

APARTMENT LEADERSHIP RESIDES HERE™

State of the Apartment Industry - Market Trends and Outlook

2020 NMHC Research Forum Webinar Series

April 2, 2020



Webinar Host

Mark Obrinsky
SVP, Research and Chief Economist
NMHC







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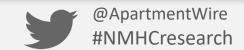












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Webinar Information

- To ensure good sound quality, all attendees will be muted during the webinar.
- To ask a question: type your question in to the Question Box on your control panel. NMHC staff will review and present your question to the speakers at the end of the presentation as time allows.
- Today's webinar is being recorded and will be made available on the NMHC website.
- This webinar is closed to media and intended for information purposes only.

NMHC Mission

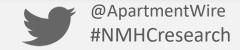
The mission of NMHC is to create opportunities for the industry's best and brightest to come together to leverage smart decision making and collaborative action to shape a positive future for their business, the multifamily housing industry and the communities they help build.



AGENDA

- Welcome and Overview
- Short-term: COVID-19 and Market Impacts
- Market Trends and Outlook
 - Steven Guggenmos, Vice President, Research & Modeling, Investments & Advisory, Freddie Mac
 - Jay Lybik, Vice President, Research Services, IPA
 - Jeff Adler, Vice President, Yardi
- Panel Discussion and Questions
- Closing Remarks





Jeff Adler
Vice President
Yardi

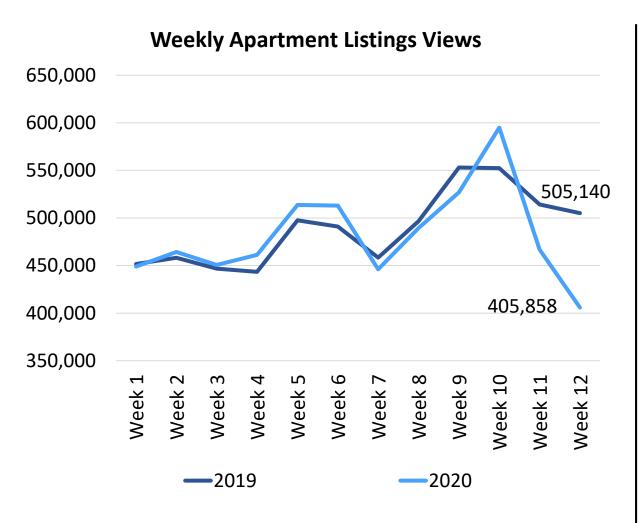


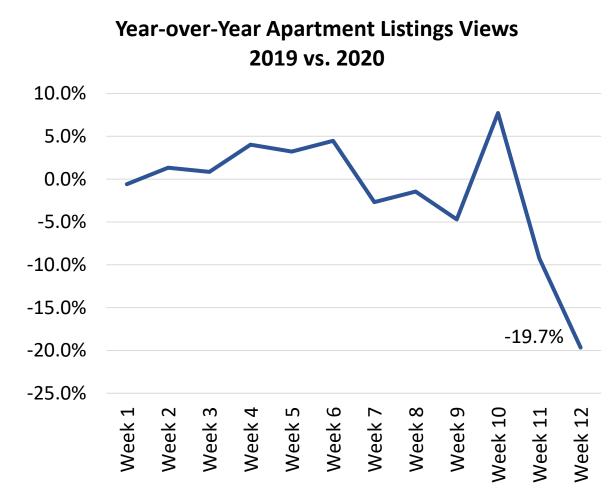




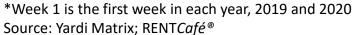


Weekly Apartment Listings Views from RENT*Café*Have Fallen Drastically with Spread of Coronavirus



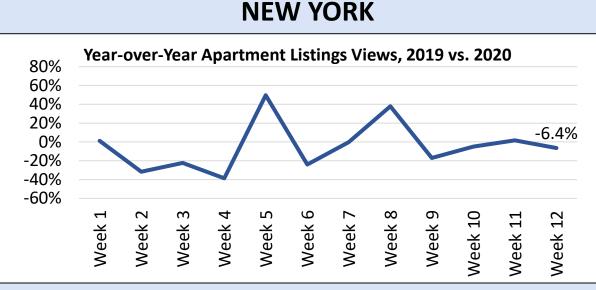


YARDI



Weekly Apartment Listings Views – Highlight Metros

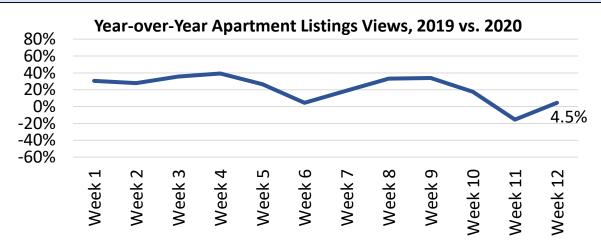








PORTLAND

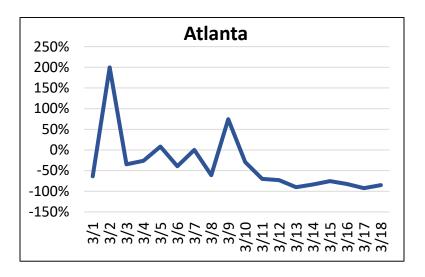


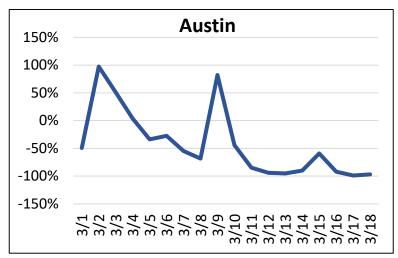
DENVER

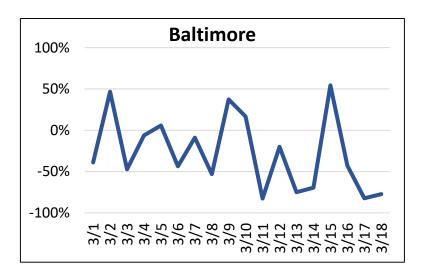


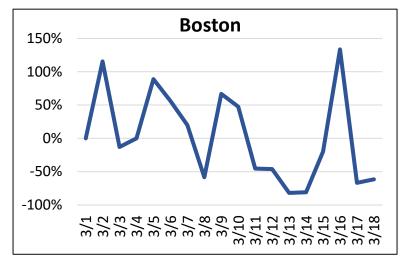
*Week 1 is the first week in 2020 Source: Yardi Matrix; RENT*Café*®

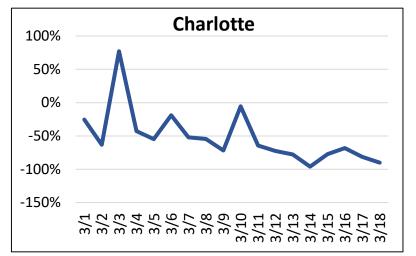
Leasing Call Center Volume Has Dropped Significantly







