



2018 U.S. Multi-Family Market Update



Jeff Adler
Vice President, Matrix



Jack Kern
Director, Research and Publications

Today's Agenda

- Economic Drivers Affecting Multifamily
- Analysis of the Overflow Out of Gateway Cities into Secondary Cities and Impacts on Multifamily
- Highlights of Growing Secondary Tech Markets



The Yardi Matrix House View- A Sharpshooter's Game

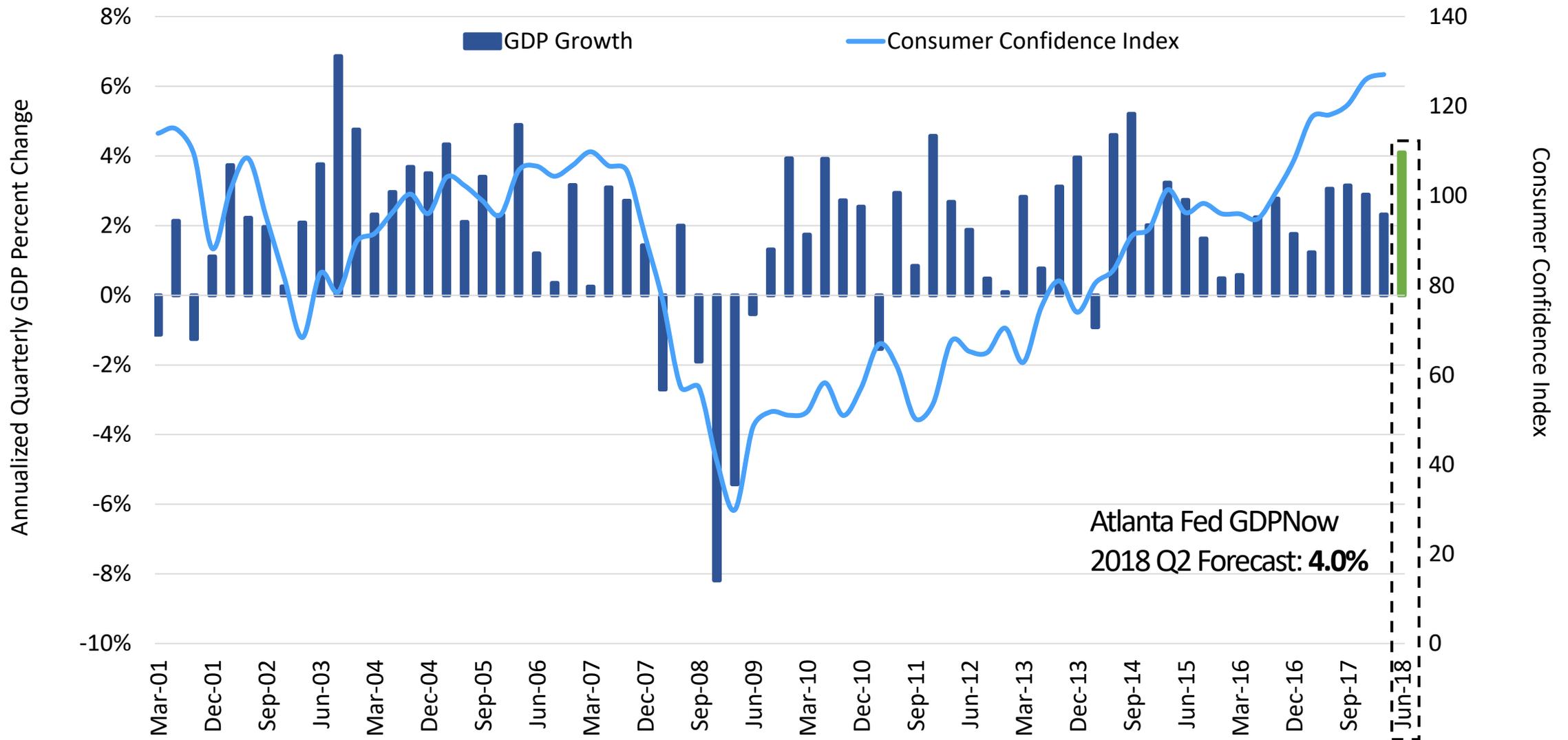
- Our Timeframe in this webinar is 2-5 years; we'll pick up future trends in technology in the fall
- **U.S. economy is in VERY good shape**
 - GDP, Employment is Up and growth is accelerating
 - Oil Prices Up => \$70/bbl – will stay high (\$80/bbl?) for what looks like 18-24 months – Iran/Venezuela/Saudi/Russia impacts
 - As a meaningful producer, not a clear negative anymore, positive for the Oil Patch
 - Wages rising ~2.6% and labor market tight – people being pulled off the sidelines
 - Inflation rising, but unlikely to break 2.5%; Short-Term interest rates up, 10 Yr range with 3% to 3.5%; Watch Yield Curve!
- **Multi-family market faces increasing Cross-Winds:**
 - Demand (Jobs/Population) is strong, but shifting to lower cost cities; and homeownership rate is/will gradually rise
 - Financing costs up – find situations where change in NOI outruns impact of increasing rates
 - Multi-family Capital is **abundant** – debt and equity – acquisition and development – cap rates steady, spreads compressing
 - New Supply deliveries are weighing down on several markets, and the level of new supply is flattening but not declining as much as previously thought
 - New supply is the **Key** variable in the next 2-5 years; with or without a mild recession

The Yardi Matrix House View- A Sharpshooter's Game

- **Tech Hubs are Emerging both in Formerly Non-tech Metros and Traditionally Overlooked Cities:**
 - Cost advantages and Emerging Intellectual Hubs are shifting the geography of jobs
 - The longer the expansion goes on the more established the intellectual critical mass becomes
 - Tax reform will likely accelerate these trends
 - But the process does take time, allowing multiple entry points for investors
 - Many of these cities have had modest levels of new supply and institutional investor interest
 - However, property values in secondary/tertiary cities ***are more volatile during downturns***, something to keep in mind...
 - Various cities are in the early stages of the process, noted by Amazon as dark horse options for HQ2
 - Columbus, Pittsburgh, Indianapolis, Philadelphia among several we'll discuss
 - Handful of markets at risk of oversupply over the next two years – becomes slightly less concerning when looking at 5-year horizon – **Denver, Seattle, Charlotte, Dallas, Phoenix and Miami** are in for a rough ride for the next 2 years
 - It's a SHARPSHOOTER'S game for the next few years.....

Economic Drivers Affecting Multifamily

U.S. Economic Growth is Pretty Good

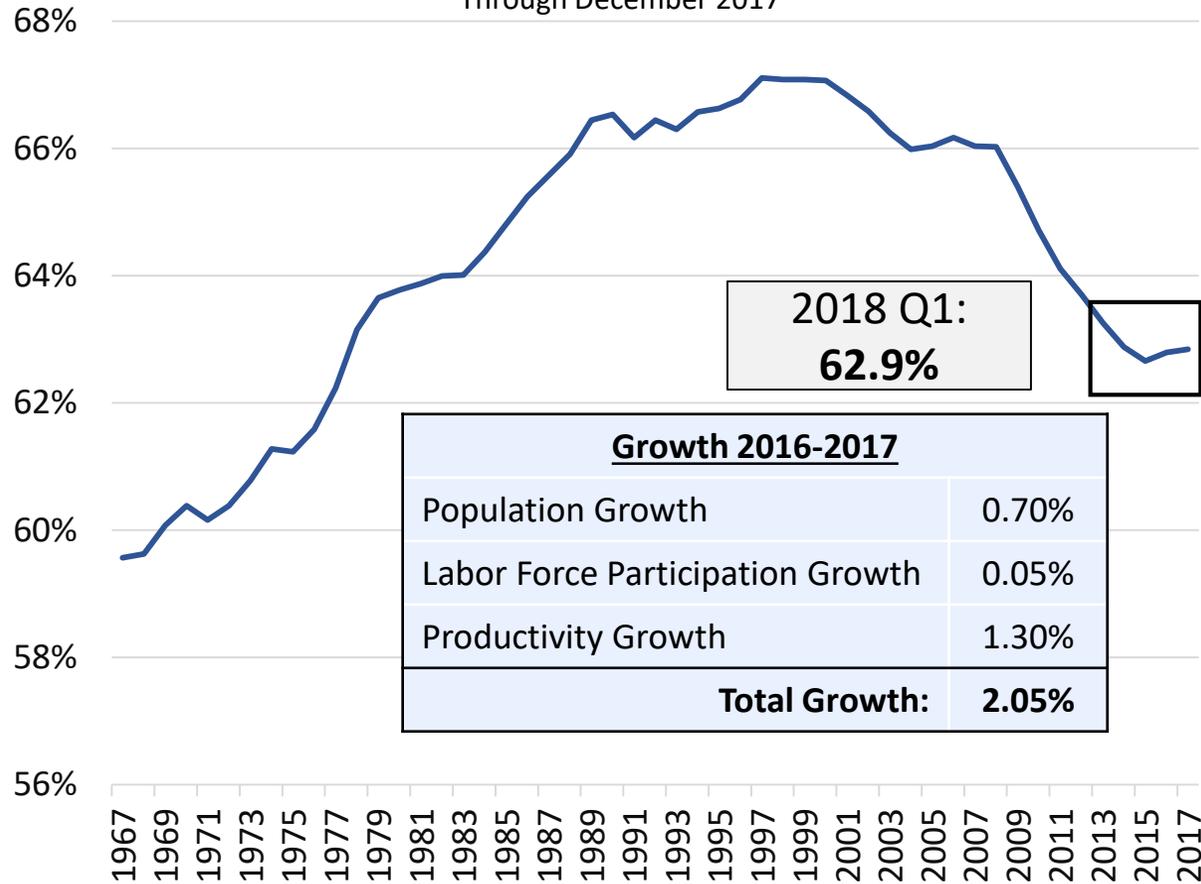


Factors Driving GDP Show Signs of Growth

Where will U.S. GDP growth come from?

