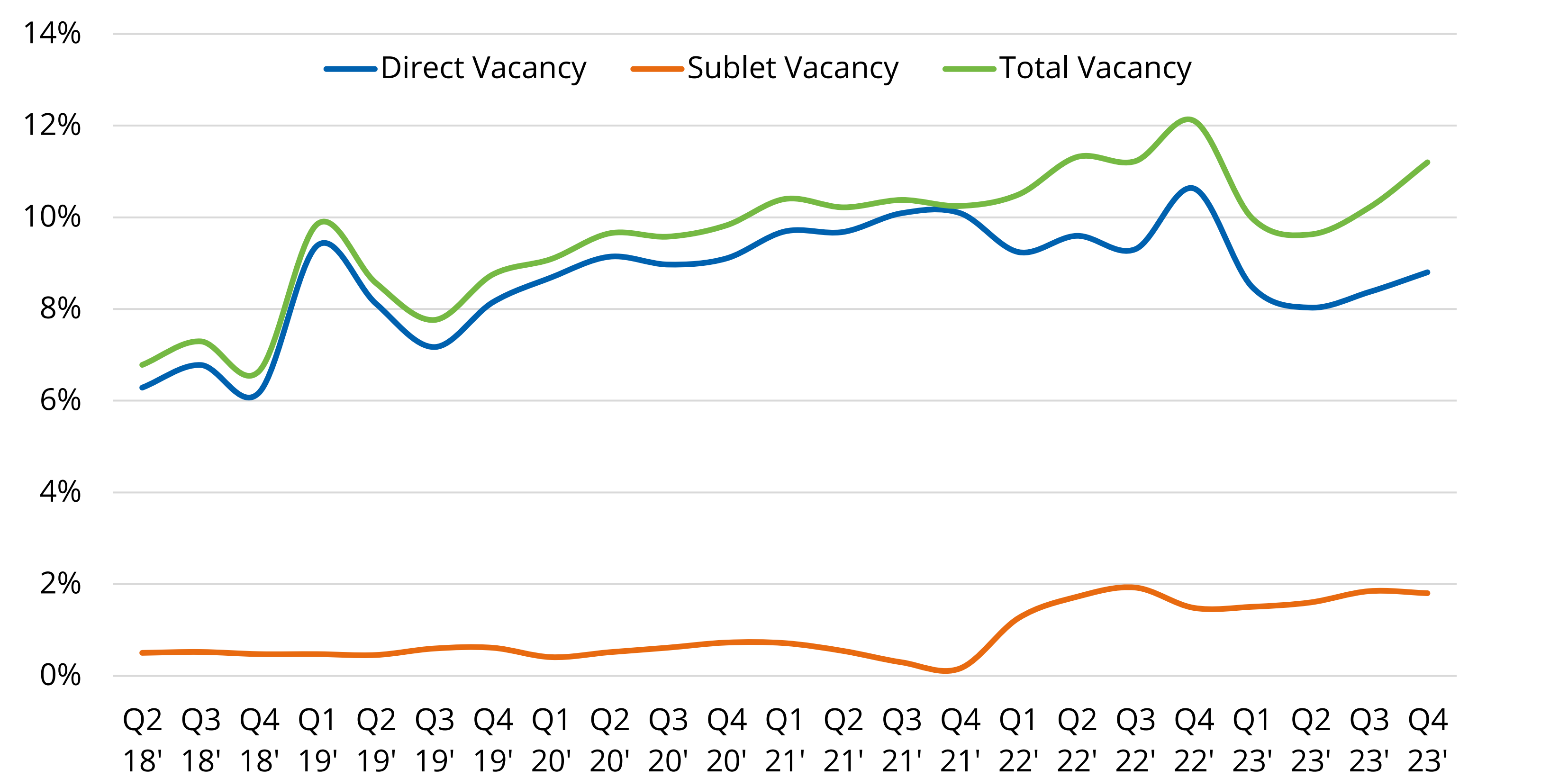
MARKET OVERVIEW

Philadelphia's life science market remains active, despite broad headwinds. Speculative developments within the pipeline are reporting strong preleasing activity. Two buildings were delivered to the local inventory, both of which were 100% preleased. Despite the strong preleasing, Philadelphia isn't immune from the issues that other markets face, as vacancy ticks upward with supply out pacing demand. The demand drivers remain strong, with education and governmental support aiding the ecosystems success. Philadelphia has been chosen to be a regional technology and innovation center from the federal government. The city will be able to tap into federal grant funds to help boost local infrastructure around supporting the life science and technology industries.

Synnovation Therapeutics secured $70.5M for their series A funding, a noteworthy investment into the local ecosystem. Philadelphia remains distinct from other markets in that the venture capital financing allocations are evenly distributed throughout the various rounds (Seed, Series A-D). Local venture capital financing to far has totaled $287 million, a decrease over the 400 million in 2022. Nonetheless, NIH funds to the regional ecosystem increased by 9% in 2023—a beacon of optimism amidst a decline in private investment.

TRENDLINES	Q4 2023	Q4 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	23.19	22.47	↑	↑
NET ABSORPTION (THOUSANDS SF)	(34.00)	125.99	↓	↔
VACANCY RATE	11.20%	11.27%	↔	↔
UNDER CONSTRUCTION (MSF)	6.0	7.33	↓	↓
ASKING RENT, FULL SERVICE (PSF)	$41.44	$38.96	↑	↑
YTD NIH STATE GRANTS (BILLIONS)	$2.11	$1.84	↑	↑