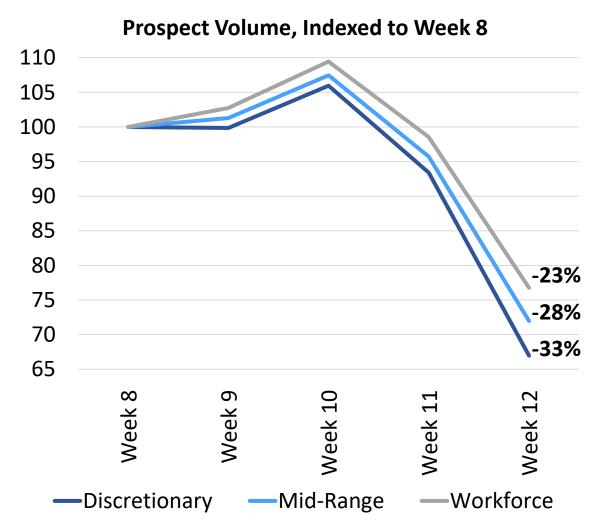


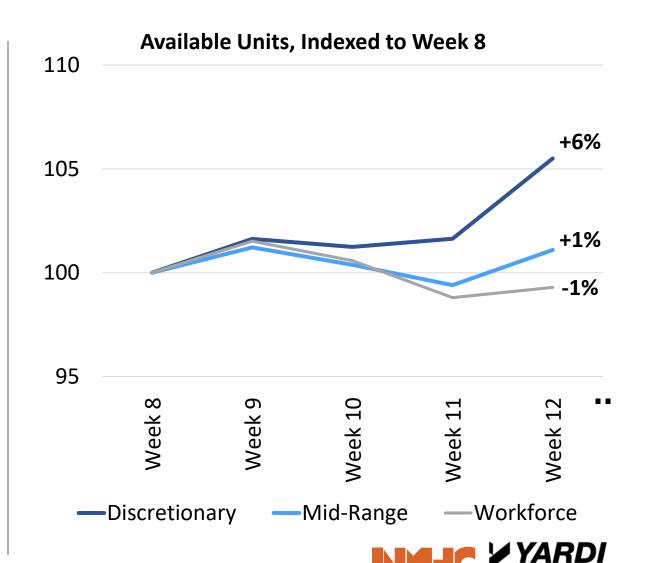


NMHC YARDI

Source: Yardi Matrix; Yardi Systems

Availability Has Remained Constant Due to a Decrease in Turnover





*Week 8 starts at 2/17/20, week 12 ends 3/22/20 Source: Yardi Matrix; Yardi Systems



Top 10 and Bottom 10 Based on Overall Rating

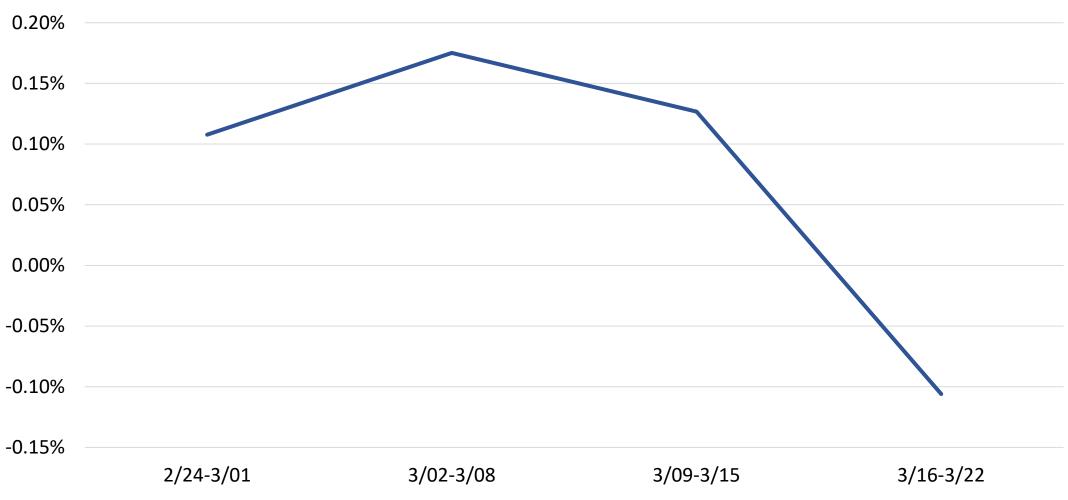
Market	Prospect Volume	Availability	Approvals	Notices	Overall		
Top 10 Markets Ranked Based on Yardi Operating Data							
Indianapolis	1						
Nashville							
Baltimore					3 4		
Cincinnati							
Jacksonville		Loactin	anactad		5		
St. Louis		Least III	npacted		6		
Albuquerque							
Houston							
Salt Lake City					9		
Inland Empire							
	Botto	m 10 Markets Ranke	ed Based on Yardi O _l	perating Data			
New York							
San Jose		Mact Impacted					
Los Angeles							
Seattle							
San Francisco							
Miami		Most Impacted					
Sacramento							
Orange County							
Portland							
Boston					31		

Source: Yardi Matrix; Yardi Systems



National Asking Rents per Unit Are Dropping Off





NM-IC Y YARDI

Source: Yardi Matrix; Rentmaximizer



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Steve Guggenmos

Vice President, Research & Modeling, Investments & Advisory Freddie Mac



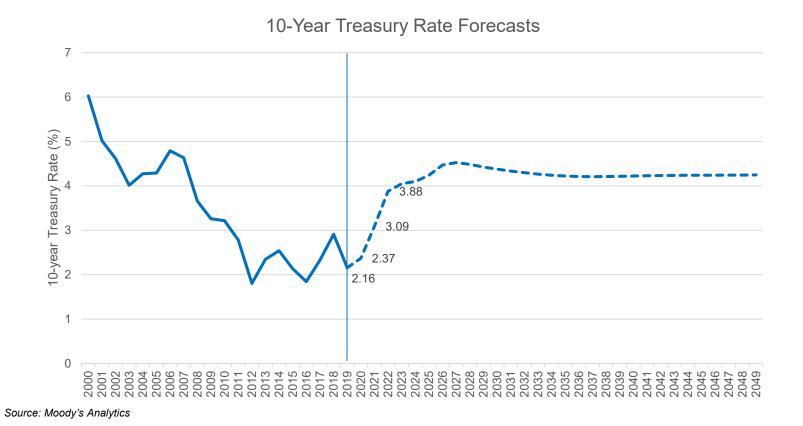




Treasury Rate Forecasts



- Moody's Analytics Treasury rate forecasts
 - » 10-year Treasury rates were expected to increase 170bps in 3 years
 - » Moody's forecasted rates of 2.4% in 2020, and up to 3.1% in 2021 and settling in above 4%

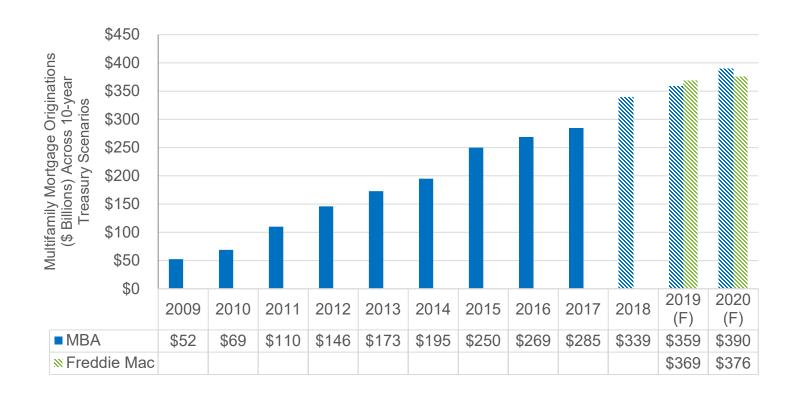


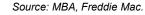


Multifamily Origination Volume Forecasts



In Forecasts entering the year MF originations continued to rise



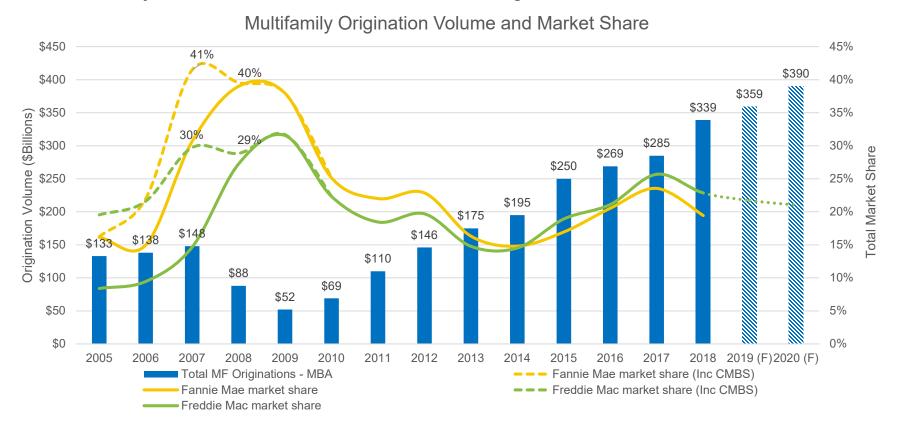




Overall Multifamily Volume & GSE Market Share



- Including pre-recession CMBS investments, the GSEs were ~70% of the total originations in 2007 and 2008
- Recently the GSE share was in the range of 42%