Labor Force Participation Rate

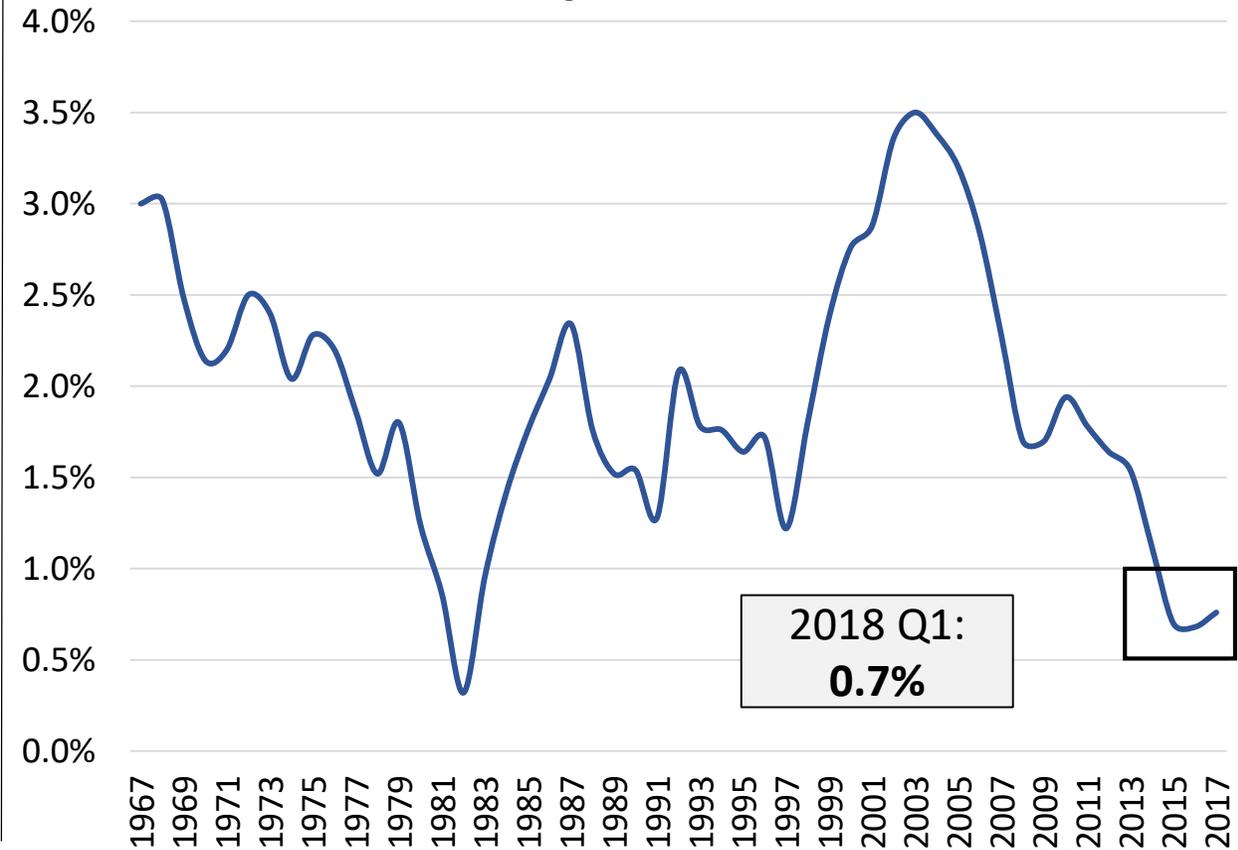
Through December 2017



Labor Productivity Annual Change

Nonfarm Business Sector

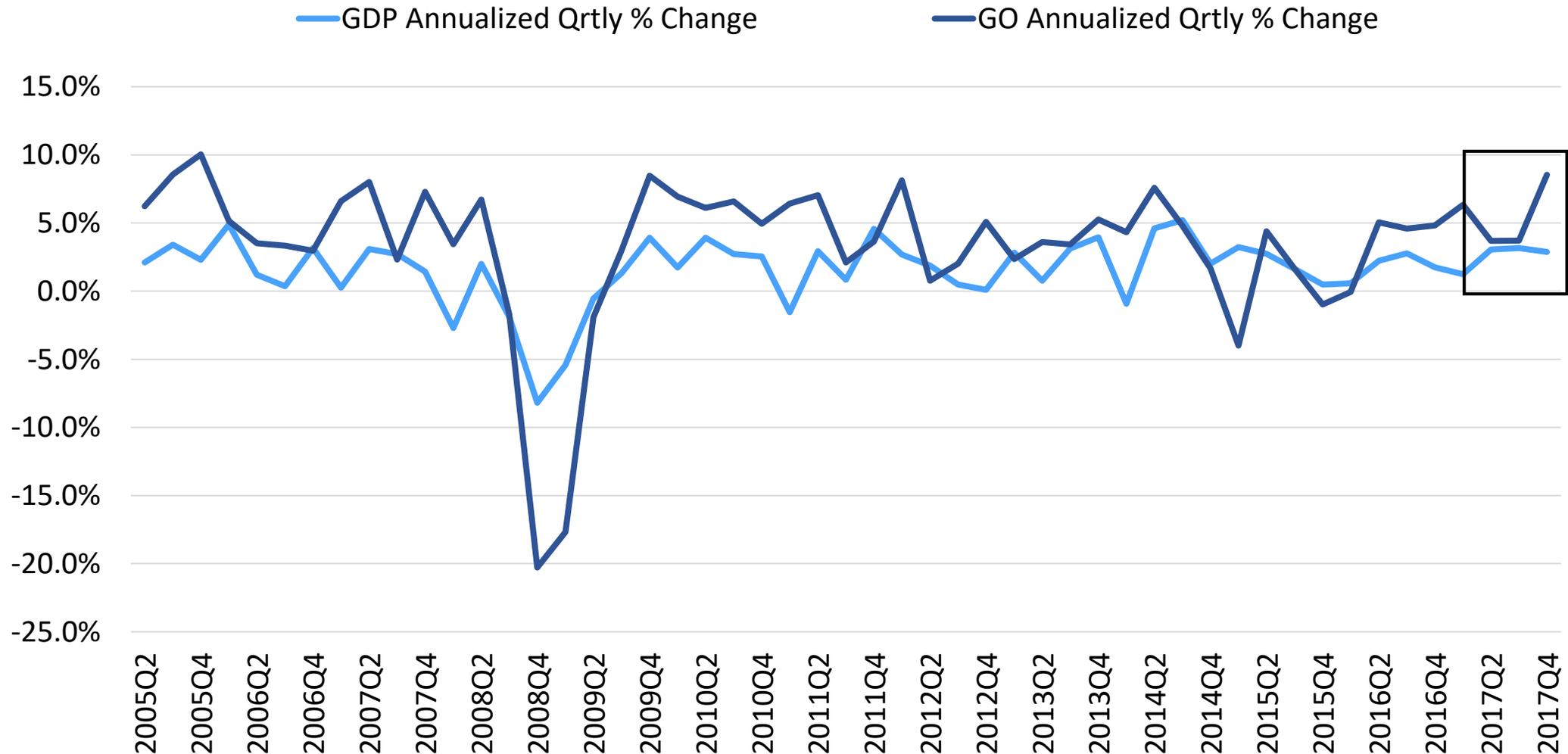
Through December 2017



*Labor productivity graph is based on a 6-year rolling average

Source: Moody's Analytics; Bureau of Labor Statistics (BLS)

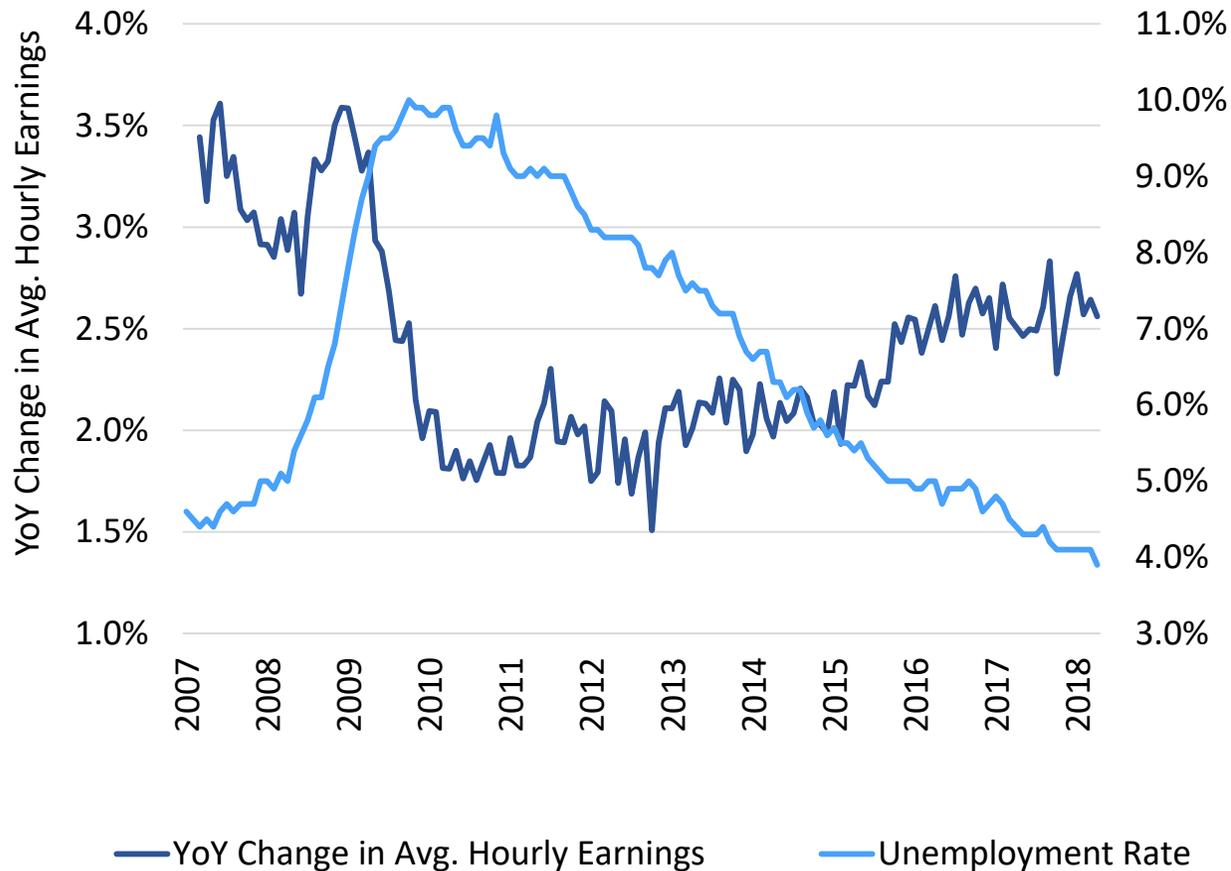
Gross Output, a Business Supply Chain Indicator, is Ticking Up



Source: Federal Reserve Bank of St. Louis; U.S. Bureau of Economic Analysis (BEA); Moody's Analytics;

Will Productivity Out-Distance Real Wage Growth?

U.S. Wage Pressure Increasing



Wage Growth Reports Hide Demographic Shift

The Good News on Wage Growth

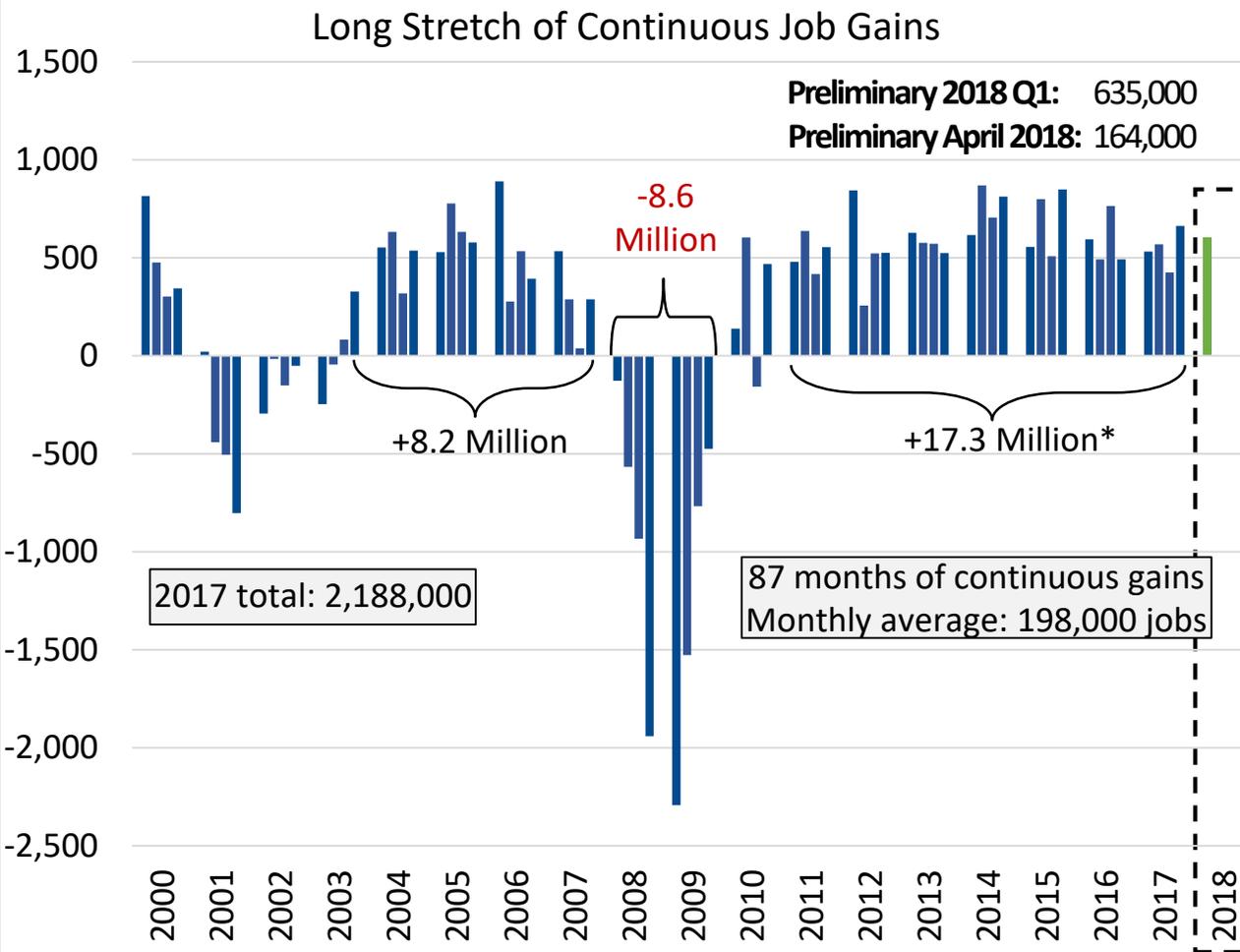
The San Francisco Fed Aug 14, 2017

The overall exchange of new workers for new retirees is holding earnings down by a little under 2 percentage points. Median weekly earnings actually rose in 2Q to +4.2% y/y, according to the U.S. Department of Labor. That's the fastest pace since 2007. Adjust for baby boomers and that would rise to +5.2%.



Tight Labor Market, Pulling People off the Sidelines

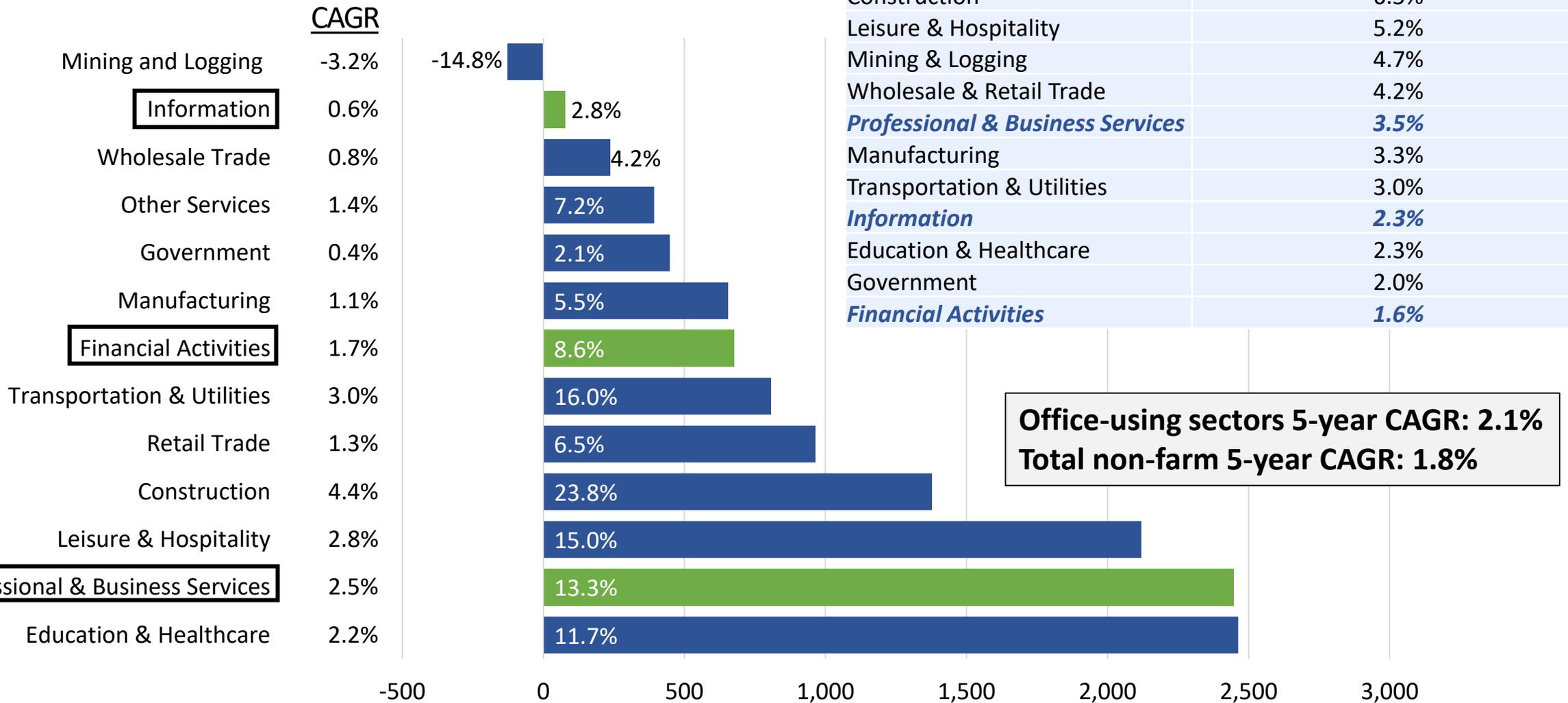
It is difficult to find labor at the right *price*, with the right *skills*, in the right *city*