VACANCY RATE

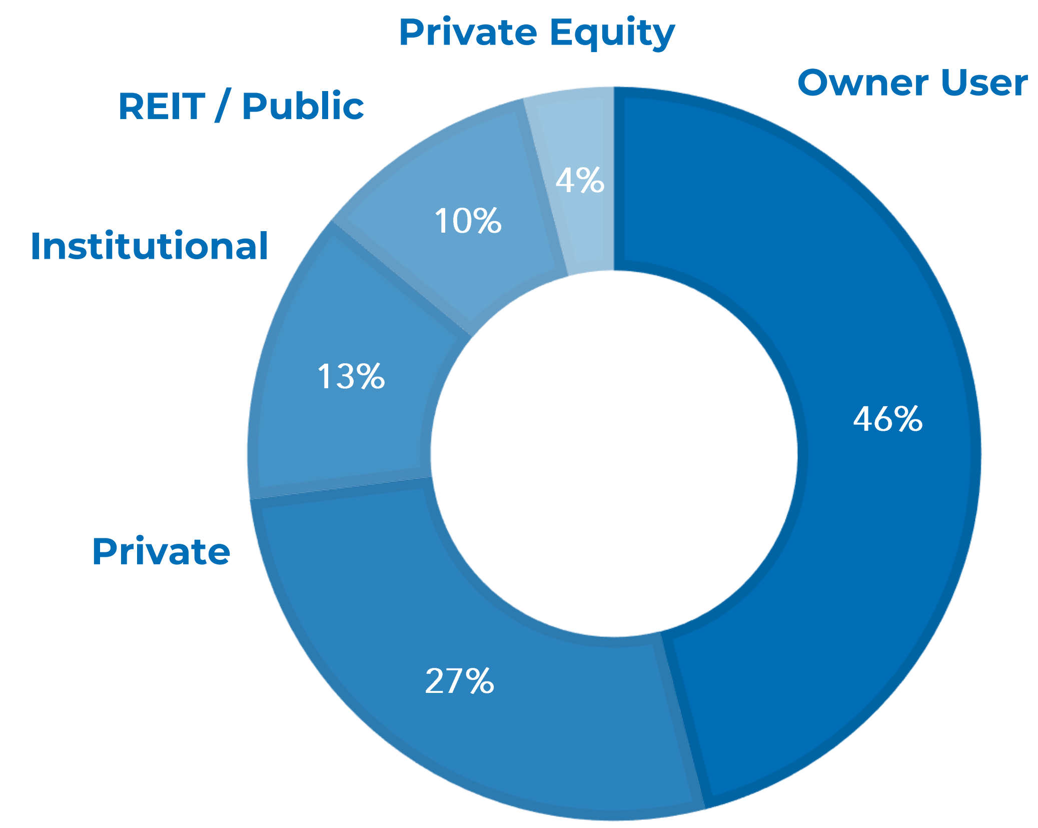


Source: TW Research. CoStar

LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
University Of Pennsylvania	1270	$651,631,196	Philadelphia
University Of Pittsburgh At Pittsburgh	1214	$641,387,029	Pittsburgh
Children's Hosp Of Philadelphia	301	$158,173,690	Philadelphia
Pennsylvania State University	199	$77,149,124	University Park
Temple Univ Of The Commonwealth	177	$74,788,352	Philadelphia
Pennsylvania State Univ Hershey Medical	141	$66,215,925	Hershey
Thomas Jefferson University	156	$65,331,419	Philadelphia
Drexel University	143	$59,039,591	Philadelphia
Wistar Institute	51	$42,161,515	Philadelphia
Carnegie Mellon University	81	$38,069,366	Pittsburgh

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

LEASE | Q4 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
DSM BioMedical	New	400 Devon Park Drive	80,500	Philadelphia
BioCoat Incorporated	New	1 Great Valley Parkway	37,500	King of Prussia
Tela Biologics	New	1 Great Valley Parkway	37,100	King of Prussia
BioMerieux	New	1201 Normandy Place	33,250	Philadelphia
WBC Bioscience	New	1000 Continental Drive	16,026	King of Prussia

SALE | Q4 2023

ADDRESS	TYPE	SIZE	PRICE	MARKET
1550 Valley Center Pkwy	Office	51,654	$2,424,000	Bethlehem
701 Veterans Circle	Office	155,200	$7,750,000	Warminster

Source: TW Research. CoStar, NIH

TRANSWESTERN

KEY MARKET POINTS

- Local market fundamentals remain stable with large investments continuing
- Vacancy rates tick upward, as supply outpacing demand
- FY 2024 shows an increase in NIH funding
- Sublease space increased at a rapid rate in previous 12-month period
- Large owner-user developments are forecasted to keep the spotlight on the local ecosystem

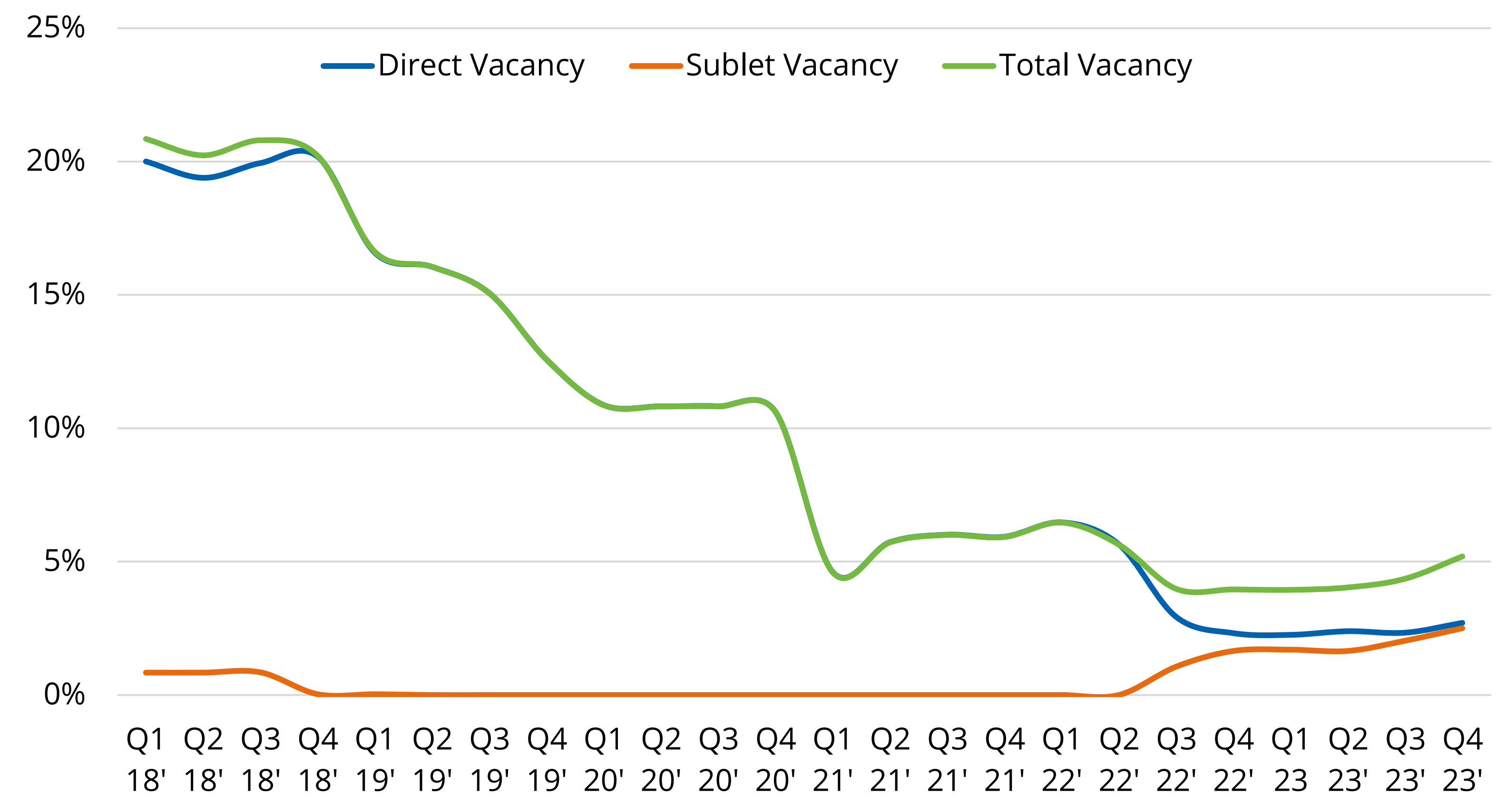
TRENDLINES	Q4 2023	Q4 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	10.60	10.49	↑	↔
NET ABSORPTION (THOUSANDS SF)	(49.14)	173,16	↓	↔
VACANCY RATE	5.22%	4.54%	↑	↑
UNDER CONSTRUCTION (MSF)	6,65	5.62	↓	↔
ASKING RENT, NNN (PSF)	$29.86	$27.93	↑	↑
YTD NIH STATE GRANTS (BILLIONS)	$1.97	$1.69	↑	↑

MARKET OVERVIEW

The Raleigh-Durham research triangle is the mid-Atlantic hub for the life sciences sector. The region primarily serves the agricultural industries, with a growing population of biotechnology firms gravitating toward the ecosystem. The lower cost of space, abundance of academic institutions and a below average cost of living makes the region an attractive option for investment. The triangle research park anchors the region, accounting for about 80 percent of the firms being located within the expansive developments. The concentrated nature of the tenants allows the cluster to thrive, mimicking larger clusters like Boston, South San Francisco and San Diego.