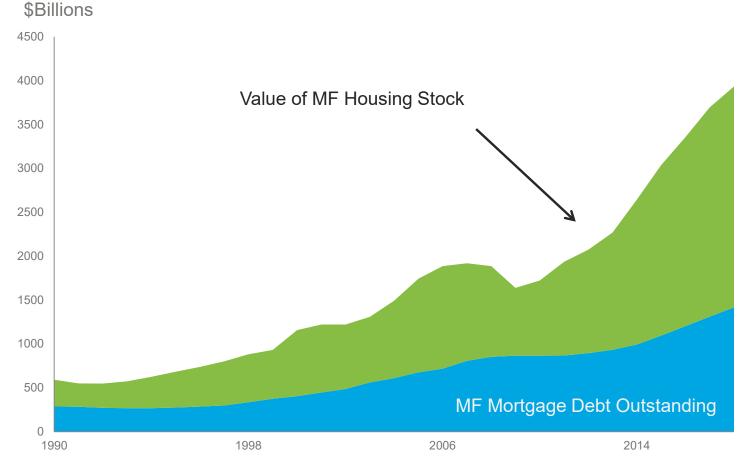


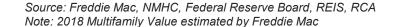
Source: MBA, FHFA Report to Congress, Fannie Mae, Freddie Mac. Note; volume projections from MBA

Rising MF Residential Prices Help Build Equity



Total value of U.S. MF real estate







Jay Lybik
Vice President, Research Services
Institutional Property Advisors







National Employment Rank by Metro 2019 Employment Revision

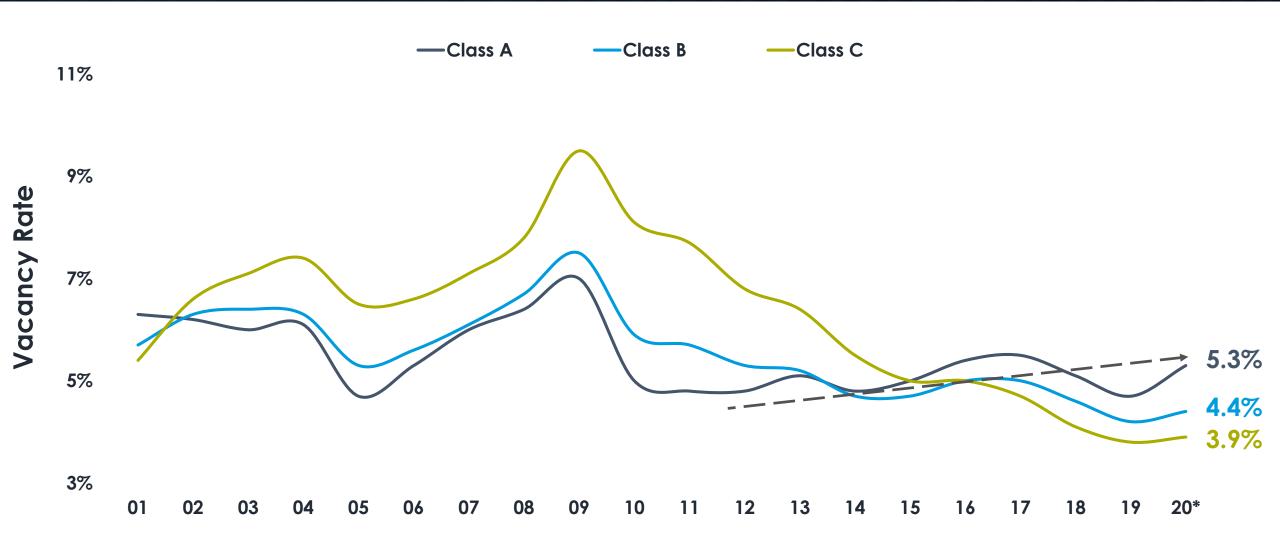
Top 10 Metros	Absolute Revision	New 2019 Emp. Gain	
Nashville	13,700	31,200	
Detroit	10,900	10,400	
Phoenix	9,800	78,000	
Northern New Jersey	8,400	15,500	
Denver	7,900	41,800	
Tampa	6,100	36,400	
Atlanta	5,400	71,100	
San Francisco	4,700	34,500	
Philadelphia	4,300	27,500	
Sacramento	4,100	15,500	

Bottom 10 Metros	Absolute Revision	New 2019 Emp. Gain	
Houston	-27,200	62,800	
Oakland	-18,700	1,100	
San Jose	-17,900	15,300	
Los Angeles	-17,000	49,500	
Cincinnati	-13,800	9,200	
Miami	-13,700	13,000	
Seattle-Tacoma	-13,200	50,900	
San Diego	-12,700	21,800	
Chicago	-12,600	20,900	
Orlando	-10,000	32,700	





U.S. Apartment Vacancy Trends by Class









National Apartment Rank by Metro 2020 Effective Rent Growth*

Top 10 Metros	2020 Average Rent*	Y-O-Y % Change
Phoenix	\$1,286	8.6%
Nashville	\$1,372	7.0%
Las Vegas	\$1,185	6.7%
Austin	\$1,393	6.5%
Orlando	\$1,366	6.4%
St. Louis	\$1,023	6.3%
Salt Lake City	\$1,243	6.0%
Atlanta	\$1,343	5.9%
Boston	\$2,529	5.9%
San Antonio	\$1,067	5.7%
U.S. Total	\$1,468	3.8%

Bottom 10 Metros	2020 Average Rent*	Y-O-Y % Change
New York	\$2,839	2.4%
Northern New Jersey	\$2,002	2.5%
Washington, D.C.	\$1,856	2.9%
Baltimore	\$1,386	3.0%
Los Angeles	\$2,379	3.0%
Oakland	\$2,428	3.1%
Houston	\$1,155	3.2%
Orange County	\$2,218	3.2%
San Francisco	\$2,987	3.2%
San Jose	\$2,963	3.3%
U.S. Total	\$1,468	3.8%







National Apartment Rank by Metro 2020 Class C Effective Rent Growth*

Top 10 Metros	2020 Average Rent*	Y-O-Y % Change		
Phoenix	\$1,032	8.2%		
Orlando	\$1,008	7.6%		
San Jose	\$2,452	7.1%		
Raleigh	\$1,023	7.0%		
Atlanta	\$1,008	6.7%		
Austin	\$1,164	6.7%		
Boston	\$1,723	6.5%		
San Diego	\$1,637	6.1%		
Tampa	\$1,023	6.1%		
San Antonio	\$856	5.9%		
U.S. Total	\$1,155	4.3%		

Bottom 10 Metros	2020 Average Rent*	Y-O-Y % Change
New York	\$2,071	1.8%
Northern New Jersey	\$1,405	2.0%
Washington, D.C.	\$1,472	3.0%
Fort Lauderdale	\$1,285	3.7%
Houston	\$928	3.8%
Columbus	\$797	4.1%
Dallas-Fort Worth	\$985	4.1%
Los Angeles	\$1,764	4.2%
Orange County	\$1,826	4.4%
Inland Empire	\$1,153	4.5%
U.S. Total	\$1,155	4.3%