*Through December 2017

Source: Moody's Analytics; Bureau of Labor Statistics (BLS); The Conference Board

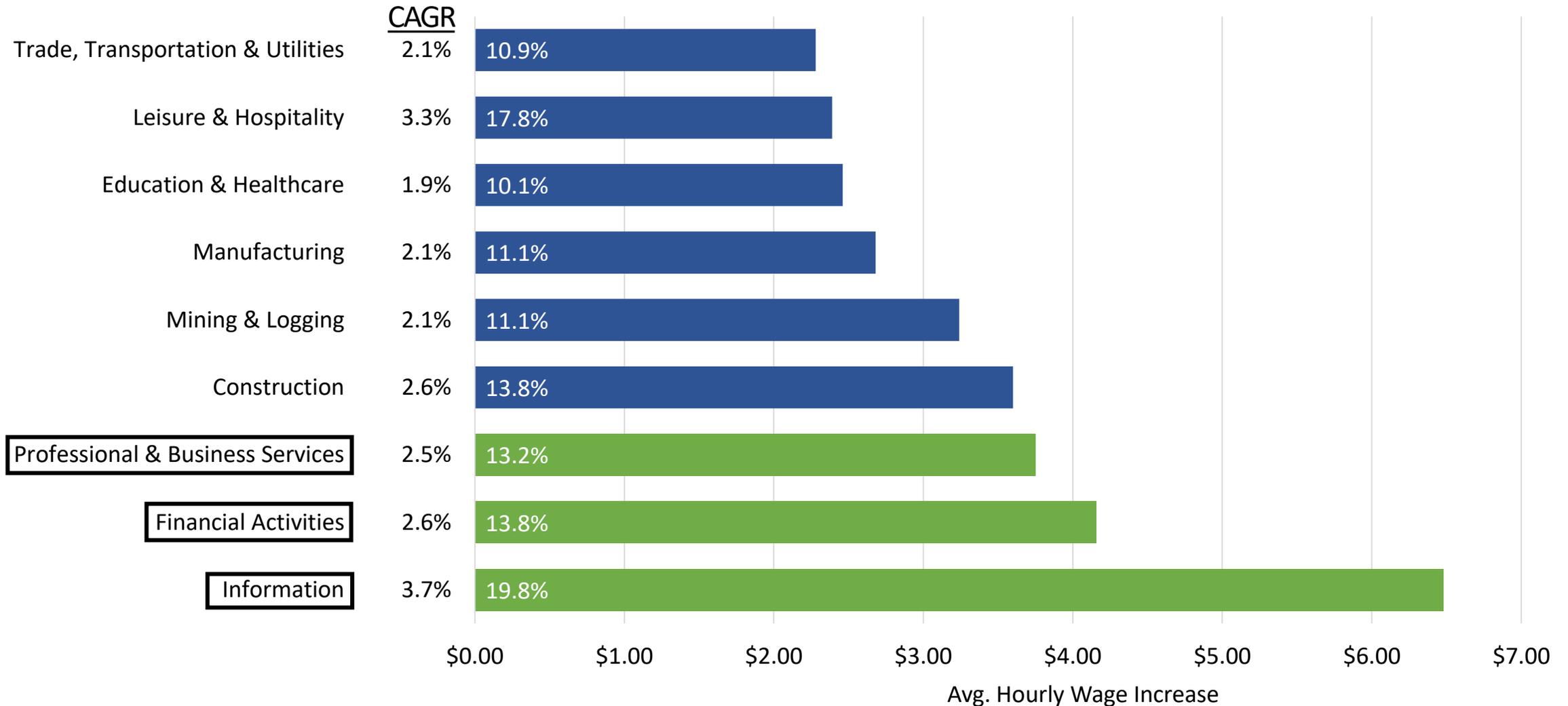
Office-Using Sectors Outpaced Overall Job Growth Over the Last Five Years



Sector	April 2018 Unemployment Rate
Construction	6.5%
Leisure & Hospitality	5.2%
Mining & Logging	4.7%
Wholesale & Retail Trade	4.2%
Professional & Business Services	3.5%
Manufacturing	3.3%
Transportation & Utilities	3.0%
Information	2.3%
Education & Healthcare	2.3%
Government	2.0%
Financial Activities	1.6%

*April 2013-April 2018, Boxed labels are office-using sectors
Source: Moody's Analytics; Bureau of Labor Statistics (BLS)

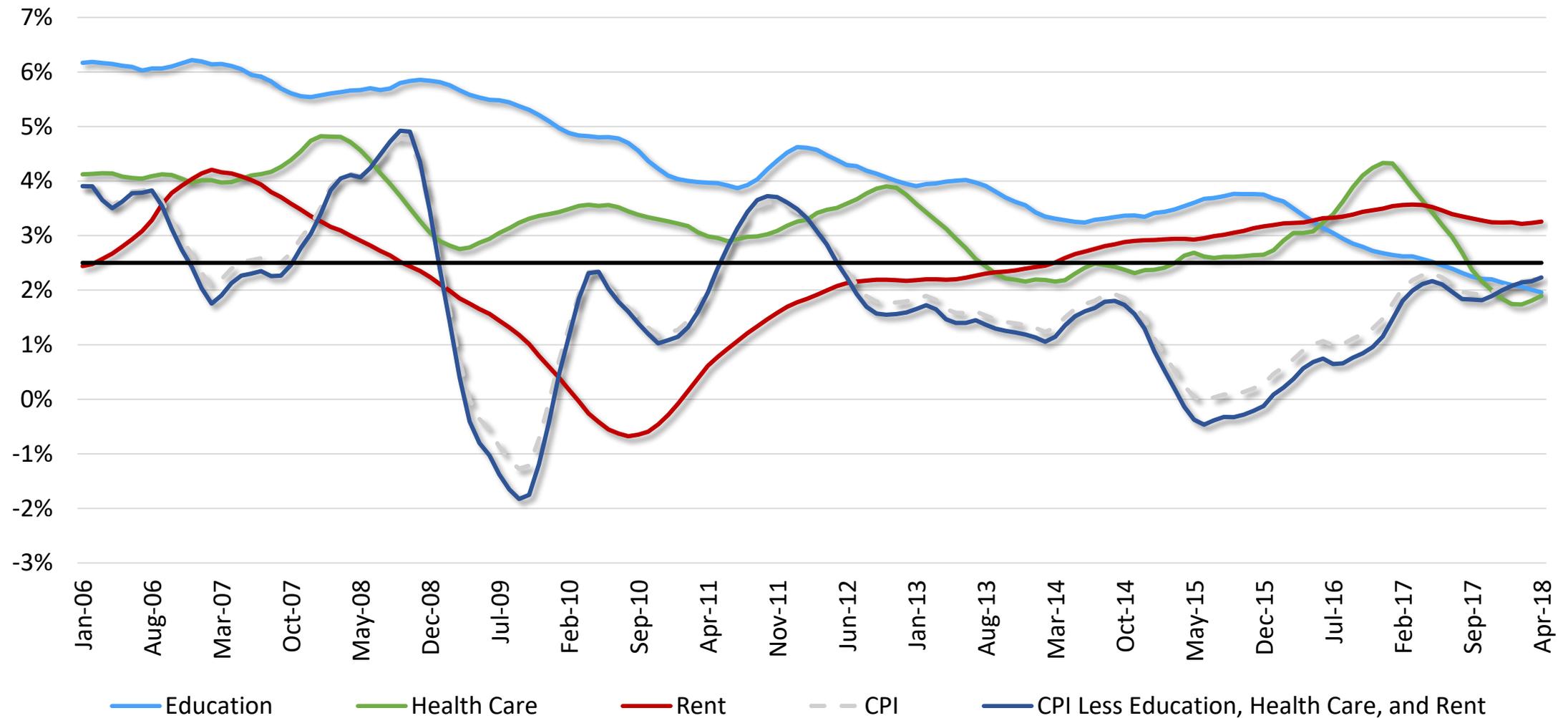
Office-Using Sectors Exhibit the Most Wage Growth April 2013-April 2018



*Boxed labels are office-using sectors

Source: Moody's Analytics; Bureau of Labor Statistics (BLS)

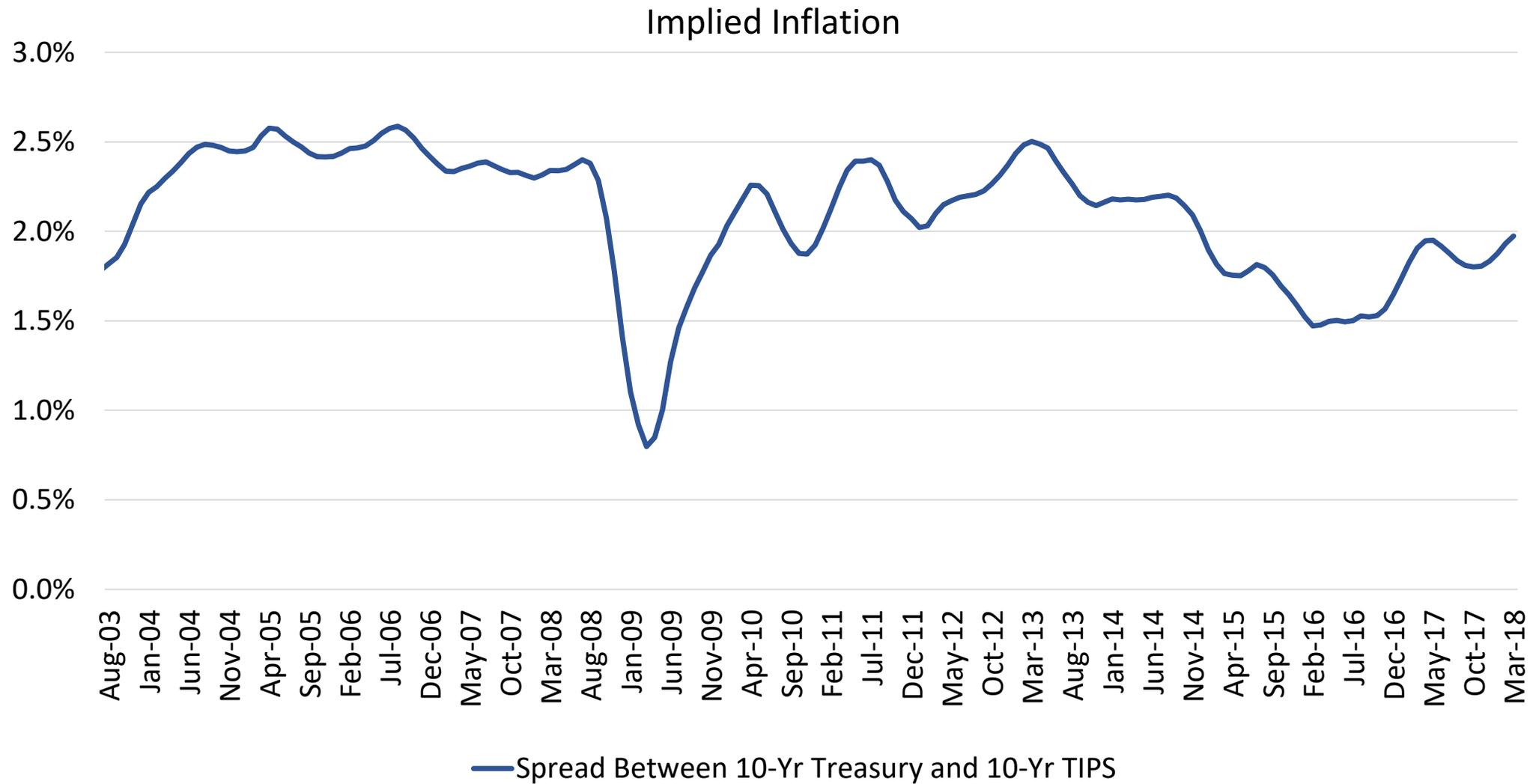
Inflation Rising, But Unlikely to Break Out >2.5%



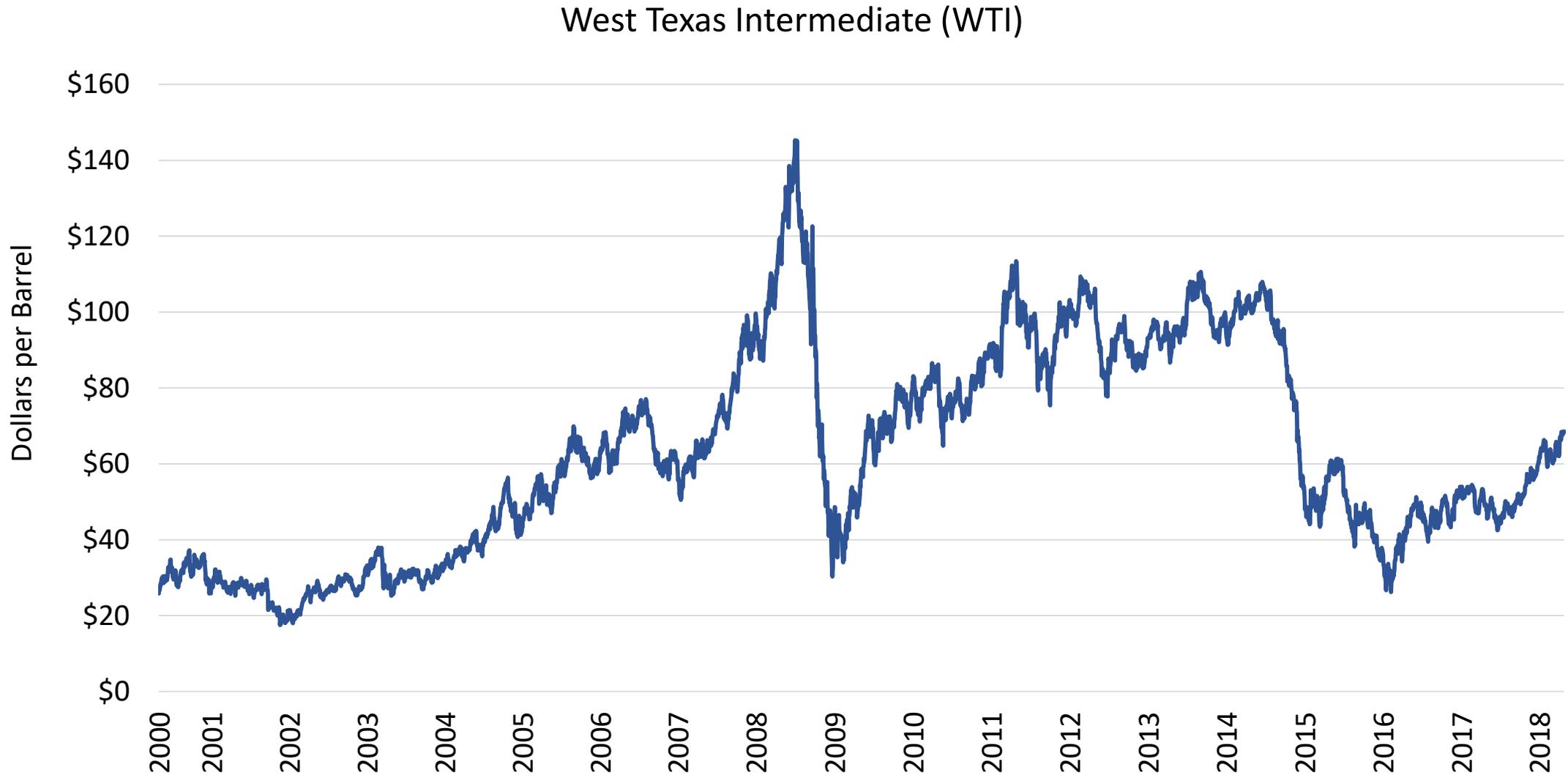
*YOY 6 month moving avgs. CPI Less Health Care, Education and Rent is an estimate using BLS document "Math calculations to better utilize CPI data"