Eli Lilly recently announced their $450M investment into expanding their investment into the region. Additional early-stage funding has garnered attention, investments like: IMMvention Theraputix series A raised $33M, and Atsena Therapeutics series B raised $24M. Private VC funding velocity has decreased nationwide, yet the research triangle has experienced a shallower dip YOY.

VACANCY RATE



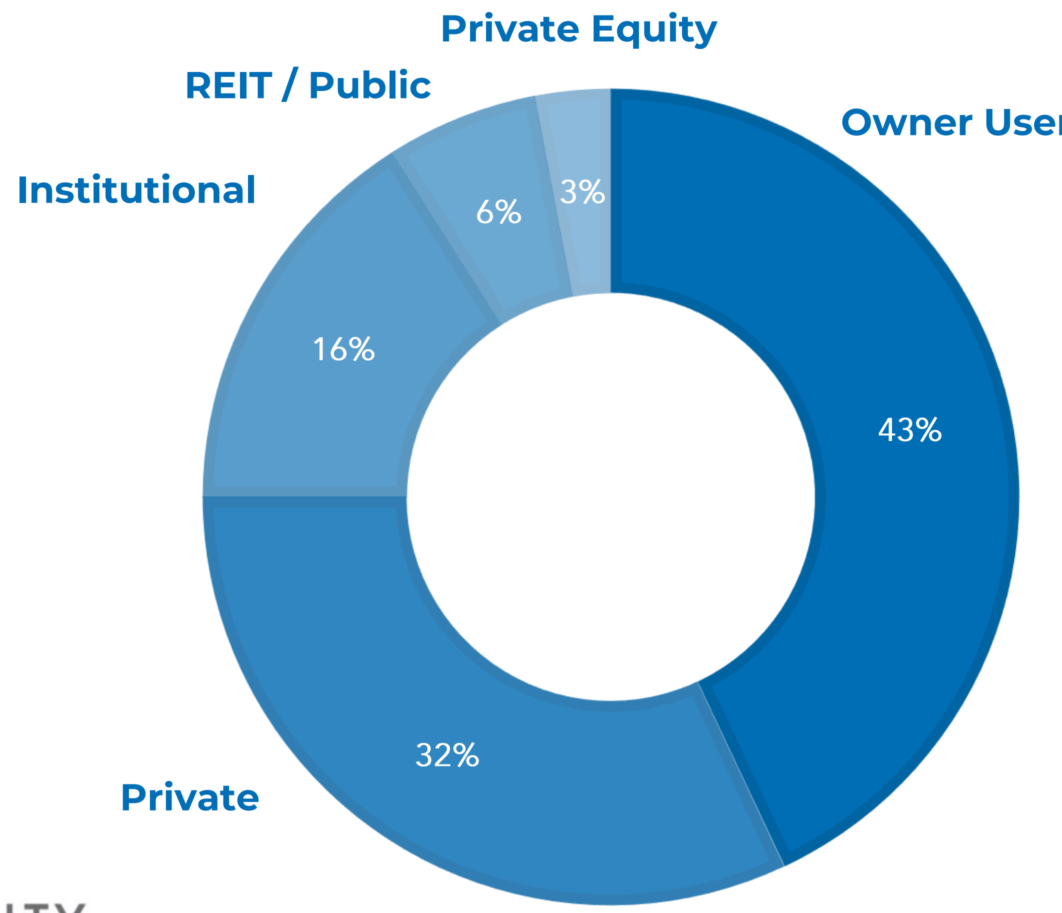
Source: TW Research. CoStar

TRANSWESTERN

LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Duke University	970	$609,267,868	Durham
Research Triangle Institute	70	$503,809,542	Research Triangle Park
Univ Of North Carolina Ch.	983	$487,330,542	Chapel Hill
Wake Forest University Health	252	$140,744,476	Winston
North Carolina State University Raleigh	113	$41,727,917	Raleigh
Family Health International	3	$23,824,725	Durham
Rho Federal Systems Division, Inc.	4	$22,465,655	Durham
Epicypher, Inc.	14	$12,622,074	Research Triangle Park
East Carolina University	26	$9,263,765	Greenville
University Of North Carolina Charlotte	32	$9,164,544	Charlotte

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

ALEXANDRIA

LONGFELLOW

TRINITY CAPITAL

LEASE | Q4 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Forge Nano	New	South Port Drive	175,000	RTP
Precision BioSciences	New	302 Pettigrew Street	72,300	RTP
Baxter International	New	1501 Norwell Road	54,750	Morrisville
BioPlus Specialty	New	4900 Prospectus Drvie	41,550	RTP
Verona Pharmaceuticals	New	8529 Six Forks Road	32,000	RTP

SALE | Q4 2023

ADDRESS	TYPE	SIZE	PRICE	MARKET
8900 Capital Blvd	Office	80,000	$11,500,000	Raleigh
4205 Miami Blvd	Office	774,000	$66,000,000	Durham

Source: TW Research. CoStar, NIH

KEY MARKET POINTS

- New inventory set to be delivered within the next 12-18 months
- Proximity to South California's mature transportation infrastructure
- Strong employment growth is forecasted to continue
- Private and public funding sources support local ecosystem

TRENDLINES	Q4 2023	Q4 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	18.10	17.59	↑	↑
NET ABSORPTION (THOUSANDS SF)	30.05	(50.51)	↑	↓
VACANCY RATE	11.16%	8.67%	↑	↑
UNDER CONSTRUCTION (MSF)	5.45	6.92	↓	↓
ASKING RENT, NNN (PSF)	$47.25	$45,79	↑	↓
YTD NIH STATE GRANTS (BILLIONS)	$4.95	$4.66	↑	↑