Midwest vs. the World

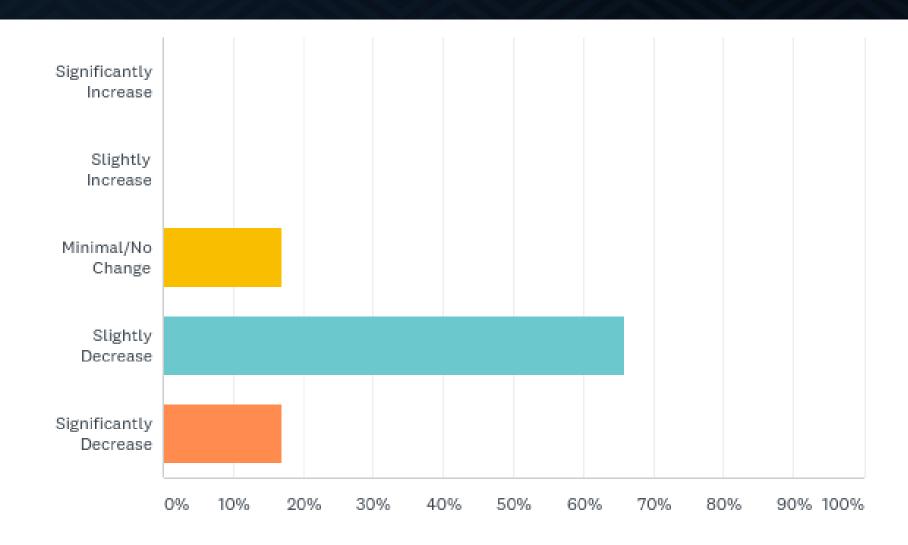
	Vacancy Rate		Rent C	Rent Growth		New Supply as % of Inventory	
	2019	2020*	2019	2020*	2019	2020*	
Chicago	4.9%	4.8%	2.7%	5.1%	1.2%	1.0%	
Cincinnati	3.3%	3.6%	5.8%	5.1%	0.5%	1.1%	
Cleveland	3.8%	3.9%	6.3%	5.5%	0.4%	0.7%	
Columbus	4.3%	4.2%	3.7%	4.0%	1.5%	1.7%	
Detroit	3.3%	3.2%	3.5%	5.1%	0.4%	0.6%	
Indianapolis	5.3%	5.1%	4.4%	5.0%	1.3%	1.2%	
Minneapolis	3.4%	3.8%	4.8%	4.9%	1.6%	2.2%	
National	4.2%	4.4%	4.2%	3.8%	1.4%	1.7%	
Sexy Six	2.9%	3.1%	3.5%	2.9%	1.1%	1.4%	
Atlanta	5.1%	4.9%	5.2%	5.9%	1.4%	1.9%	
Dallas-Fort Worth	5.1%	5.0%	4.4%	3.6%	2.9%	2.6%	
Denver	5.1%	5.0%	3.0%	4.5%	2.8%	2.9%	
Orlando	4.1%	4.2%	3.9%	6.4%	2.9%	3.0%	
Phoenix	4.0%	4.4%	10.0%	8.6%	2.0%	2.5%	