Source: Moody's Analytics; Bureau of Labor Statistics (BLS)

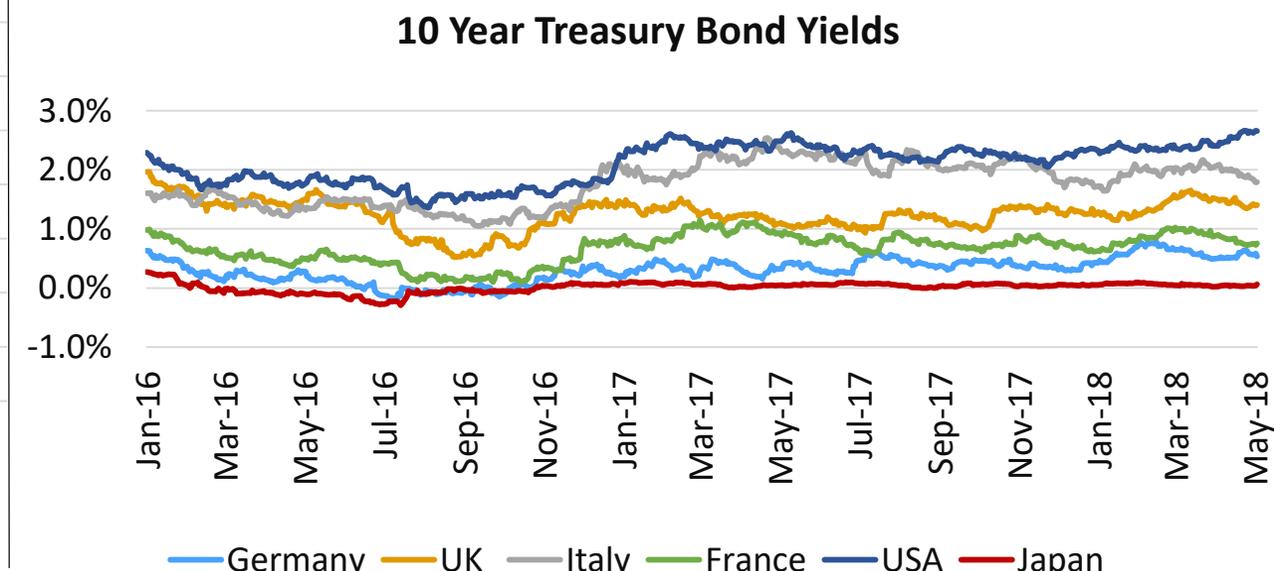
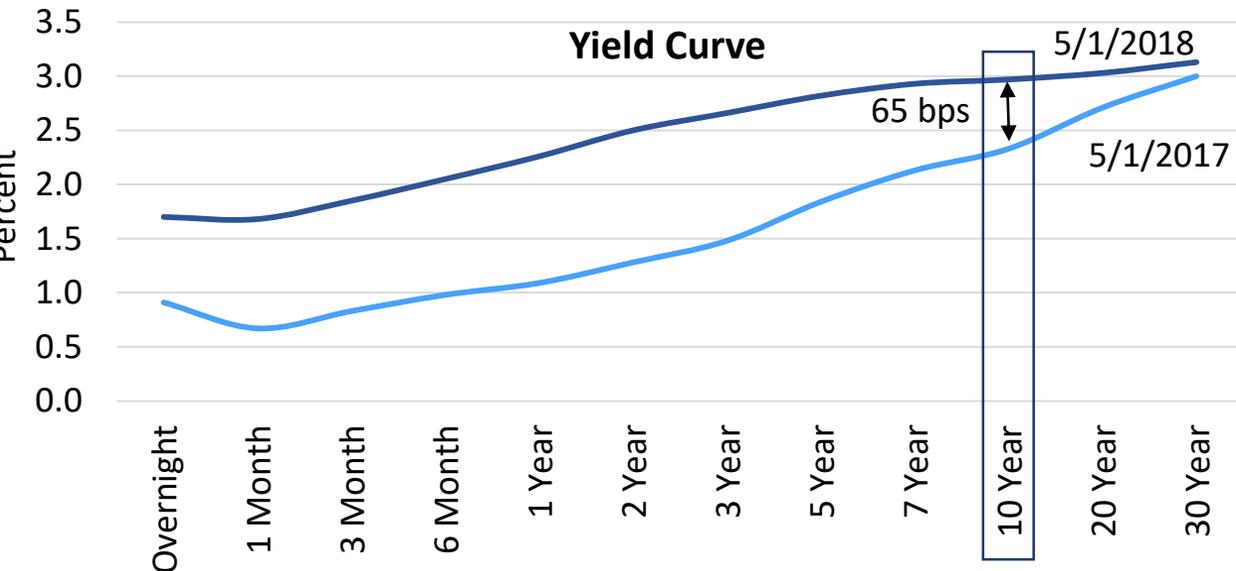
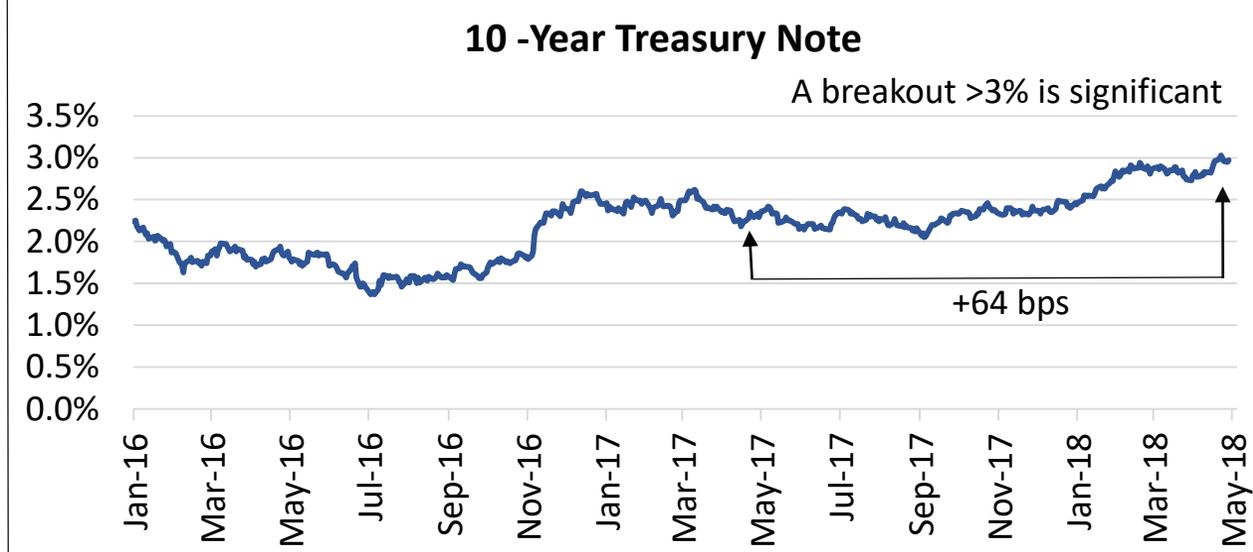
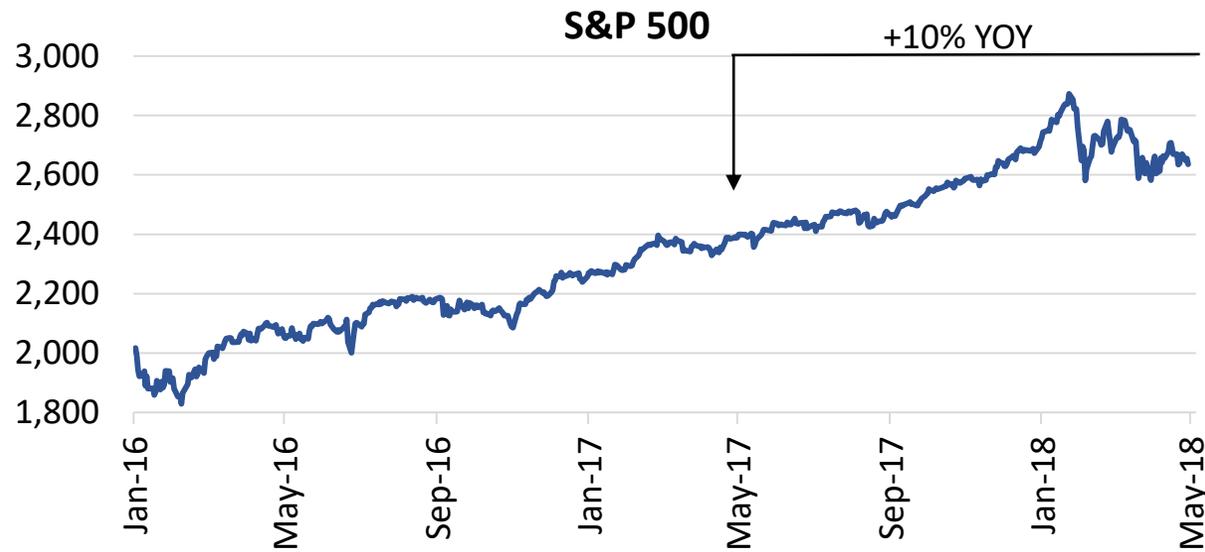
Implied Inflation Has Increased, but Remains Low