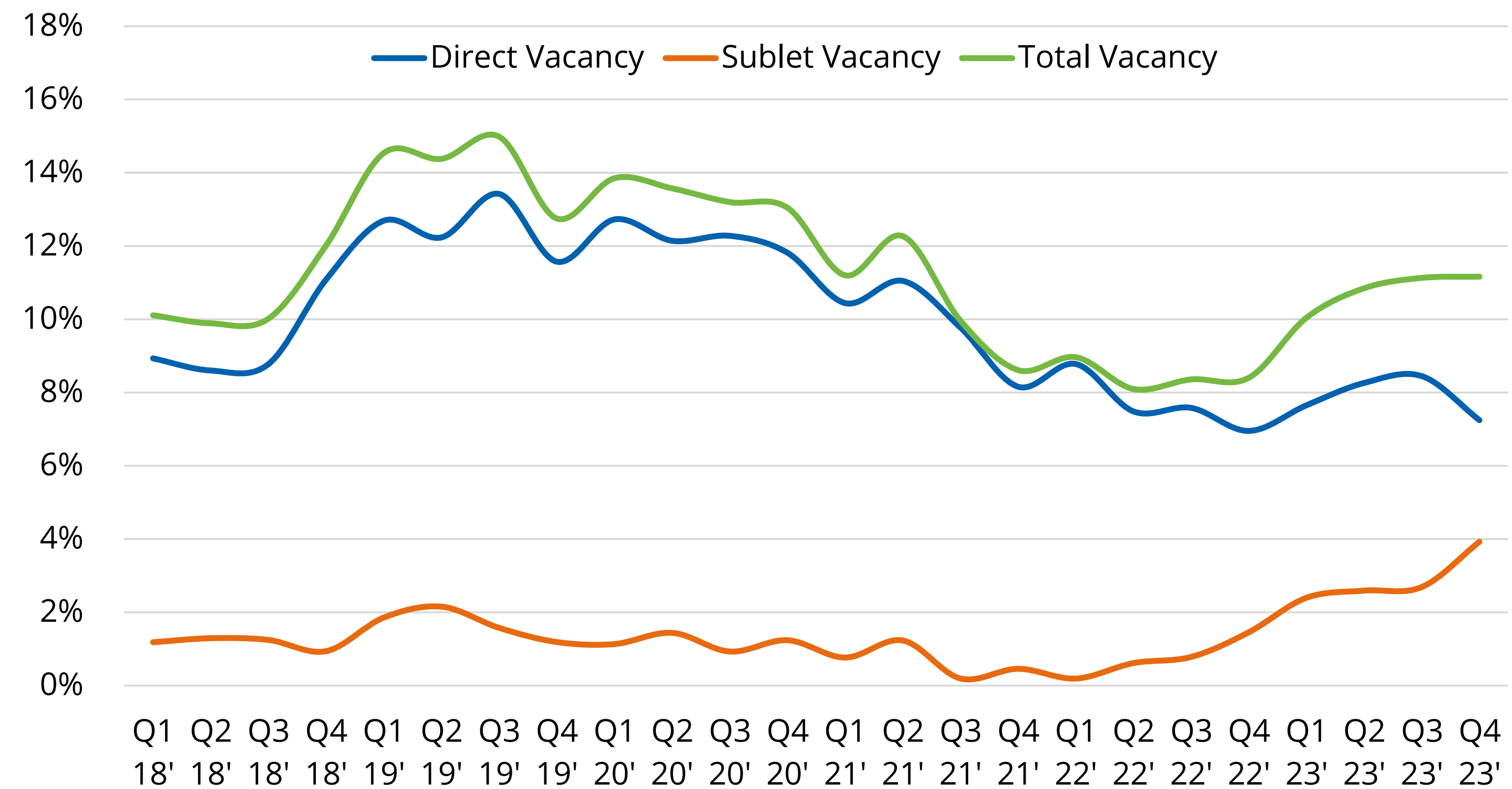
MARKET OVERVIEW

The San Diego life science market continues to be the third most active hubs in the nation, with both Torrey Pines and Carlsbad being largely driven by REIT and private investment inventory. Recent sales activity is fueled by REIT asset recycling programs; while leasing is led by REITs guiding tenants to expand within their portfolio. Academic partnerships remain the backbone of the region, with increased public funding towards research arms, spinning off early-stage firms.

Local organization Biocom California recently noted that the San Diego life sciences market generated an estimated $57B in 2022, an increase of $3B over 2021. Local venture capital funding remains strong: Lassen Therapeutics raised $85M and Iambic-Discovery Tools raised $104M.

Large multinational firms continue to expand within the region, as San Diego's proximity to the Bay Area becomes increasingly more evident. Earlier in the year Genentech announced plans to move production from northern California to Oceanside yet keep R&D functions in northern California.

VACANCY RATE



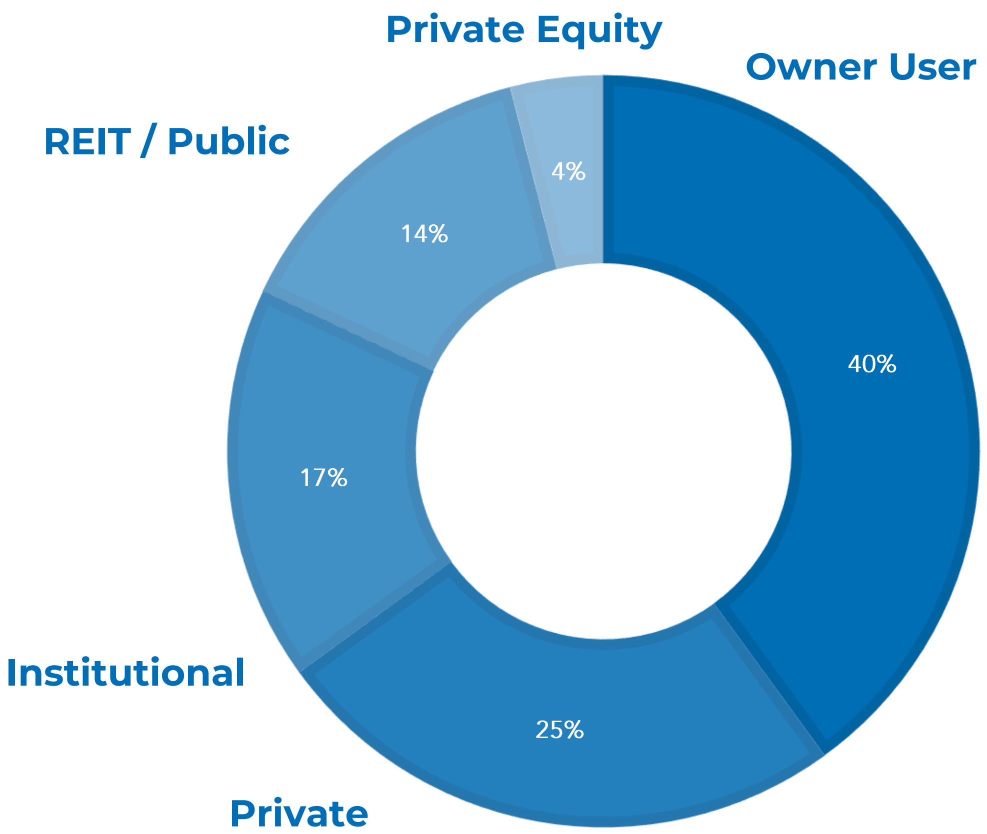
Source: TW Research. CoStar

TRANSWESTERN

LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
UNIVERSITY OF CALIFORNIA, SAN DIEGO	1081	$569,797,447	La Jolla
SCRIPPS RESEARCH INSTITUTE, THE	207	$221,039,261	La Jolla
SALK INSTITUTE FOR BIOLOGICAL STUDIES	82	$68,740,206	La Jolla
SANFORD BURNHAM PREBYS MEDICAL DISCOVERY	63	$53,185,672	La Jolla
SAN DIEGO STATE UNIVERSITY	74	$34,415,913	San Diego
LA JOLLA INSTITUTE FOR IMMUNOLOGY	35	$33,328,529	La Jolla
VETERANS MEDICAL RESEARCH FDN/SAN DIEGO	17	$6,147,618	San Diego
SAN DIEGO BIOMEDICAL RESEARCH INSTITUTE	12	$5,670,155	San Diego
PROTEOGENOMICS RESEARCH INSTIT/SYS/ MED	4	$4,539,807	La Jolla
CENTER FOR INNOVATIVE PUBLIC HEALTH	5	$4,323,709	San Clemente
J. CRAIG VENTER INSTITUTE, INC.	6	$4,125,903	La Jolla