^{*} Forecast





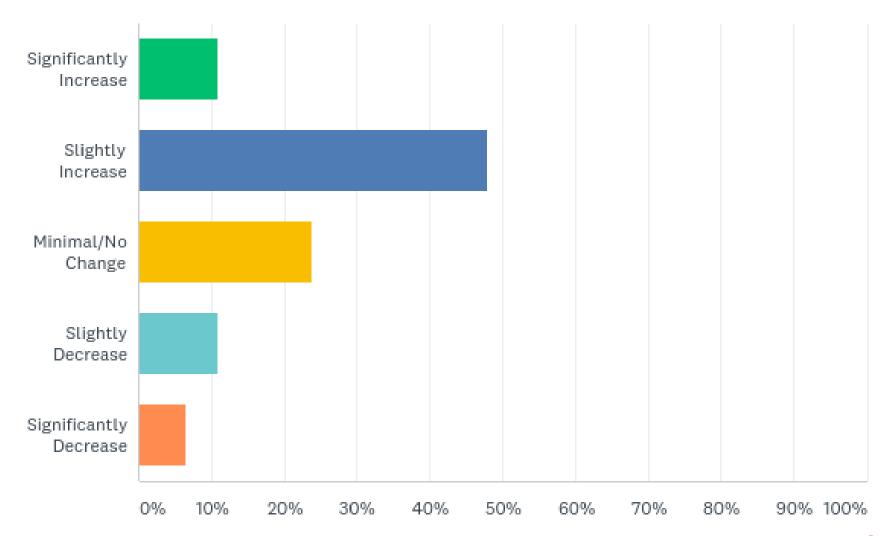
IPA Survey – Rents Over Next 6 Months







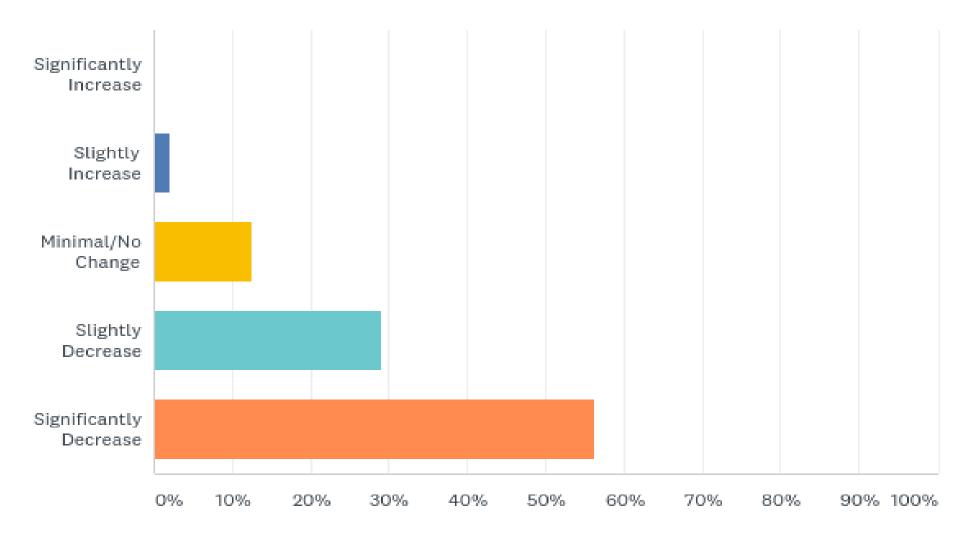
IPA Survey – Vacancy Over Next 6 Months







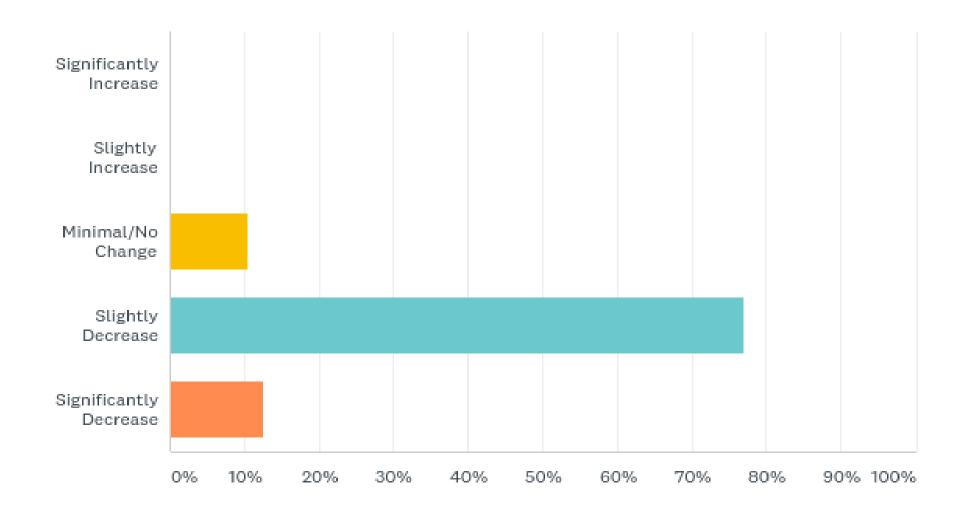
IPA Survey - Permits Over Next 6 Months







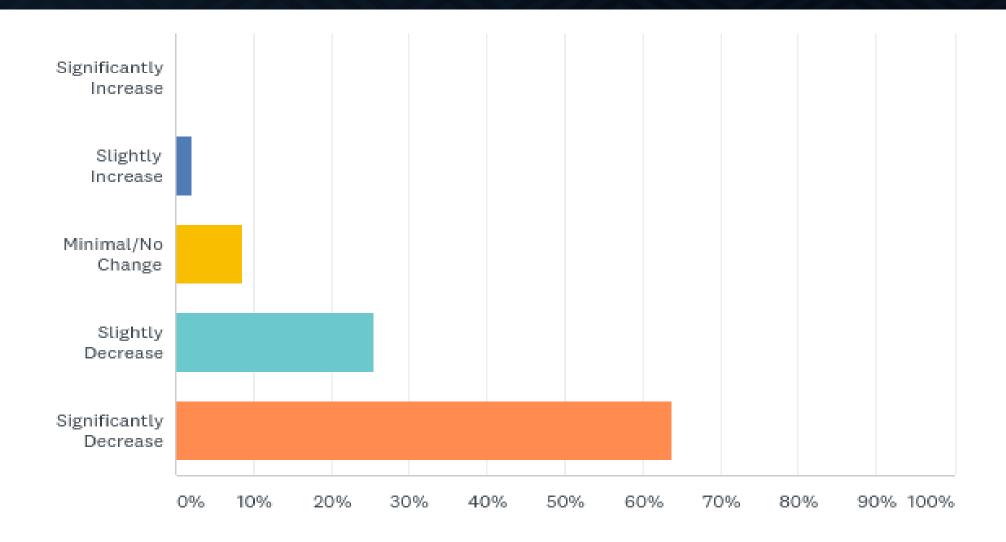
IPA Survey – Valuations Over Next 6 Months







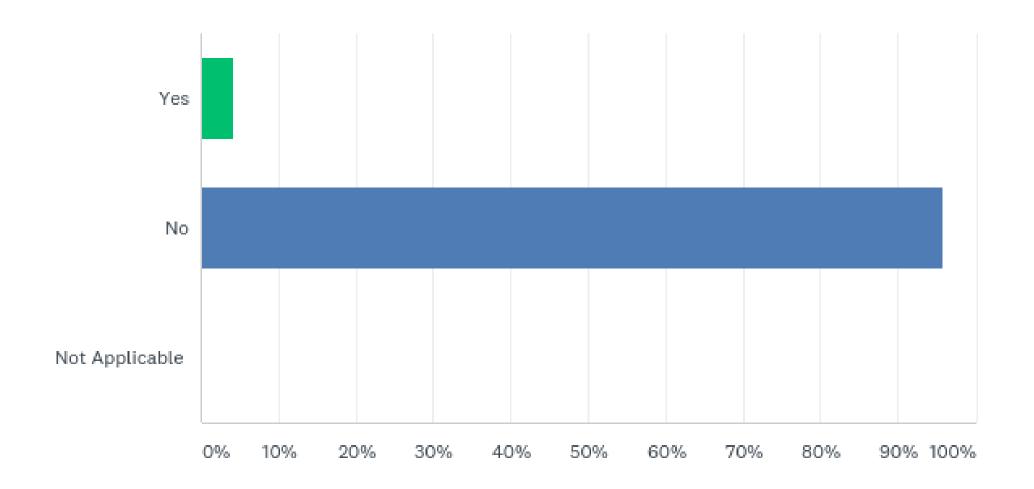
IPA Survey – Transactions Over Next 6 Months







IPA Survey – Decrease Long Term Demand for Apartment Investment?