Oil Prices are Rising – Not a Clear Negative Anymore

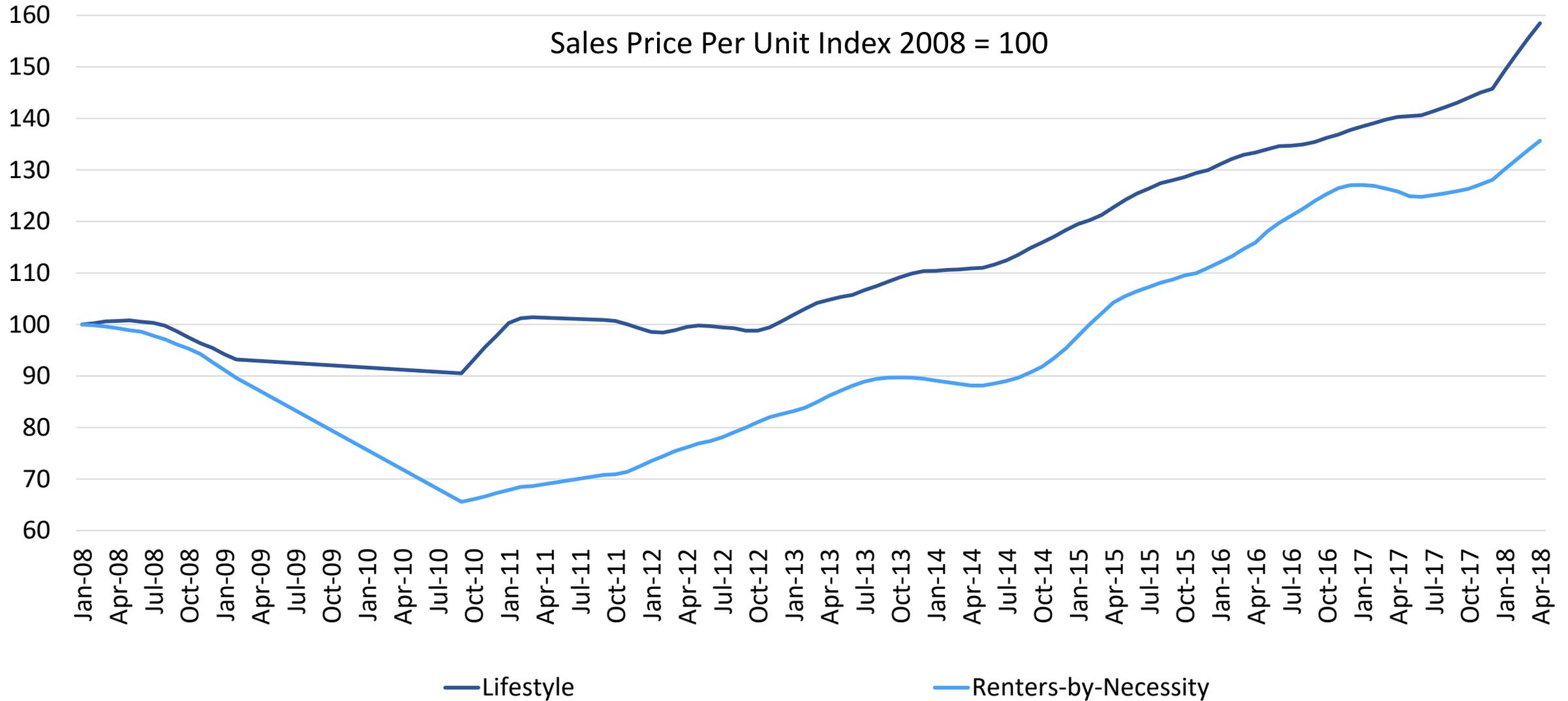


The U.S. Economy is Accelerating



Source: Moody's Analytics; Investing.com

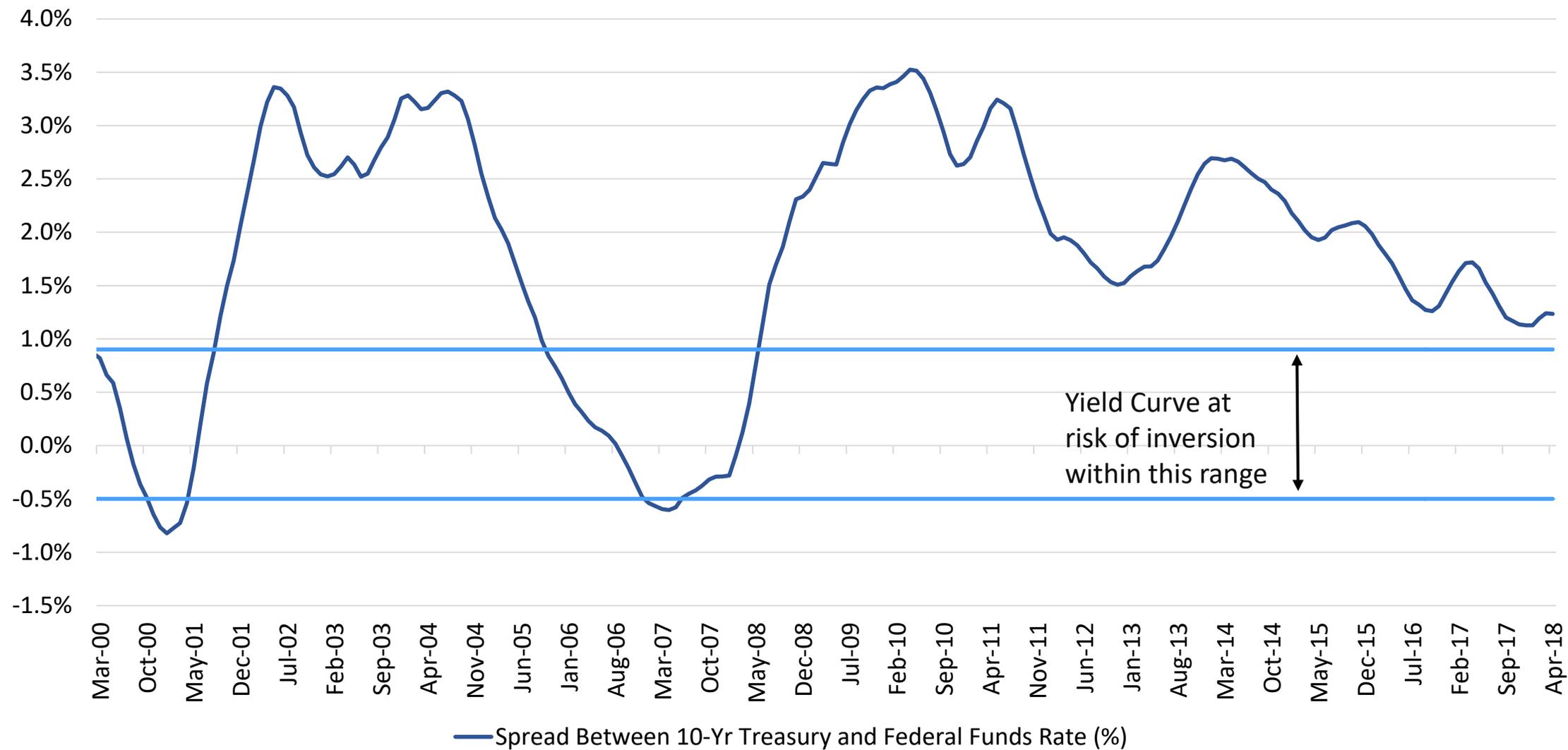
National Multi-Family Values are Still Increasing



Watch for These 5 Signs that Presage a Recession

1. Average Hourly Earnings Growth goes from 2.5% to 4.0%
2. Cyclical Sector Share of GDP moves from 24% to 28% of GDP
3. GDP Deflator moves from <2.0% to 2.5%
4. Operating Capacity Utilization Rate moves from 76% to 80%
5. Yield Curve Inverts (10 Yr treasury rate less Fed Funds Rate) from +90bp to >-50bp → NOT YET! Best guess 2020-2021

Until the Yield Curve Inverts, No Need to Worry



*Data is based on 6-month rolling averages

Source: Moody's Analytics; U.S. Board of Governors of the Federal Reserve System (FRB)

U.S. Federal Policy Mix is Mildly Pro-Growth

Pro-Growth

- Tax Reform
- Regulatory Relief
- Executive Orders
 - Energy
 - Finance
 - Labor Costs



Generally Positive Progress

Pro-Growth but Slow

- Infrastructure
- Education Reform
 - German Model
- Healthcare Reform



Progress in Tone,
but Not Yet Substantive

Anti-Growth

- Immigration Control
- Trade Renegotiation
 - President Trump announced U.S. will impose tariffs on steel and aluminum imports



Recent Tariff Move a Potential Drag on Growth

Analysis of the Overflow Out of Gateway Cities Into Secondary Cities and Impacts on Multifamily

The Amazon 20...Plus

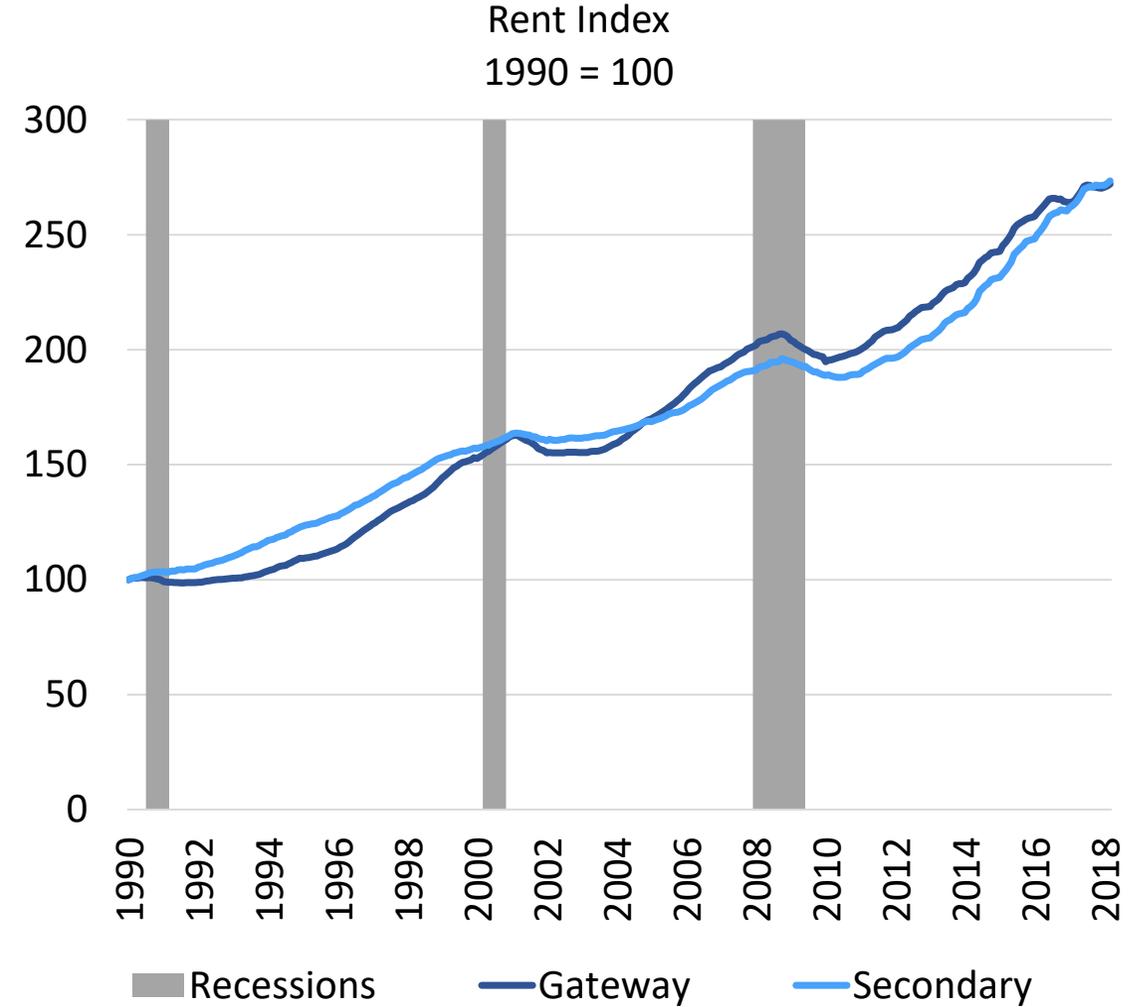
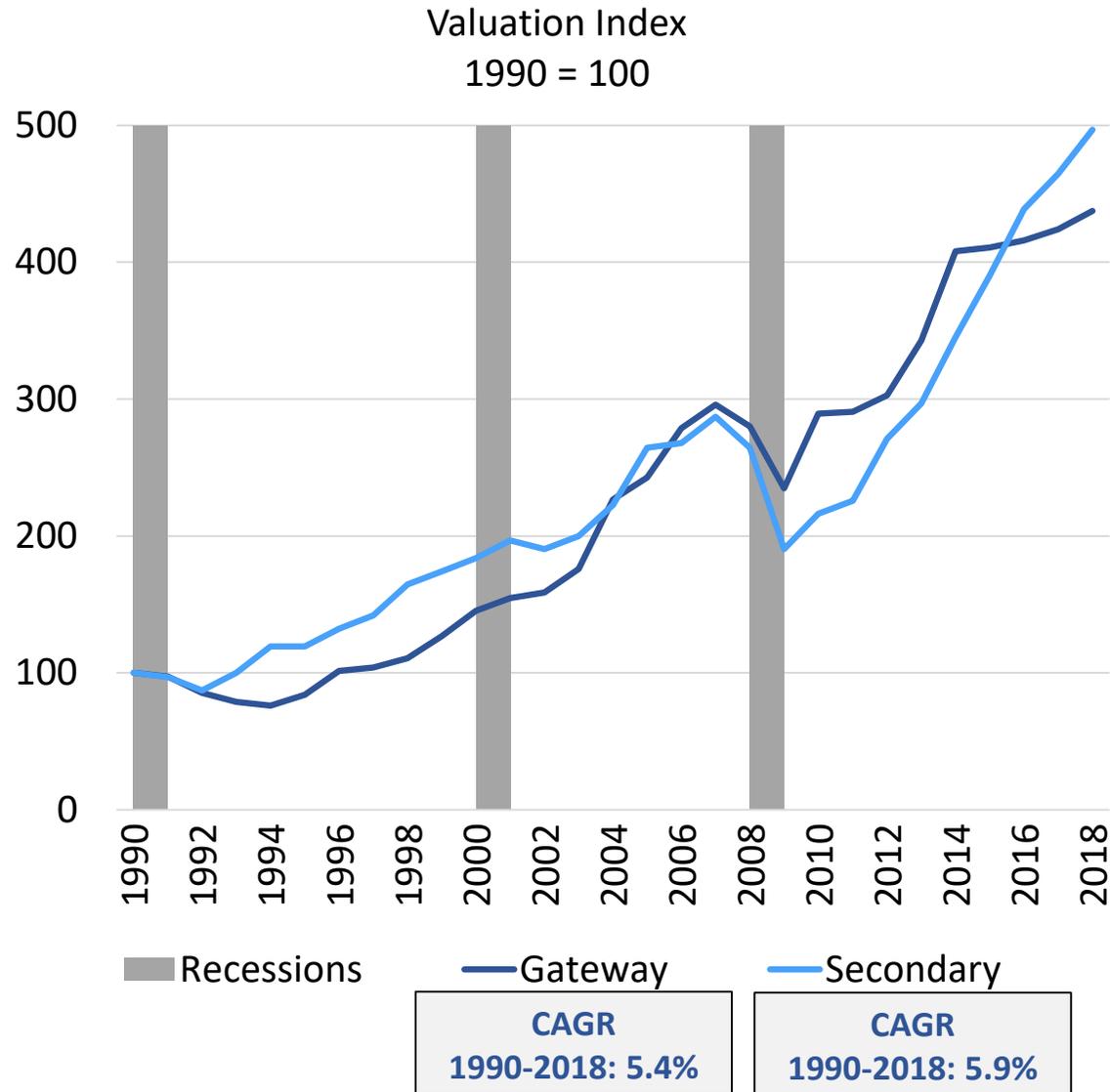
Gateway Cities	Known Tech Hub Cities	Generally Overlooked Markets
<p>San Francisco/Bay Area</p> <p>Los Angeles</p> <p>Chicago</p> <p>Washington DC Metro</p> <p>New York/New Jersey Metro</p> <p>Boston</p> <p>Northern Virginia</p> <p>Montgomery County</p>	<p>Portland</p> <p>Seattle</p> <p>Denver</p> <p>Austin</p> <p>Dallas</p> <p>Houston</p> <p>Nashville</p> <p>Atlanta</p> <p>Miami</p> <p>Raleigh</p>	<p>Phoenix</p> <p>Salt Lake City</p> <p>Indianapolis</p> <p>Columbus</p> <p>Tampa</p> <p>Orlando</p> <p>Pittsburgh</p> <p>Philadelphia</p>