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

Blackstone
Healthpeak PROPERTIES
ALEXANDRIA

LEASE | Q4 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
ACON Labs	New	94480 Carrol Park Road	97,500	San Diego
Gateway Labs	New	4796 Executive Drive	61,800	Torrey Pines
Architecture Therapeutic	New	11202 El Camino Road	36,000	-
Velia Therapeutics	New	10075 Barns Canyon Road	32,000	Sorrento Valley
Contineum Therapeutics	New	3565 General Atomics Court	29,000	Del Mar Heights
IAVI	New	40 Executive Drive	18,000	Sorrento Valley
		-		

SALE | Q4 2023

ADDRESS	SIZE	PRICE	MARKET
27027 Tourney Road	224,000	$67,000,000	Santa Clarita
11075 Roselle Street	24,200	$8,799,000	Sorrento Valley
11025 Roselle Street	18,500	$4,900,000	Sorrento Valley
11035 Roselle Street	19,000	$5,000,000	Sorrento Valley

Source: TW Research. CoStar, NIH

TRANSWESTERN

KEY MARKET POINTS

- Vacancy rates largely driven by new deliveries
- Local employment growth remains positive
- Interest rate hikes mute sales transactions
- Noteworthy uptick in sublease space in last 10-months
- 5.5 MSF of new supply slated to deliver in next 12-months
- Growing connection between San Diego and San Francisco

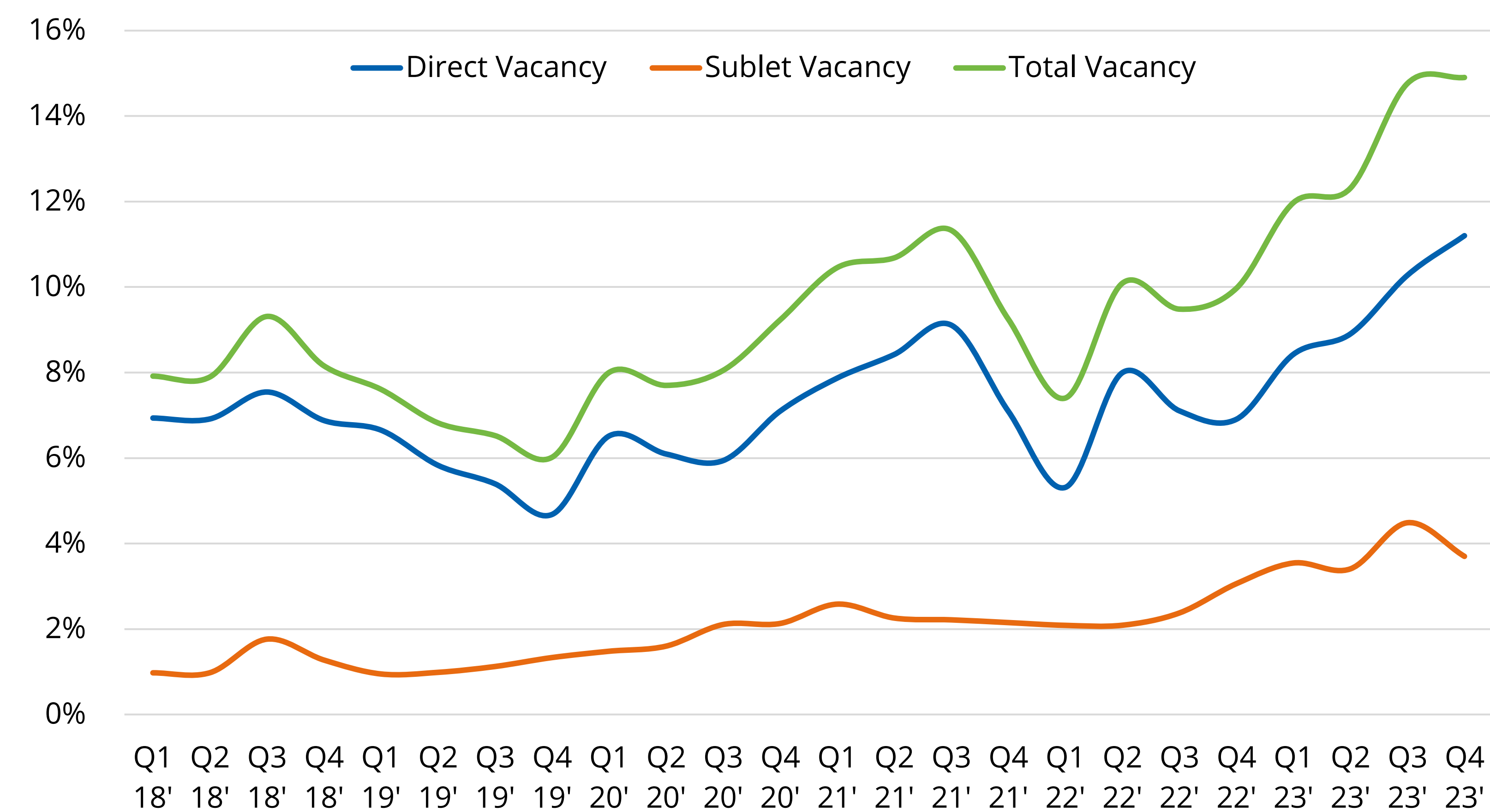
MARKET OVERVIEW

The San Francisco life science's market continues to show strength in the face of challenging industry fundamentals. Many life science markets around the nation face a massive supply pipeline with moderate preleasing activity, ultimately pushing vacancy rates higher quarter after quarter for the last 18-months. San Francisco has the second highest number of developments currently underway, totaling 11.82 MSF. Entitlements and permits continue to progress, signaling that new development isn't fully on pause. Starts are down 50% YOY, still above pre-pandemic levels. In December 2023, Healthpeak properties received approval of entitlements for Phase II & III of Vantage in South San Francisco.

The science and technology within the sector continue to gather positive momentum, after a demanding 2022 and 2023. Pressures from the capital markets within the last 24-months have turned firms away from unnecessary risk. News headlines denoting life science industry layoffs overshadow the local employment growth numbers, remaining positive YOY. Preliminary local census numbers show that 65,000 more people have moved into the bay area since 2022, bucking any notion that the region is seeing a decreasing population.