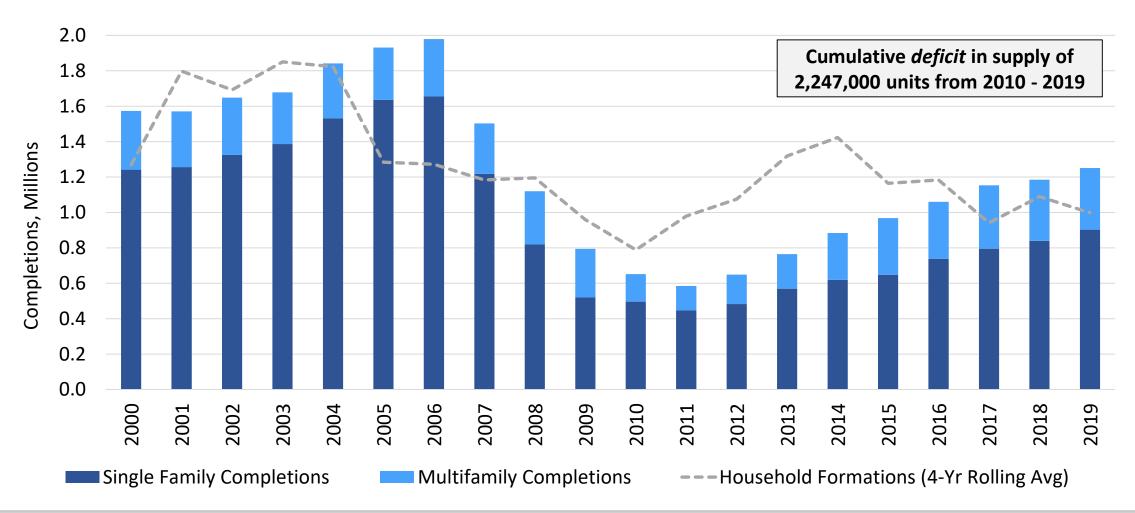
Jeff Adler Vice President Yardi



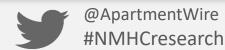




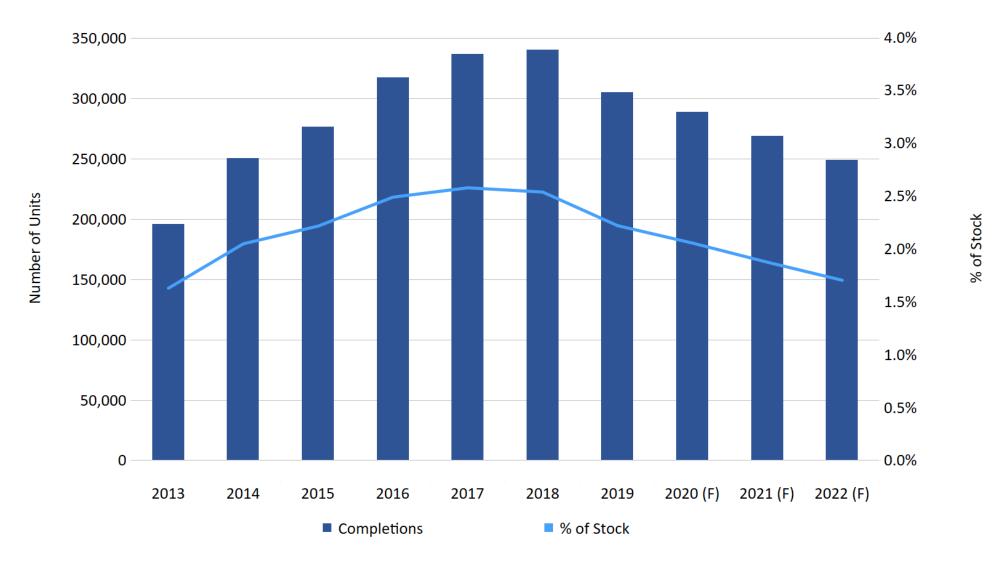
MULTIFAMILY CONSTRUCTION CATCHING UP TO NEW HOUSEHOLD FORMATION







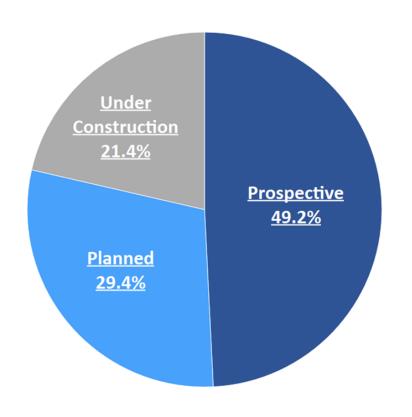
OUR CURRENT FORECAST SHOWS NEW SUPPLY FALLING







BASED UPON WHAT WE SEE, NEW SUPPLY WILL NOT BREAK OUT ABOVE 300K A YEAR

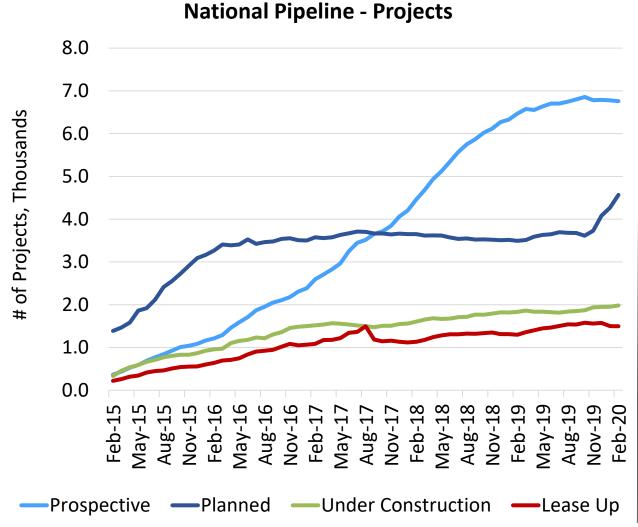


Property Status	Units	% of Total
Prospective	1,689,269	49.2%
riospective	1,005,205	43.270
Planned	1,007,702	29.4%
Under Construction	734,197	21.4%
TOTAL:	3,431,168	100.0%

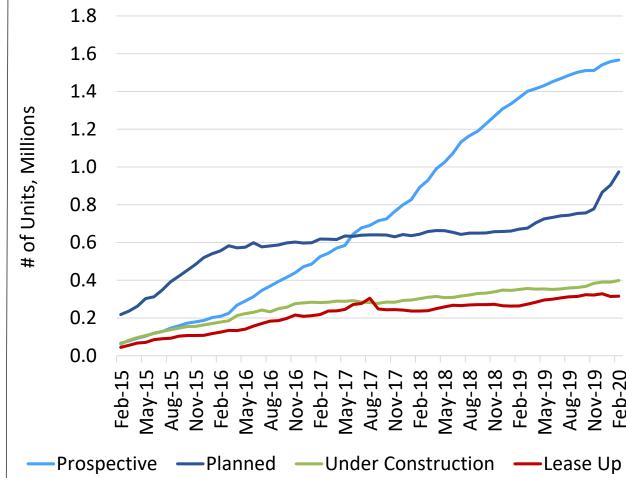




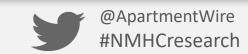
MULTIFAMILY PIPELINE IS AT IT'S LARGEST SIZE





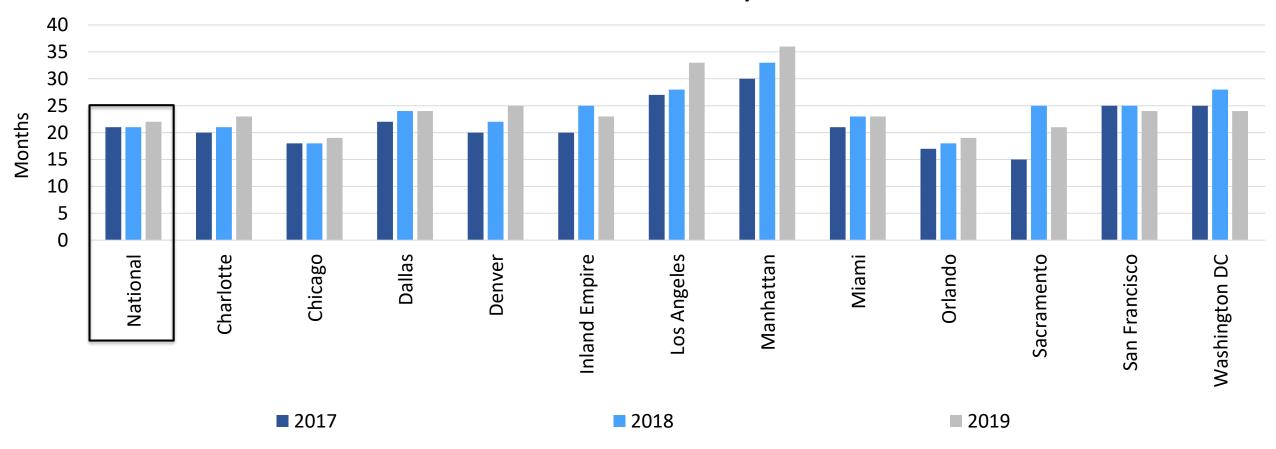




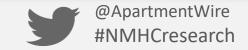


MOST MARKETS EXPERIENCED AN INCREASE IN CONSTRUCTION CYCLE TIMES FROM 2017 TO 2019

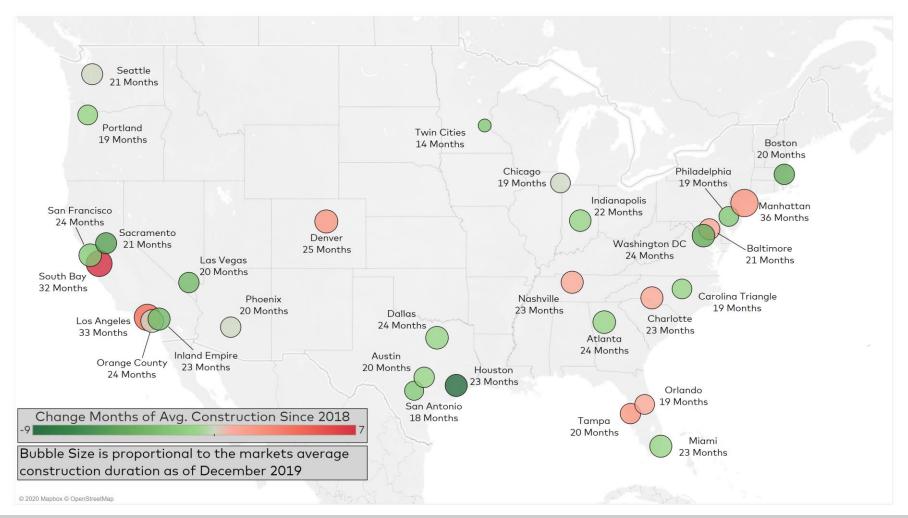
Market Construction Duration by Year Built



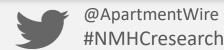




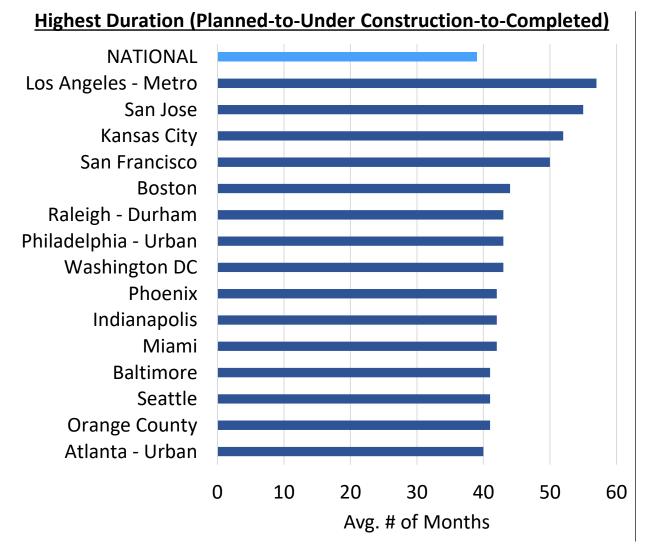
GROUND BREAK TO COMPLETION TIMELINES IMPROVING, AFTER SEVERAL YEARS OF INCREASING DURATION