Blue Text = Amazon HQ2 Finalist

*Toronto is a finalist for the Amazon HQ2 but is not included in this analysis

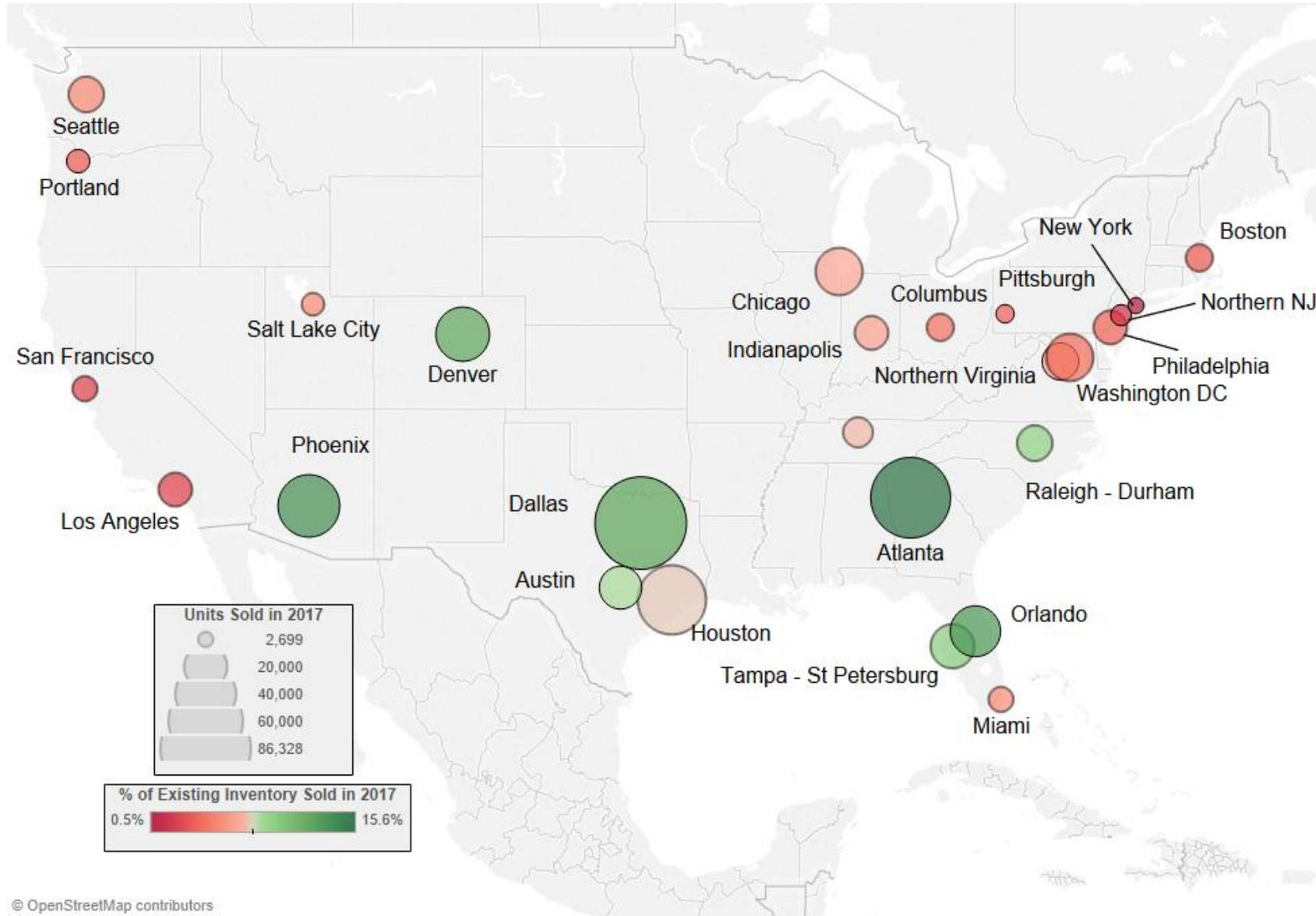
Source: Yardi®Matrix

Primary Markets are More Stable During Downturns



*Gateway = avg of "gateway cities", Secondary = avg of "known tech hub cities" and "generally overlooked markets" on the slide "The Amazon 20...Plus"

Primary Markets Had Fewer Sales Than Secondary

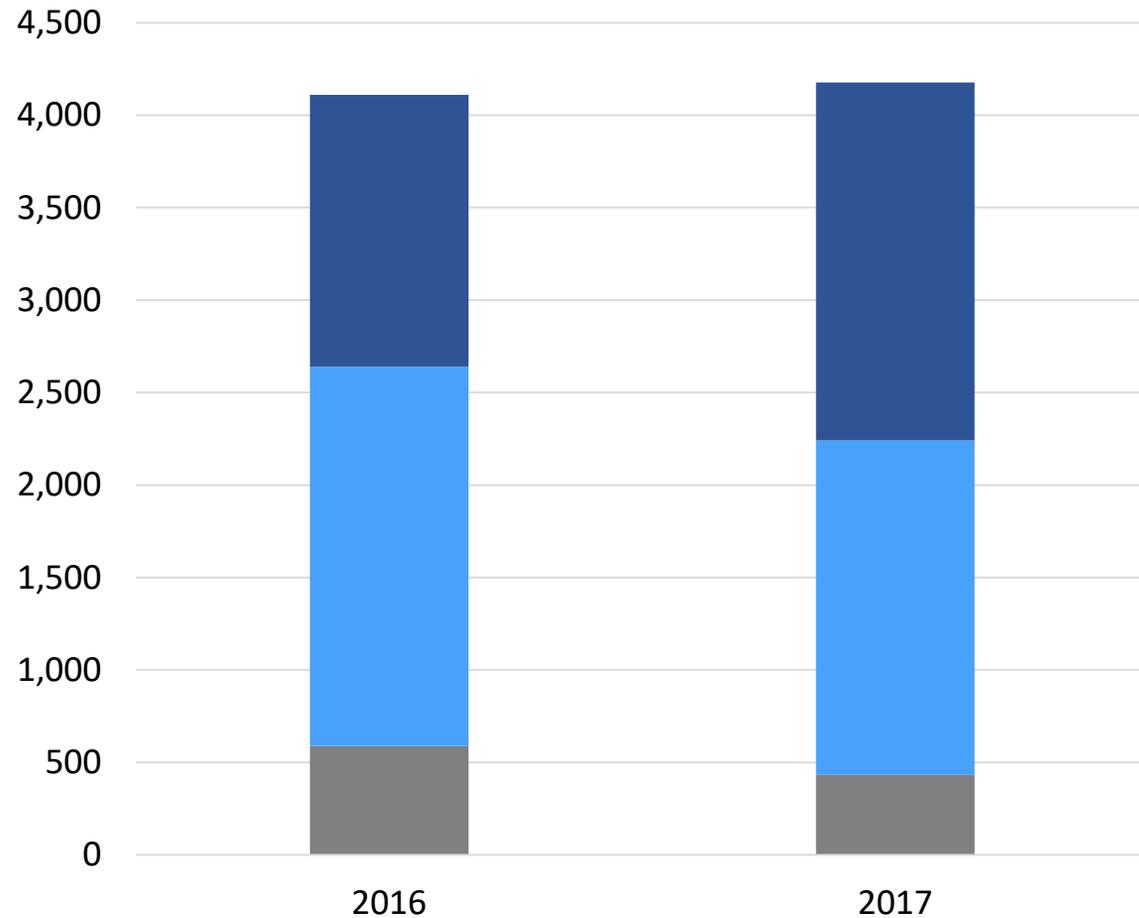


Big Red Bubbles:
Most Liquid Markets

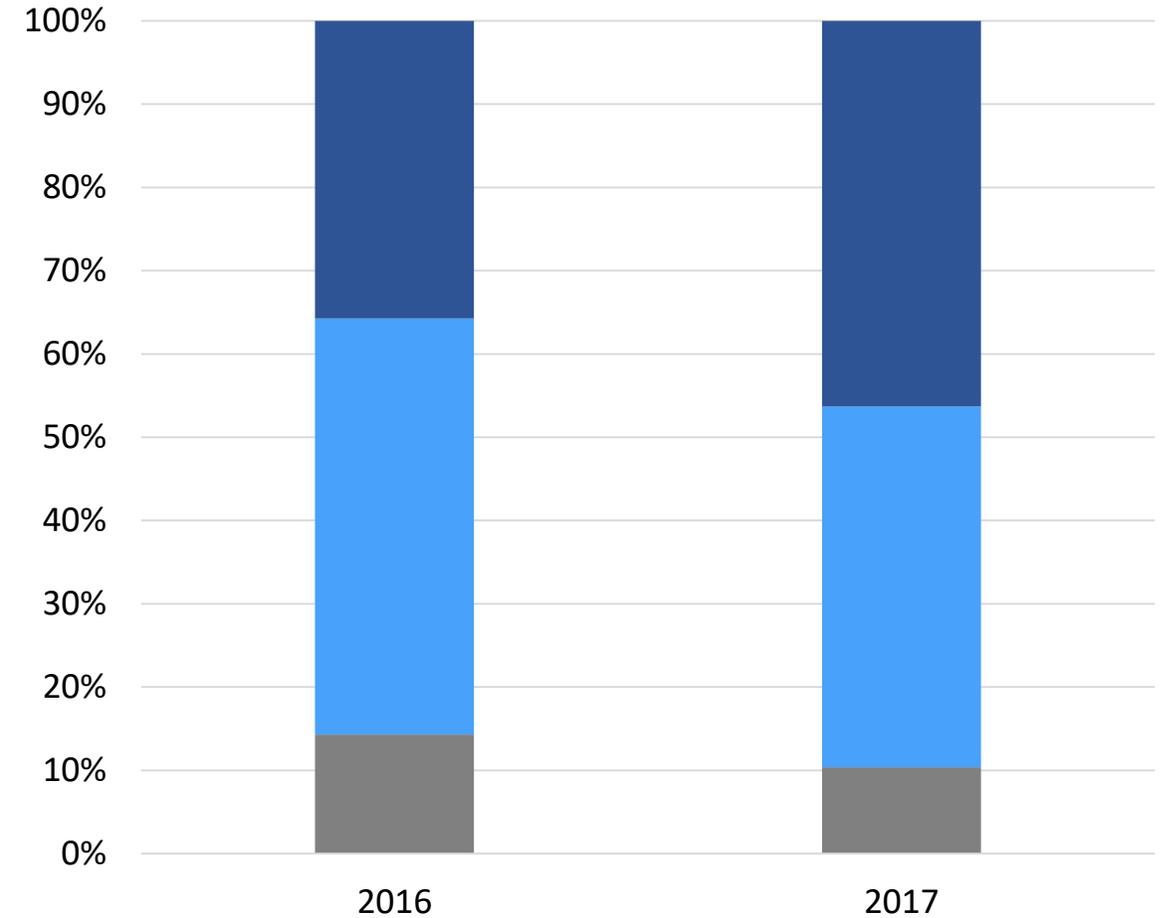
Small Green Bubbles:
Least Liquid Markets

Sales Have Shifted to Secondary and Tertiary Markets

Properties Sold by Market Type



% of Properties Sold by Market Type



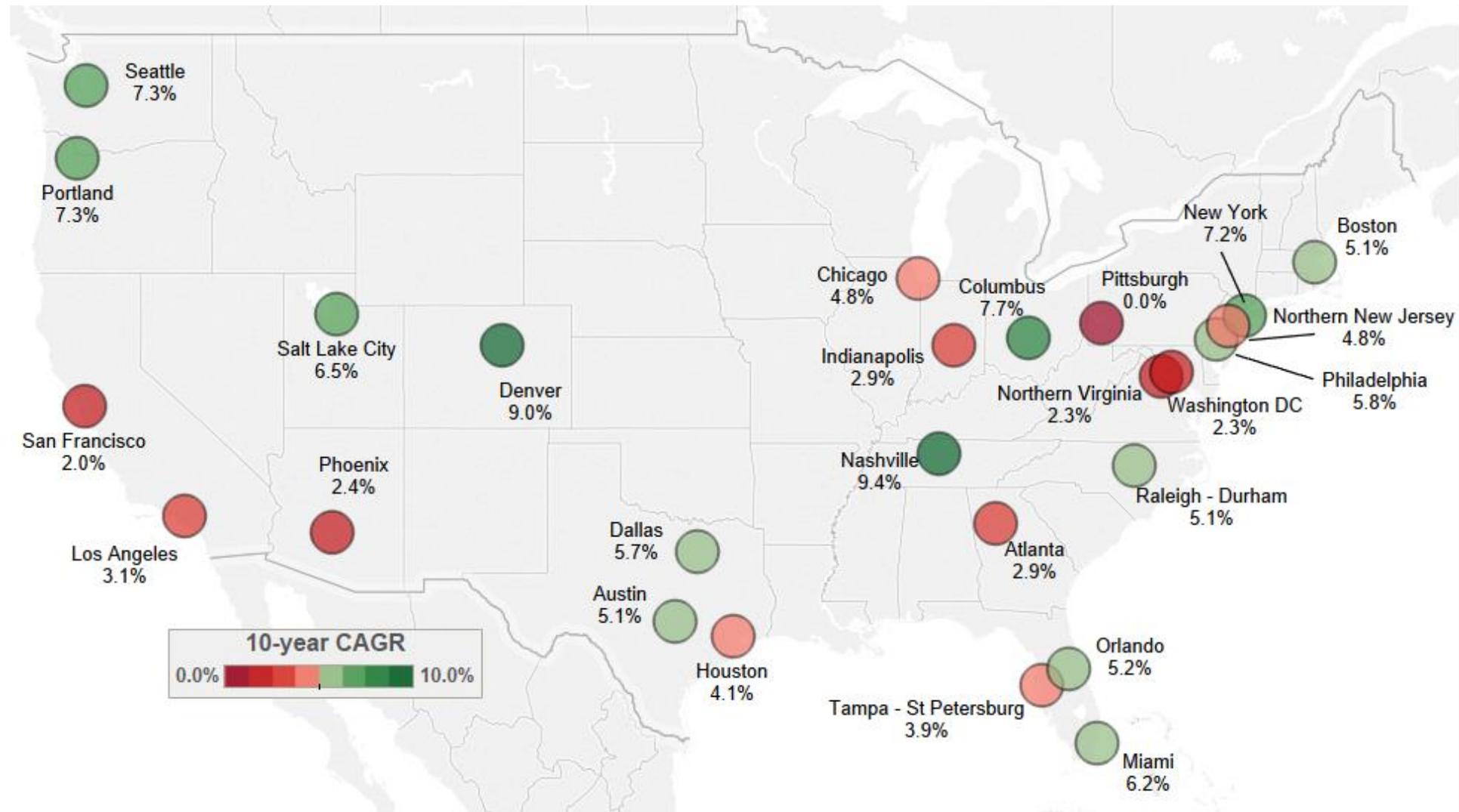
■ Primary ■ Secondary ■ Tertiary

*Gateway = avg of "gateway cities", Secondary = avg of "known tech hub cities" and "generally overlooked markets" on the slide "The Amazon 20...Plus"