TRENDLINES	Q4 2023	Q4 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	45.51	44.30	↑	↑
NET ABSORPTION (THOUSANDS SF)	114.07	483.0	↑	↑
VACANCY RATE	14.90%	9.88%	↑	↑
UNDER CONSTRUCTION (MSF)	11.82	13.35	↓	↓
ASKING RENT, NNN (PSF)	$59.83	$57.97	↓	↑
YTD NIH STATE GRANTS (BILLIONS)	$4.95	$4.77	↑	↑

VACANCY RATE



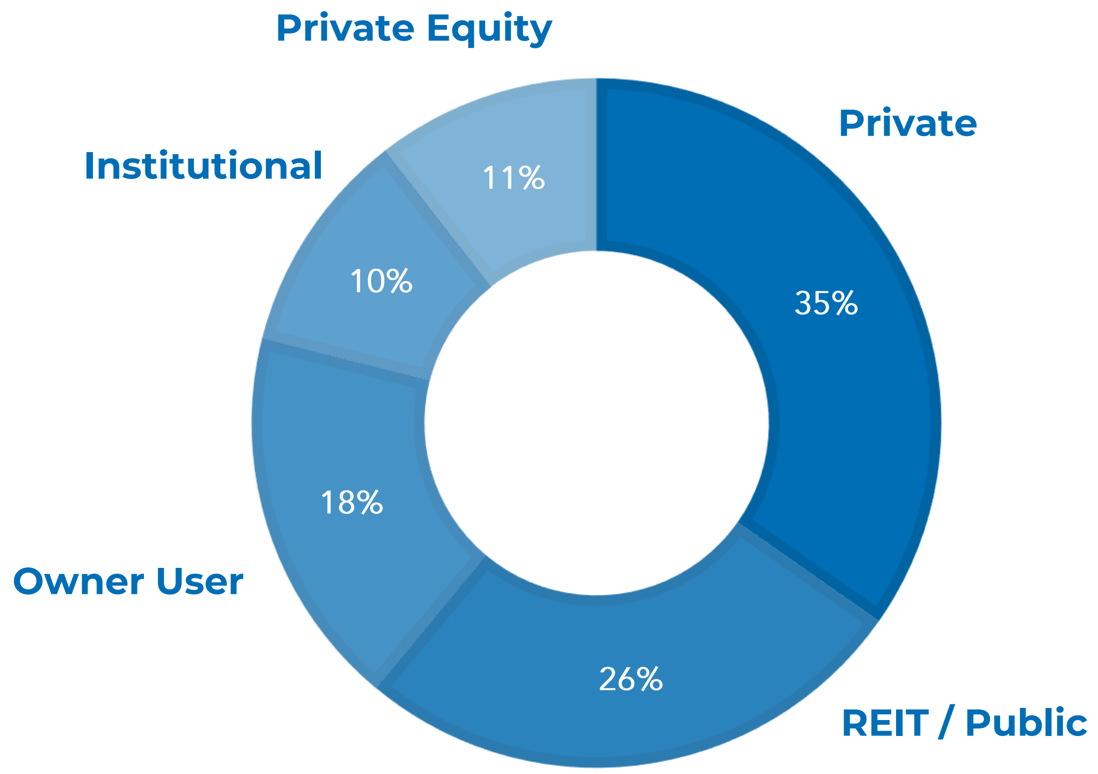
Source: TW Research. CoStar

TRANSWESTERN

LOCAL NIH FUNDING AWARDS

ORGANIZATION	AWARDS	FUNDING	CITY
University Of California, San Francisco	1,435	$720,236,546	San Francisco
Stanford University	1,134	$626,387,484	Stanford
University Of California, Davis	553	$275,377,515	Davis
University Of California, Berkeley	323	$137,762,533	Berkeley
Kaiser Foundation Research Institute	113	$83,626,435	Oakland
Northern California Institute/Res/Edu	28	$48,861,310	San Francisco
University Of California, Santa Cruz	98	$44,467,491	Santa Cruz
J. David Gladstone Institutes	48	$40,663,812	San Francisco
Public Health Institute	17	$32,081,379	Oakland
University Of California, The Lawrence Berk Lab	23	$21,108,764	Berkeley
Buck Institute For Research On Aging	28	$17,722,149	Novato

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

Healthpeak PROPERTIES

ALEXANDRIA

Blackstone

LEASE | Q4 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Cargo Therapeutics	New	835 Industrial Avenue	100,000	South San Francisco
Alots Labs	Renewal	100 Bridge Parkway	72,500	South San Francisco
Cymabay Therapeutics	New	7601 Bumbarton Circle	52,000	Fremont
Vaxcyte	New	825 Industrial Road	35,750	San Carlos
Rani Therapeutics	New	47733 Fremont Road	34,000	Fremont
Initial Theraputics	Renewal	285 E. Grand Avenue	32,500	South San Francisco
Soleil Labs	Sublease	233 E. Grand Avenue	32,250	South San Francisco
GraphiteBio	New	235 E. Grand Avenue	21,250	South San Francisco

SALE I Q4 2023

ADDRESS	SIZE	PRICE	MARKET
2825 North 1ST Street	52,000	$34,070,000	San Jose
2995 Middlefield Road	8,000	$8,000,000	Palo Alto

Source: TW Research, CoStar. NIH

KEY MARKET POINTS

- Robust public funding continues to boost the local life sciences industry, totaling over $2B
- Balanced development pipeline inline with current demand, pacing positive absorption
- Asking rates being driven by new space and healthy tenant improvement allowances
- Net absorption remains positive, with a 12-moth total 104,000