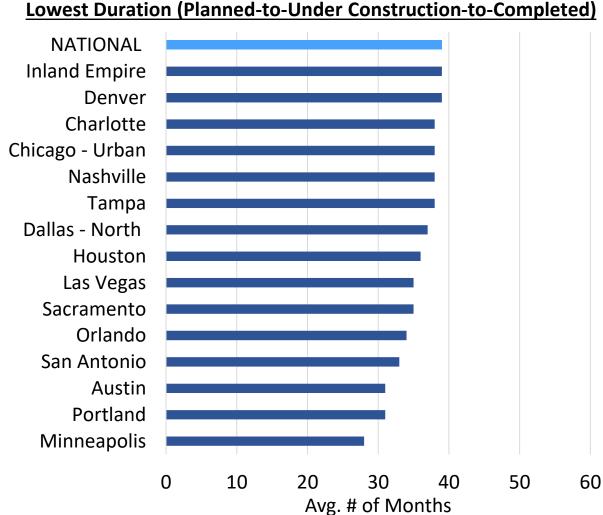




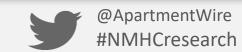


GATEWAY MARKETS HAVE THE LONGEST TOTAL CYCLE TIME





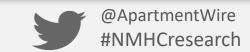




DALLAS, DENVER AND SEATTLE ABSORBED A LARGE AMOUNT OF DELIVERIES, DESPITE HEAVY SUPPLY PIPELINES

Market	Units Delivered 2019	Units Absorbed 2019	Difference	Units Absorbed as a % of Existing Stock
Dallas - North	14,717	14,621	(96)	4.1%
Denver	12,464	11,308	(1,156)	4.1%
Seattle	11,012	10,630	(382)	4.2%
Atlanta - Urban	9,044	7,482	(1,562)	3.2%
Phoenix	8,874	7,380	(1,494)	2.4%
Charlotte	8,264	7,604	(660)	4.3%
Austin	8,252	8,295	43	3.5%
Miami	7,714	7,536	(178)	5.8%
Washington DC	7,680	7,109	(571)	2.3%
Houston - West	7,525	7,602	77	1.7%
Orlando	7,163	5,723	(1,440)	2.6%
Chicago - Urban	6,691	6,353	(338)	3.6%
Metro Los Angeles	6,319	5,477	(842)	3.0%
Boston	6,001	6,064	63	2.7%
Fort Worth	5,870	4,175	(1,695)	2.0%

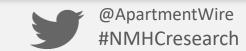




TECH HUBS ARE DELIVERING SUPPLY IN EXCESS OF THEIR 10-YEAR AVG

Top 15 Markets With the Most 2019 Deliveries	Units Delivered 2019	Ratio of 2019 Deliveries to the 10-yr Average	Avg. Annual Deliveries 2020-2024 (F)
Dallas - North	14,717	1.68x	12,067
Denver	12,464	1.77x	10,214
Seattle	11,012	1.46x	10,555
Atlanta - Urban	9,044	1.82x	5,751
Phoenix	8,874	1.73x	7,381
Charlotte	8,264	1.76x	7,497
Austin	8,252	1.07x	8,532
Miami	7,714	2.29x	5,467
Washington DC	7,680	1.23x	7,797
Houston - West	7,525	0.75x	6,469
Orlando	7,163	1.63x	5,579
Chicago - Urban	6,691	1.68x	5,429
Metro Los Angeles	6,319	1.61x	3,541
Boston	6,001	1.38x	6,289
Fort Worth	5,870	2.10x	2,814

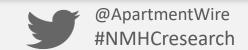




SUPPLY FORECAST METHODOLOGY

- Simulates the movement of the entire national residential pipeline at the property level over time, beginning with each project's current status and ending with its eventual completion or abandonment
- Utilizes internal Yardi Matrix data to determine a national number of expected status changes
 each month—e.g. from Prospective to Planned, Planned to Under Construction, Under
 Construction to Lease Up—and then determines the best candidates for movement based on the
 number of days each project has been in its present status
- Simulates future projects at the submarket level by evaluating historical project discovery patterns
- When aggregated to the submarket, market, or national level, the simulation's projected completions constitute a forecast of what we expect will deliver over any time period





MULTIFAMILY FORECAST SUMMARY

Units Delivered	Units Delivered
2020	288,871
2021	268,873
2022	249,003
2023	232,219
2024	221,859

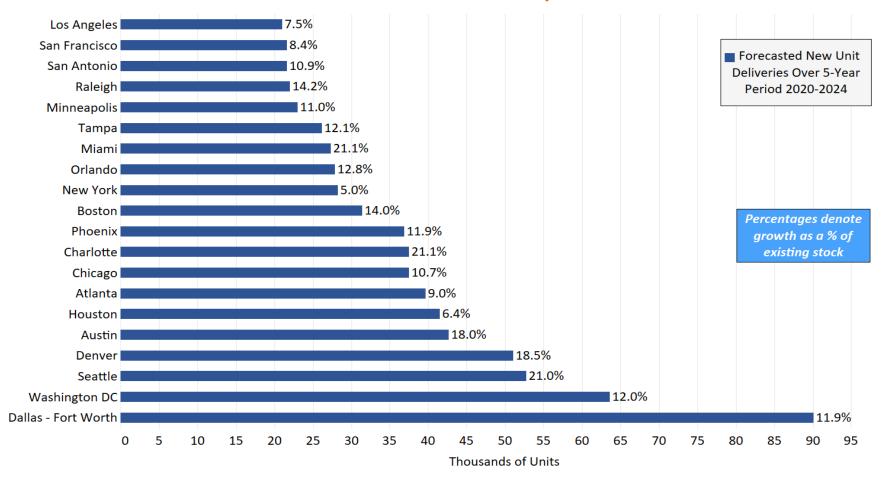
Our Forecast Findings

- 1.26 million units to be delivered from 2020-2024
- Annual declines in national deliveries
- Most markets showing a decline in deliveries compared to the past 5 years

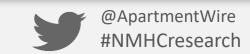




OUR NEW COMPLETION FORECAST SHOWS AN INFLUX OF NEW SUPPLY COMING IN DALLAS, D.C. AND SEATTLE





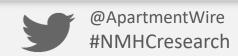


DALLAS, D.C., DENVER, LOS ANGELES AND MIAMI WILL HAVE THE MOST UNITS DELIVERED IN 2020

Market	2020	2021	2022	2023	2024	Total
Dallas-Ft Worth	20,935	18,898	17,548	16,681	16,016	90,078
Washington DC	14,436	13,145	12,614	12,003	11,392	63,590
Denver	11,497	10,695	10,160	9,625	9,091	51,068
Los Angeles	11,495	9,864	7,457	5,825	5,637	40,278
Miami	11,491	10,759	9,271	8,782	8,295	48,598
Seattle	10,981	11,215	10,704	10,193	9,682	52,775
Austin	9,604	8,934	8,487	8,041	7,594	42,660
Houston	9,098	8,603	8,273	7,943	7,613	41,530
Atlanta	8,934	8,310	7,895	7,479	7,064	39,682
Chicago	8,443	7,853	7,461	7,069	6,675	37,501