Source: Yardi®Matrix



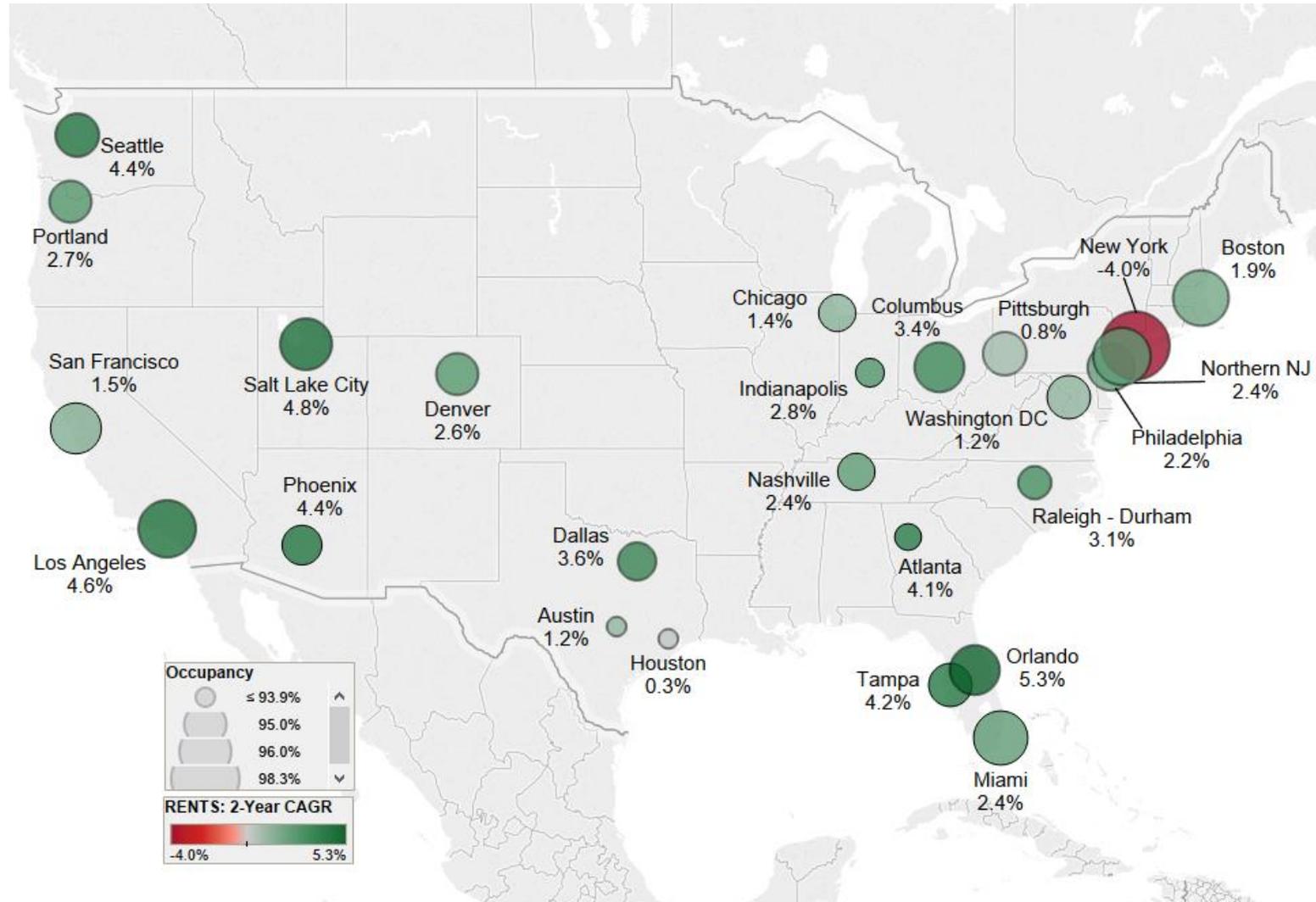
Long-Term Valuations Outperformed in Secondary Markets Since 2008



*Multi-family sales price per unit CAGR: 2008-2017. Values are not "same-store" sales; subject to mix shifts

Source: Yardi®Matrix; Tableau

Secondary/Tertiary Markets Have the Most Recent Rent Growth



*Rent growth CAGR: 2015-2017

Source: Yardi®Matrix; Tableau

Job Growth is Happening in Secondary Cities

At this stage in the economy, companies are relocating and expanding in markets where their money will get them further

Charles Schwab

- Relocated jobs from San Francisco to lower-cost states like Texas and Colorado
- Consolidated Denver-area employees and newly relocated employees into a \$230 million campus in Lone Tree, CO
- Light rail currently being extended in part to accommodate employees and other residents drawn to the area

KPMG

- Developing \$400 million, 55-acre learning, development and innovation campus in Lake Nona outside of Orlando
- Create 330 new jobs and 800,000 sq. ft. for meeting, classroom, residential and dining facilities

Market	2016-2017 Emp. Growth	Trend	Market	2016-2017 Emp. Growth	Trend
Reno	5.0%	Accelerating	San Diego	2.0%	Decelerating
Boise	4.1%	Accelerating	Fort Lauderdale	2.0%	Decelerating
Nashville	3.2%	Decelerating	Denver	2.0%	Decelerating
Orlando	3.2%	Decelerating	West Palm Beach	1.9%	Decelerating
Austin	3.2%	Decelerating	Columbus	1.9%	Decelerating
Charlotte	2.9%	Decelerating	New York	1.8%	Decelerating
Las Vegas	2.9%	Decelerating	Boston	1.7%	Decelerating
Dallas	2.8%	Decelerating	Washington DC	1.6%	Stable
Phoenix	2.8%	Decelerating	Minneapolis	1.6%	Stable
Seattle	2.7%	Decelerating	Kansas City	1.6%	Decelerating
Raleigh	2.6%	Decelerating	Detroit	1.6%	Decelerating
Portland	2.5%	Decelerating	Philadelphia	1.5%	Stable
South Bay Area	2.5%	Decelerating	Miami	1.4%	Decelerating
Charleston	2.3%	Decelerating	Indianapolis	1.4%	Decelerating
Salt Lake City	2.3%	Decelerating	Los Angeles	1.2%	Decelerating
East Bay Area	2.3%	Decelerating	Newark	1.2%	Stable
Atlanta	2.3%	Decelerating	Pittsburgh	1.1%	Accelerating
San Francisco	2.3%	Decelerating	St. Louis	1.0%	Decelerating
Sacramento	2.1%	Decelerating	Houston	0.9%	Decelerating
Tampa	2.1%	Decelerating	Chicago	0.9%	Decelerating
Orange County	2.1%	Decelerating	Milwaukee	0.3%	Decelerating

Population Growth is in Secondary Markets

With the exception of Washington DC, secondary and tertiary markets are the only ones seeing stable or rising population growth since 2015

Market	2015 Pop. Growth	2016 Pop. Growth	2017 Pop. Growth	Overall Trend
New York	0.6%	0.4%	0.2%	Decelerating
Los Angeles	0.5%	0.3%	0.1%	Decelerating
Chicago	0.0%	-0.1%	-0.1%	Falling
Houston	2.6%	2.0%	1.4%	Decelerating
Washington DC	1.0%	1.0%	1.1%	Stable
Philadelphia	0.2%	0.2%	0.3%	Stable
Atlanta	1.7%	1.6%	1.5%	Decelerating
Dallas	2.2%	2.2%	2.1%	Decelerating
Boston	0.7%	0.6%	0.6%	Decelerating
Phoenix	2.0%	2.0%	1.9%	Decelerating
San Francisco	1.3%	0.9%	0.6%	Decelerating
Tampa	2.0%	2.1%	1.8%	Decelerating
Seattle	1.7%	1.9%	1.6%	Decelerating

Market	2015 Pop. Growth	2016 Pop. Growth	2017 Pop. Growth	Overall Trend
Denver	2.1%	1.6%	1.3%	Decelerating
Miami	1.2%	1.1%	0.6%	Decelerating
Newark	0.2%	0.3%	0.4%	Rising
Orlando	2.7%	2.6%	2.3%	Decelerating
Portland	1.7%	1.7%	1.2%	Decelerating
Pittsburgh	-0.3%	-0.3%	-0.3%	Steady/Negative
Austin	3.0%	3.0%	2.7%	Decelerating
Columbus	1.2%	1.2%	1.6%	Rising
Indianapolis	0.8%	0.9%	1.1%	Rising
Nashville	2.1%	2.2%	1.8%	Decelerating
Raleigh	2.4%	2.5%	2.3%	Decelerating
Salt Lake City	1.2%	1.6%	1.4%	Decelerating

Although population is falling in Pittsburgh, the greater downtown's population expanded by 22% between 2010 and 2016

Tax Reform Will Likely Accelerate Existing Migration Patterns

- Gateway markets already losing population, and tax reform will make it worse
 - New cap on the deduction for state and local taxes will accelerate migration out of gateways
 - Deduction for state and local taxes capped at \$10,000/family
 - Top earners in states with high income taxes will owe more
- States to benefit: Florida, Nevada, Texas, Washington (no income tax)
- Past 10 years:
 - 3.5 million net Americans relocated from highest-tax states to lowest-tax states
- Past 3 years:
 - Texas and Florida gained a net \$50 billion in income and purchasing power from other states
 - California and New York have surrendered a net \$23 billion
- Next 3 years (prediction):
 - California and New York will lose on net about 800,000 residents
 - Roughly twice the number that left from 2014-2016

ALEC-Laffer State Economic Outlook Rankings, 2018
Based upon equal-weighting of each state's rank in 15 policy variables

Rank	State	Rank	State
1	Utah	26	Kansas
2	Idaho	27	Louisiana
3	Indiana	28	Nebraska
4	North Dakota	29	Iowa
5	Arizona	30	West Virginia
6	Florida	31	Kentucky
7	North Carolina	32	Maryland
8	Wyoming	33	South Carolina
9	South Dakota	34	Alaska
10	Virginia	35	New Mexico
11	Georgia	36	Delaware
12	Tennessee	37	Washington
13	Nevada	38	Pennsylvania
14	Texas	39	Rhode Island
15	Colorado	40	Connecticut
16	Oklahoma	41	Oregon
17	New Hampshire	42	Maine
18	Michigan	43	Montana
19	Wisconsin	44	Minnesota
20	Alabama	45	Hawaii
21	Ohio	46	New Jersey
22	Arkansas	47	California
23	Missouri	48	Illinois
24	Mississippi	49	Vermont
25	Massachusetts	50	New York

States That Spend & Tax Less Have Higher Growth Rates

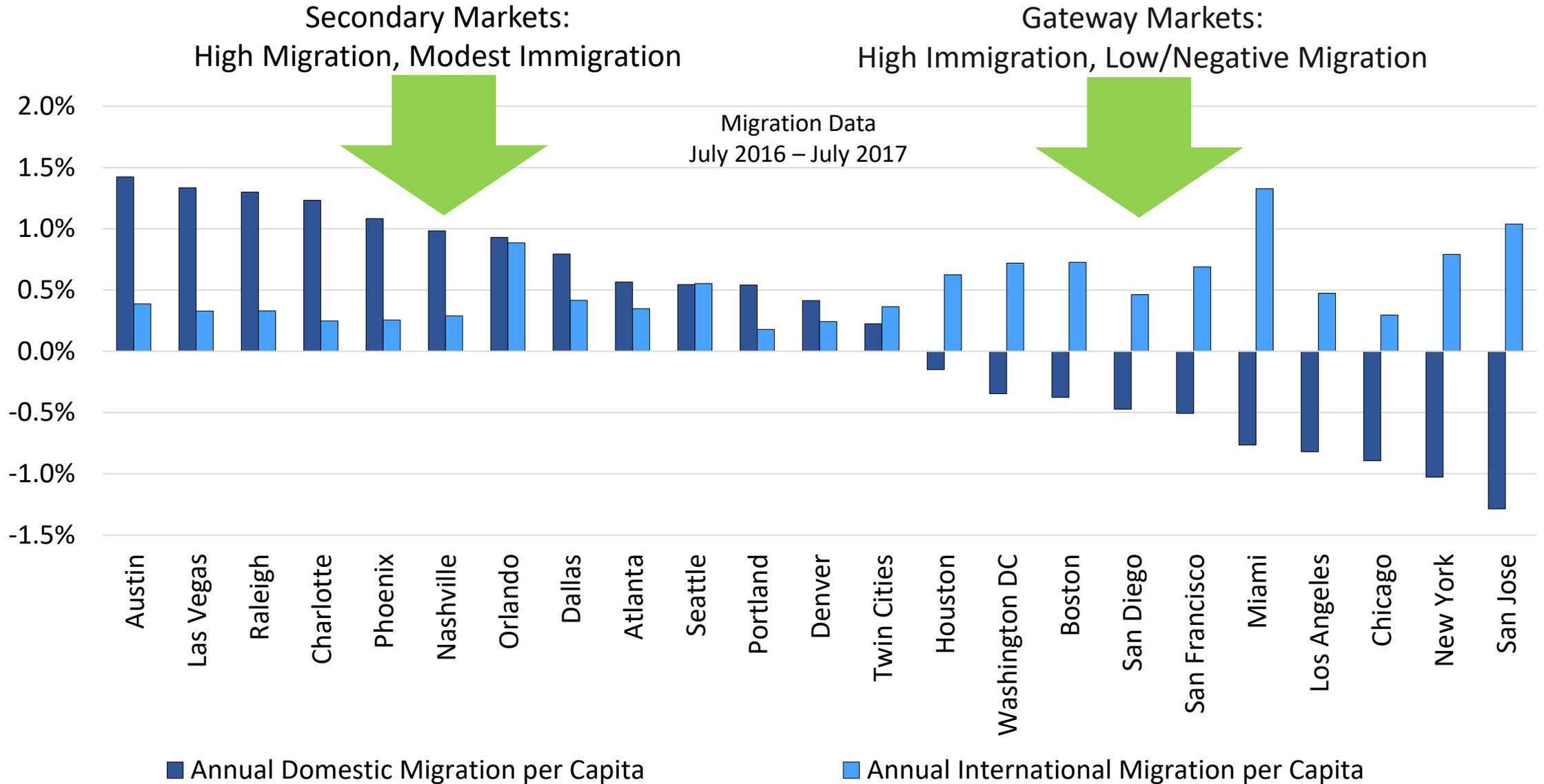
ALEC-Laffer State Economic Performance Rankings, 2006-2016