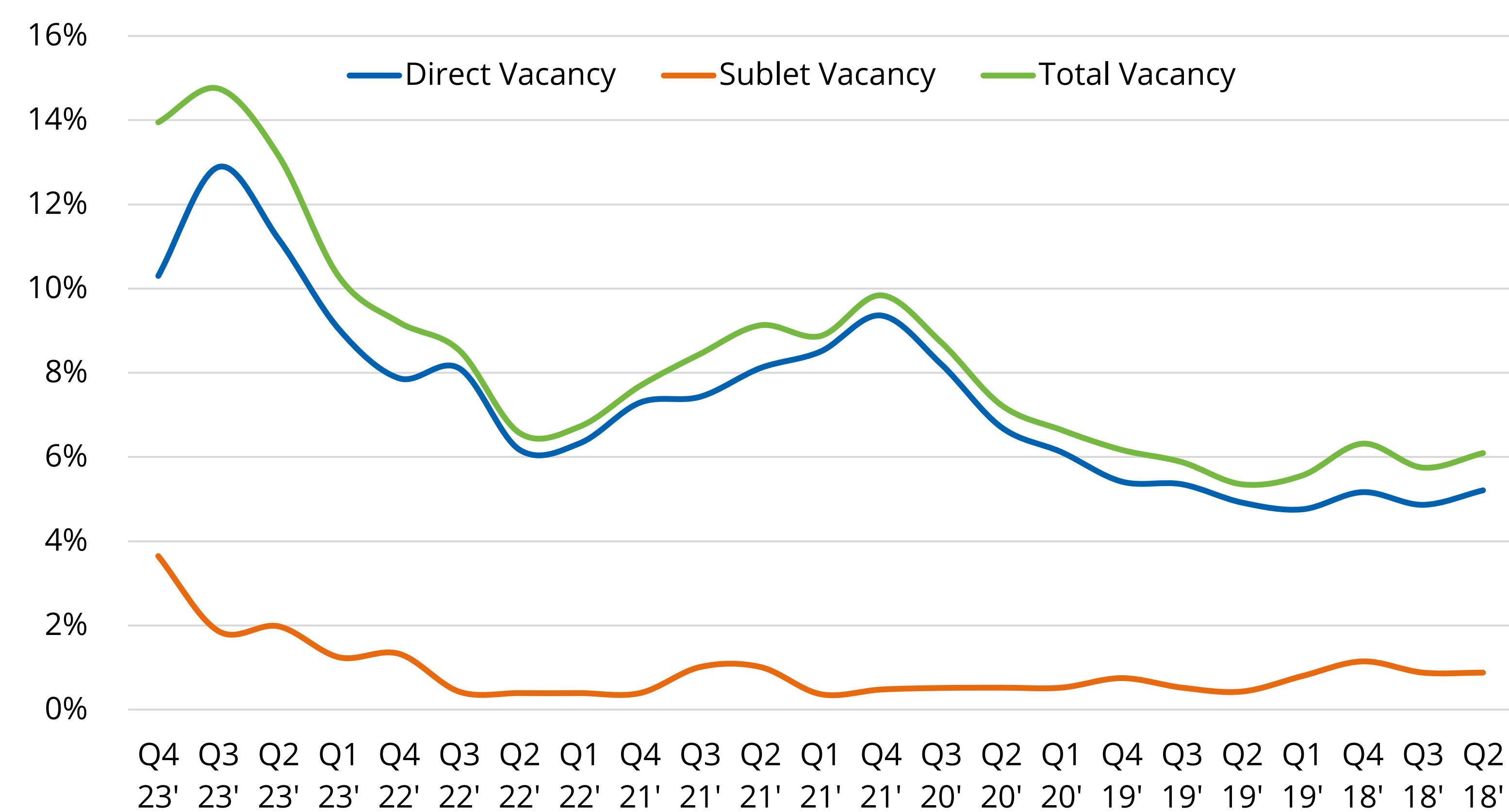
MARKET OVERVIEW

The greater Washington DC and I-270 markets have felt the systemic waning of transaction activity over the last 12-months. Despite the turbulence, our nation's capital is uniquely able to call top governmental funding agencies home, aiding the local life sciences industry's growth. The spirt of collaboration and support across public and private entities remains strong. John Hopkins University remains the top recipient of NIH funding; as well as a growing number of startups budding out of their ecosystem, totaling $2.05B of NIH funding.

The impact of Operation Warp Speed is still being felt in the area, as act-boosted science and business continue to expand. The region's life science inventory is largely second-generation space, which continues to raise the asking rates. Life science tenants with credit and leverage continue to get landlord buy-in through increased tenant improvement allocations. The development pipeline remains balanced and inline with that local demand can realistically absorb. I-270's proximity between the Boston and RTP markets continues to be a tailwind for the local life sciences industry.

TRENDLINES	Q4 2023	Q4 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	10.82	10.14	↑	↑
NET ABSORPTION (THOUSANDS SF)	24.32	(90.62)	↑	↔
VACANCY RATE	13.90%	8.93%	↑	↔
UNDER CONSTRUCTION (MSF)	1.95	1.90	↓	↓
ASKING RENT, NNN (PSF)	$54.63	$49.65	↑	↓
YTD NIH DMV GRANTS (BILLIONS)	$2.05	$1.94	↑	↑

VACANCY RATE



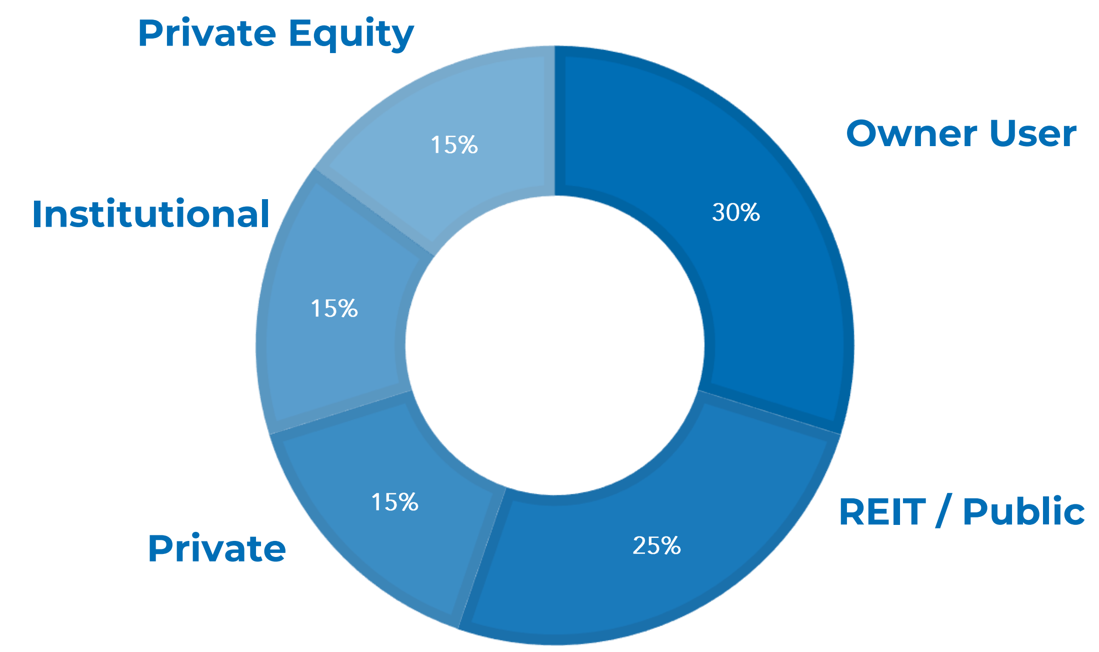
Source: TW Research. CoStar

TRANSWESTERN

LOCAL NIH FUNDING AWARDS I 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Johns Hopkins University	1411	$786,942,854	Baltimore
University Of Maryland Baltimore	398	$199,072,287	Baltimore
University Of Virginia	428	$195,737,528	Charlottesville
Virginia Commonwealth University	251	$102,111,540	Richmond
George Washington University	121	$73,054,344	Washington
Univ Of Maryland, College Park	147	$59,886,334	College Park
Virginia Polytechnic Institute	144	$54,194,708	Blacksburg
Georgetown University	130	$52,677,904	Washington
University Of Delaware	95	$47,615,926	Newark
Children's Research Institute	77	$32,071,360	Washington

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

ALEXANDRIA

AstraZeneca

MATAN

LEASE I Q4 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
AstraZeneca	New	700 Progress Way	200,000	Gaithersburg
AstraZeneca	Renewal	45 Watkins Drive	72,000	Rockville
BioQual	Renewal	1330 Piccard Drive	43,000	Rockville
UMD Institute	New	6116 Executive Blvd	27,500	Rockville
Immunocore	New	9801 Washington Blvd	19,250	Rockville
Innovative Cellular T.	New	50 W Gude Drive	11,900	Rockville

SALE I Q4 2023

ADDRESS	SIZE	PRICE	MARKET
12725 Twinbrook Parkway	58,880	$6,250,000	North Rockville
7495 New Technology Way	30,428	$8,000,000	Frederick
7320 Executive Way	43,876	$6,800,000	Frederick