Market	2020	2021	2022	2023	2024	Total
New York City	8,140	6,084	5,076	4,567	4,408	28,275
Charlotte	7,538	8,012	7,662	7,311	6,960	37,483
Phoenix	7,408	7,892	7,547	7,202	6,858	36,907
Boston	6,828	6,552	6,134	6,032	5,899	31,445
Orlando	6,280	5,842	5,550	5,258	4,966	27,896
SF & East Bay	5,951	5,609	4,657	2,705	2,705	21,627
Twin Cities	5,193	4,831	4,589	4,348	4,106	23,067
Raleigh - Durham	4,966	4,619	4,388	4,157	3,926	22,056
Tampa	4,600	5,011	5,031	5,500	6,009	26,151
Philadelphia	4,347	4,043	3,841	3,639	3,436	19,306



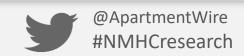


SEATTLE, DENVER, CHARLOTTE, AUSTIN AND MIAMI WILL HAVE THE MOST UNITS DELIVERED AS A % OF STOCK IN

Market	2020	2021	2022	2023	2024
Seattle	4.4%	4.1%	3.5%	2.9%	2.4%
Denver	4.2%	3.6%	3.0%	2.5%	2.1%
Charlotte	4.2%	4.1%	3.5%	2.9%	2.4%
Austin	4.0%	3.5%	3.0%	2.5%	2.1%
Miami	3.9%	3.4%	2.6%	2.2%	1.9%
Raleigh - Durham	3.2%	2.8%	2.4%	2.1%	1.8%
Boston	3.0%	2.7%	2.4%	2.1%	1.9%
Orlando	2.9%	2.5%	2.2%	1.9%	1.6%
Dallas-Ft Worth	2.8%	2.3%	2.0%	1.7%	1.5%
Washington DC	2.7%	2.4%	2.1%	1.8%	1.6%

Market	2020	2021	2022	2023	2024
Twin Cities	2.5%	2.2%	1.9%	1.7%	1.5%
Chicago	2.4%	2.1%	1.9%	1.6%	1.4%
Phoenix	2.4%	2.4%	2.2%	1.9%	1.6%
SF & East Bay	2.3%	2.1%	1.6%	0.9%	0.8%
Tampa	2.1%	2.2%	2.1%	2.1%	2.1%
Atlanta	2.0%	1.8%	1.6%	1.4%	1.2%
Los Angeles	1.8%	1.5%	1.1%	0.8%	0.7%
Philadelphia	1.5%	1.3%	1.2%	1.1%	1.0%
New York City	1.4%	1.0%	0.8%	0.7%	0.7%
Houston	1.4%	1.3%	1.2%	1.1%	1.0%





MARKETS WITH THE MOST FORECASTED DELIVERIES IN 2020: WHERE IS THE NEW SUPPLY CONCENTRATED?

CASE STUDY:

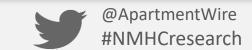
Denver



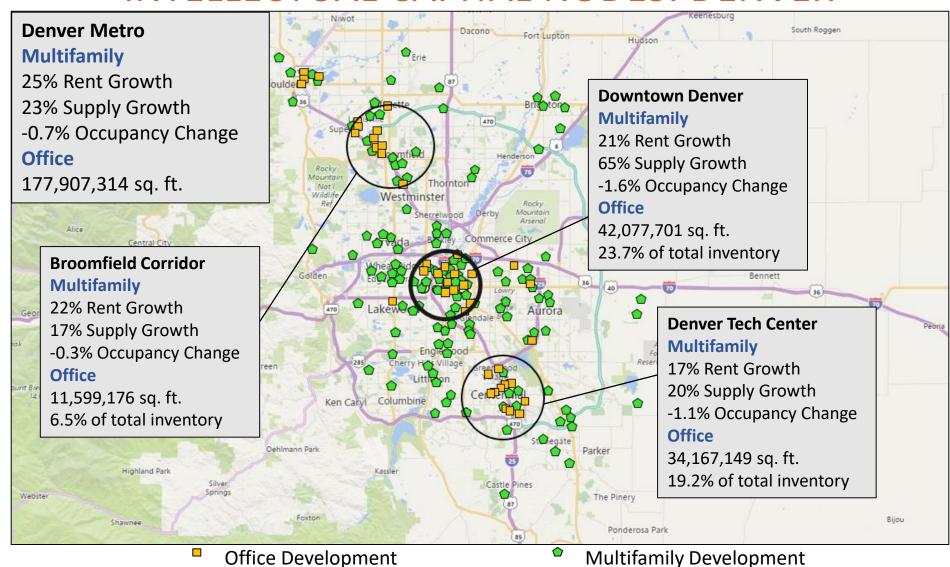








INTELLECTUAL CAPITAL NODES: DENVER



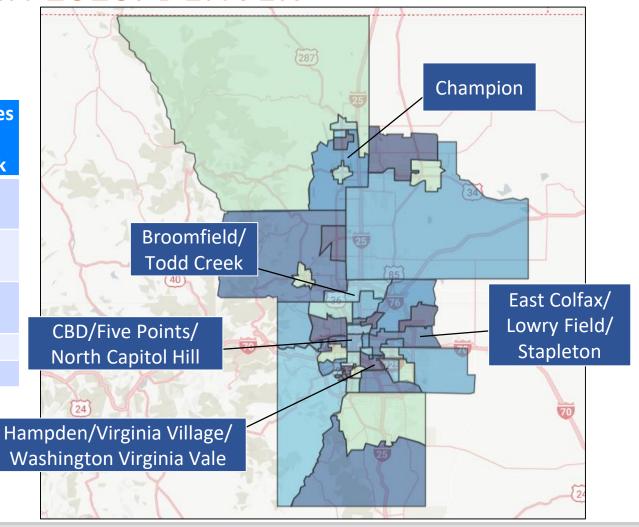


Source: Yardi Matrix



SUBMARKETS WITH THE MOST DELIVERIES FORECASTED IN 2020: DENVER

Submarket	2020 Forecast Deliveries	2019 Inventory	2020 Deliveries as a % of Existing Stock
CBD/Five Points/ North Capitol Hill	1,621	31,824	5.1%
Hampden/Virginia Village/ Washington Virginia Vale	942	23,214	4.1%
East Colfax/ Lowry Field/Stapleton	880	11,158	7.9%
Champion	844	3,863	21.8%
Broomfield/Todd Creek	711	8,128	8.7%



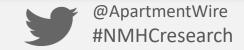




SUMMARY

- National supply growth is expected to drop steadily through 2024
- Most markets have been seeing increasing cycle times for new construction, most notably in gateway markets
- Markets with a lot of deliveries in 2019 (Dallas, Denver, Seattle, Atlanta and Phoenix) had no problem absorbing the influx of new supply
- Our new supply forecast shows Dallas, Washington DC and Seattle topping the list for the most deliveries expected between 2020 and 2024, however new supply will be spread over multiple submarkets

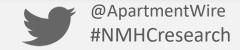




AGENDA

- Welcome and Overview
- Moderated Discussion COVID-19 and Market Impacts
- Market Trends and Outlook
 - Steven Guggenmos, Vice President, Research & Modeling, Investments & Advisory, Freddie Mac
 - Jay Lybik, Vice President, Research Services, IPA
 - Jeff Adler, Vice President, Yardi
- Panel Discussion and Questions
- Closing Remarks





PANEL DISCUSSION AND QUESTIONS







Jeff Adler

Steven Guggenmos

Jay Lybik



NMHC RESEARCH FORUM WEBINAR SERIES

The Role of "Filtering" in Housing Affordability April 16 | 2:00 – 3:00 PM EDT

New Apartment Construction: The Impact on Existing Apartments Webinar
May 12 | 2:00 – 3:00 PM EDT

The Sea Change of Data Science and Apartment Research



Dr. Dowell MyersSol Price School of Public Policy
University of Southern California



Evan Mast Economist Upjohn Institute



James Chung Reach Advisors



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