Source: TW Research. CoStar, NIH

TRANSWESTERN

Market	Inventory Square Feet	Overall Vacancy Rate	Net Absorption	12-Month Net Absorption	Asking Rents	Annual Rent Change	Under Construction
Boston	66,401,200	12.01%	(131.500)	44,000	$58.10	10.51%	23,100,000
Chicago	12,005,750	11.80%	58,150	77,500	$46.70	15.16%	810,000
Houston	4,309,900	12.14%	(58,770)	582,350	$46.20	15.73%	1,250,000
New Jersey	32,680,000	12.27%	(194,130)	(471,800)	$36.40	5.50%	1,700,000
New York	3,643,816	32.68%	38,350	155,650	$55.91	1.5%	850,000
Philadelphia	23,198,100	11.06%	(34,100)	648,400	$41.44	6.36%	6,000,000
Raleigh/Durham	10,621,000	7.22%	(49,145)	(91,811)	$29.86	6.90%	6,650,000
San Diego	18,108,500	11.10%	(30,050)	(425,090)	$47.25	3.10%	5,450,000
San Francisco	45,517,750	14.90%	114,070	(968,250)	$59.83	2.30%	11,825,000
Washington DC	10,820,000	10.14%	24,320	104,380	$54.63	10.03%	1,950,000
TOTAL	227,306,016	13.35%	(134,236.5)	(344,671)	$53.98	6.11%	59,558,000

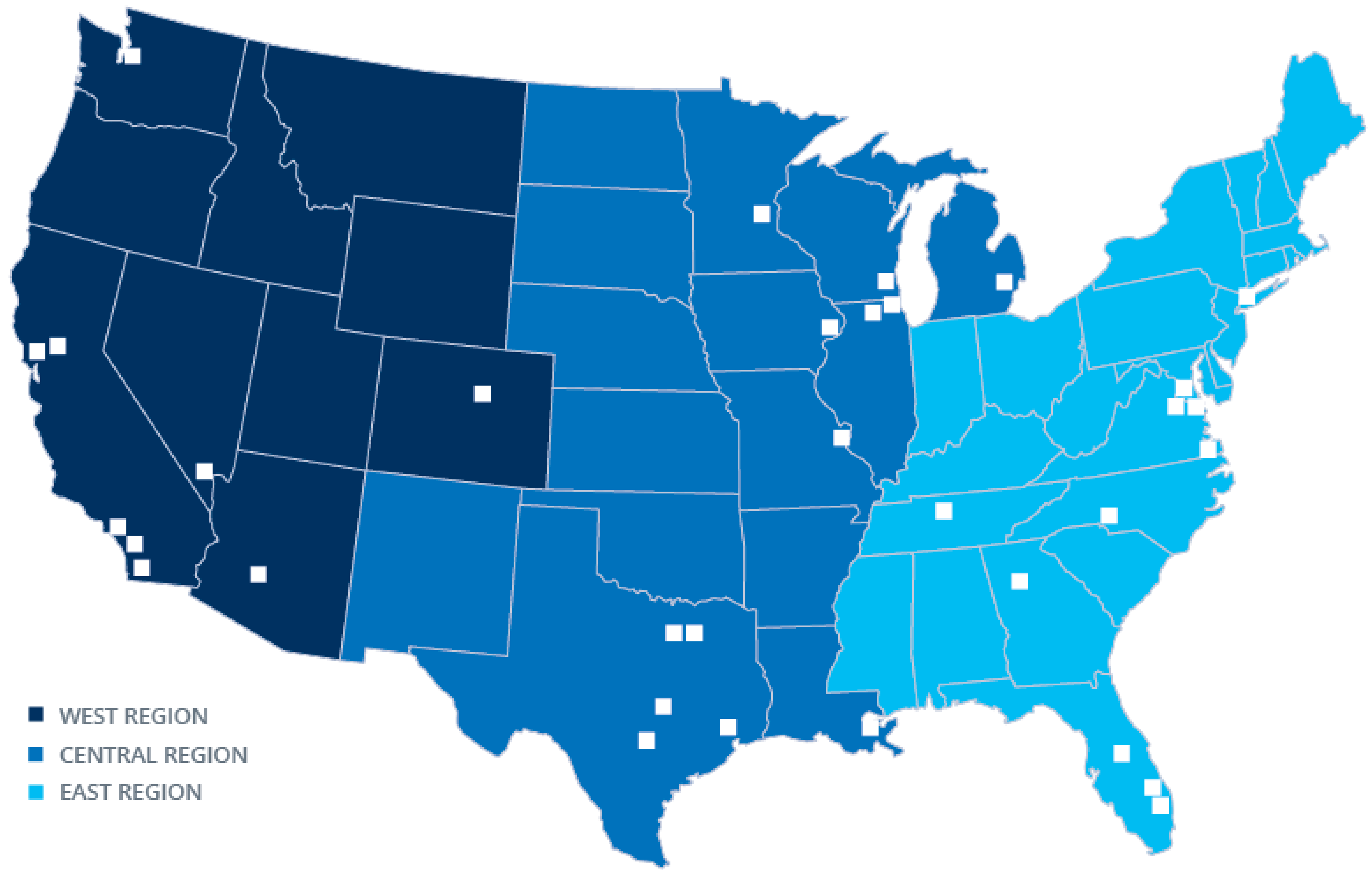
Source: TW Research. CoStar

National Coverage

33 Offices – 3 Regions

Transwestern's research team has sorted through tens of thousands of buildings to amass a qualified building inventory. Our aim is to identify the entire life sciences market inventory by including owner users, suburban markets and outliers that are vital to understanding the entire ecosystem.

At Transwestern, our insights are rooted in granular data that is evaluated and envisioned to identify, execute and deliver tangible value for our clients and industry partners. Please feel free to connect with our team, as we embrace industry collaboration within the life sciences community.



REAL ESTATE SERVICES (TRS)

Agency Leasing
Asset Services
Capital Markets
Tenant Advisory + Workplace Solutions
Research & Investment Analytics

INVESTMENT GROUP (TIG)

Separate Accounts
Discretionary Funds
Non-Discretionary Accounts
Investment Analysis

DEVELOPMENT COMPANY (TDC)

Speculative
Build-to-Suit
Fee Development

VENTURES (TWV)

Opportunistic Investments
Special Situations
Integrated Operating Partnerships

ROH

Hospitality Integration
Asset Repositioning
Boutique Hotel Development

TRANSWESTERN

PRIMARY AUTHOR

Alex Browne
Life Science Research Director
Alex.Browne@transwestern.com
415 489 1785

FOR MORE INFORMATION

Elizabeth Norton
Sr. Managing Director
Research Services
Elizabeth.Norton@transwestern.com
202 775 7026

Doug Prickett
Sr. Managing Director
Research & Investment Analytics
Doug.Prickett@transwestern.com
214 292 6406

ABOUT TRANSWESTERN

Four dynamic, integrated companies make up the Transwestern enterprise, giving us the perspective to think broadly, deeply and creatively about commercial real estate. Clients and investors rely on us for expertise that spans institutional and opportunistic investment, development, hospitality, and brokerage and asset services. Our award-winning, collaborative culture empowers team members with resources and independence to work across boundaries in pursuit of innovative solutions, reinforcing a reputation for service excellence that translates to measurable results. Through offices nationwide and alliance partners around the globe, we positively impact the built environment and our communities while fostering a work climate that champions career vitality for all. Learn more at transwestern.com and @Transwestern.

RESEARCH METHODOLOGY

The information in this report is a compilation of life science properties including office, industrial and flex. Qualified properties must include one of the following spaces, laboratory, cleanroom, dry laboratory or GMP space. All properties are in select U.S. metropolitan areas. Government and on-campus academic owned buildings are excluded from analysis. All rents are reported as triple net and can be skewed, in some cases, due to factors including, but not limited to, the level of new construction and the amount of available space with no listed asking rents.

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