Rank	State	State GDP	Domestic Migration	Non-Farm Payroll	Rank	State	State GDP	Domestic Migration	Non-Farm Payroll
1	Texas	6	1	2	26	Maryland	16	42	23
2	Washington	3	7	5	27	New Hampshire	30	26	27
3	North Dakota	1	16	1	28	Delaware	36	19	31
4	Utah	5	13	3	29	Arkansas	34	20	32
5	Colorado	13	5	4	30	Indiana	20	39	28
6	Oregon	10	10	12	31	Louisiana	48	15	25
7	South Carolina	14	6	15	32	Kansas	23	38	30
8	South Dakota	4	22	9	33	Nevada	49	11	35
9	Montana	8	18	11	34	Missouri	31	34	33
10	Tennessee	15	9	14	35	Pennsylvania	17	44	37
11	North Carolina	21	3	17	36	Alabama	38	17	44
12	Idaho	22	14	6	37	Wisconsin	24	40	36
13	Nebraska	2	29	13	38	Vermont	35	28	39
14	Georgia	26	8	16	39	Alaska	50	31	24
15	Massachusetts	9	41	8	40	West Virginia	33	24	49
16	Oklahoma	25	12	22	41	Maine	43	25	43
17	Florida	39	2	19	42	Ohio	27	45	40
18	Iowa	7	30	29	43	Wyoming	47	21	50
19	New York	12	50	7	44	Mississippi	37	36	46
20	California	11	49	10	45	New Mexico	44	32	45
21	Hawaii	18	33	21	46	Illinois	32	48	41
22	Minnesota	19	37	18	47	Michigan	40	47	38
23	Virginia	28	27	20	48	Rhode Island	45	35	48
24	Kentucky	29	23	26	49	New Jersey	41	46	42
25	Arizona	42	4	34	50	Connecticut	46	43	47

Source: ALEC.org: Rich States, Poor States: Alec-Laffer State Economic Competitiveness Index: Arthur Laffer, Stephen Moore and Jonathan Williams; The Wall Street Journal: So Long California. Sayonara, New York: Arthur Laffer and Stephen Moore

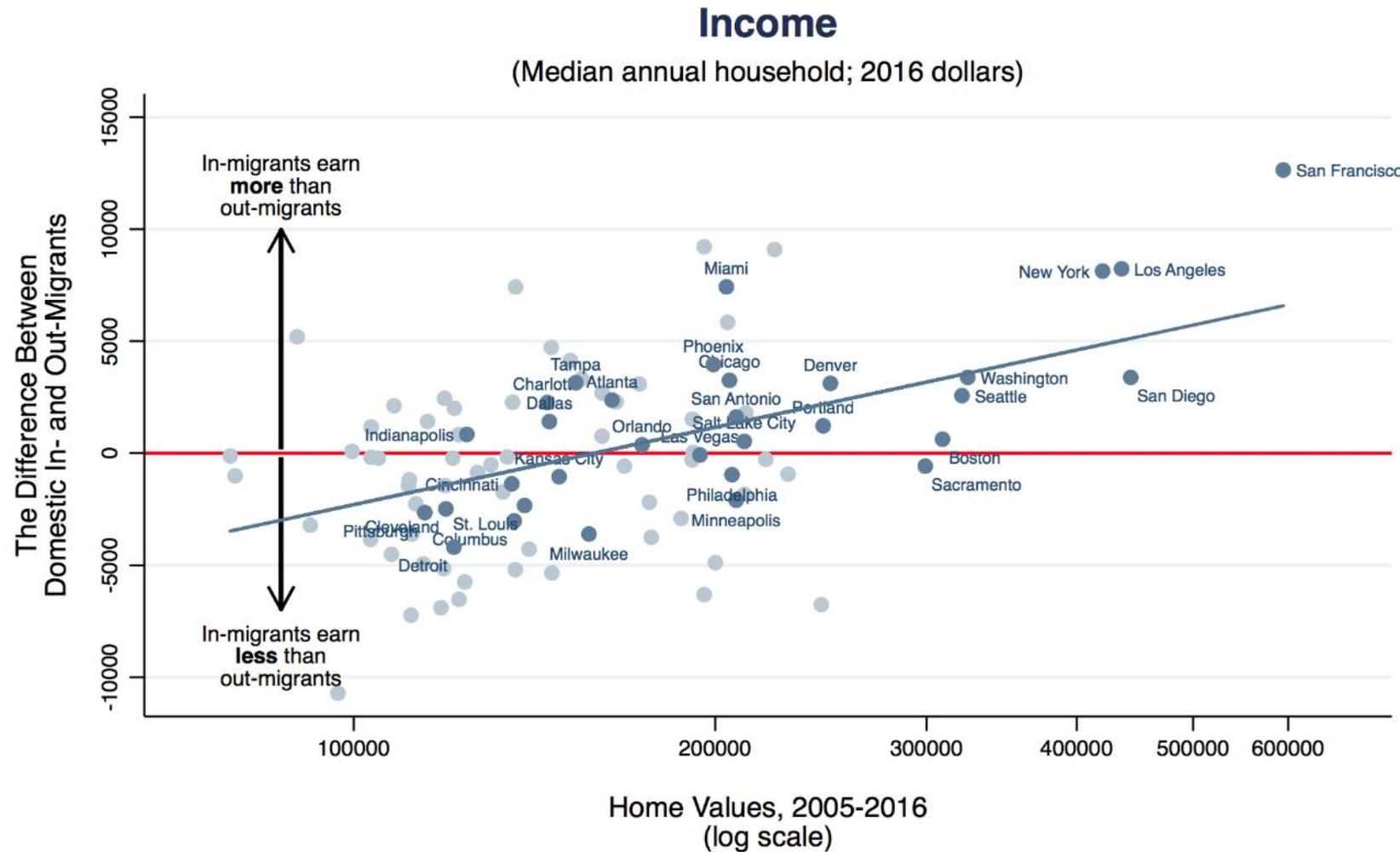


Immigration is Key to Gateway Population Growth

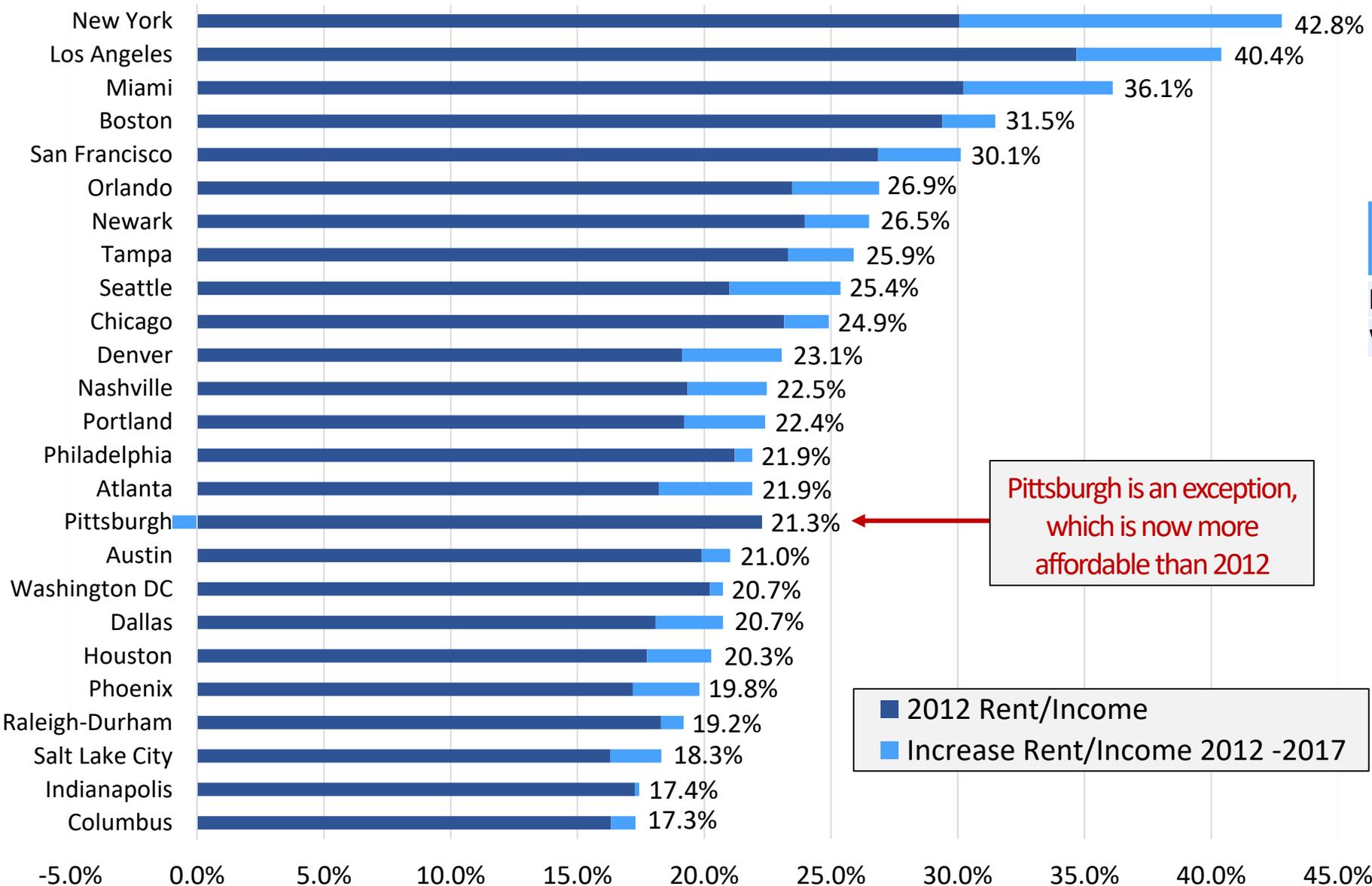


In-Migrants in Gateways Earn More Than Out-Migrants

- Sustains expensive housing price appreciation above any rise in incomes
- In-migrants typically:
 - Have more earners per household
 - Are younger
 - Are less likely to own a home than out-migrants
- Transient Class:
 - People arrive in expensive metros as young adults, but are priced out and leave at the point of raising children



Markets Are Less Affordable Than 5 Years Ago



Average Rent in Secondary Tech Markets Compared to the Nearest Gateway Cities

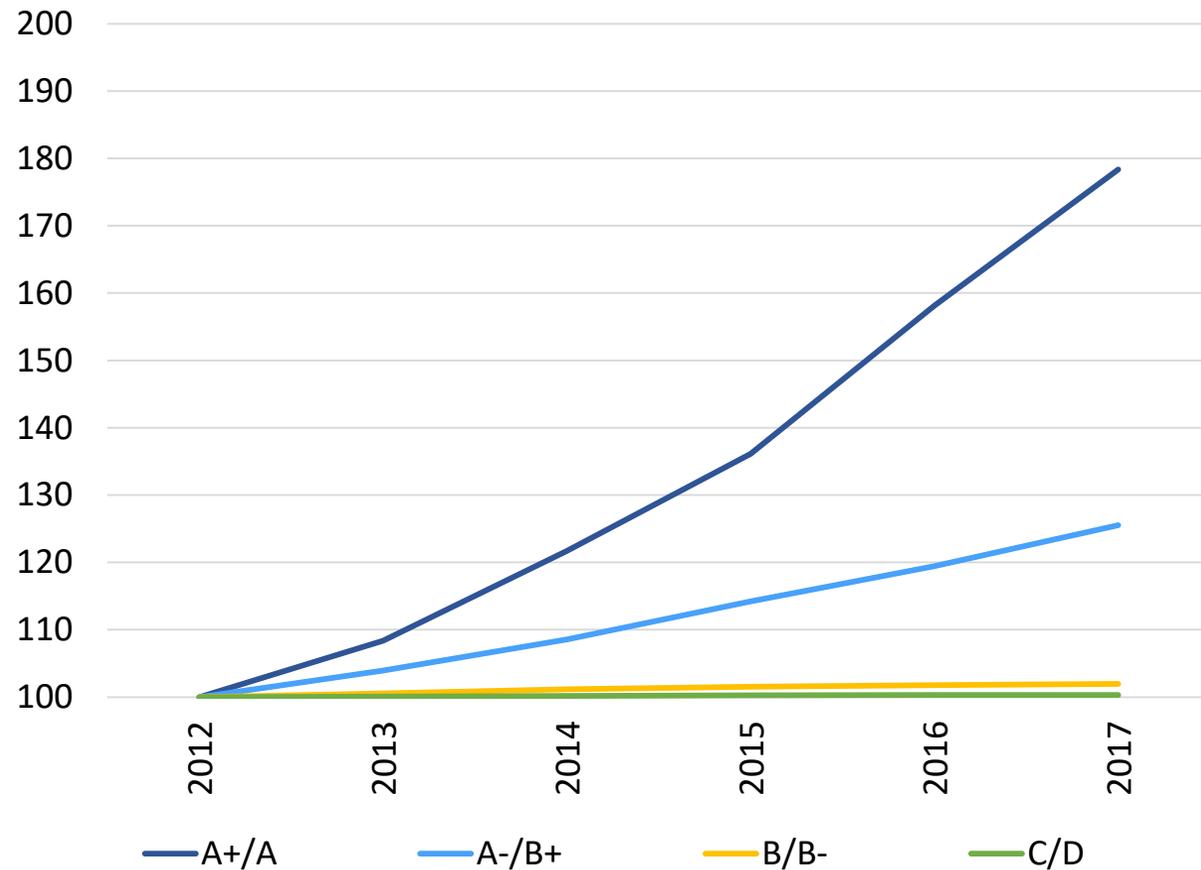
Market	Avg. Rent Dec 2017
Raleigh-Durham	\$1,112
Washington DC	\$1,733
Austin	\$1,294
Los Angeles	\$2,056
Seattle	\$1,746
San Francisco	\$2,550
Los Angeles	\$2,056
Denver	\$1,464
San Francisco	\$2,550
Los Angeles	\$2,056
Nashville	\$1,187
Washington DC	\$1,733
Chicago	\$1,432

Pittsburgh is an exception, which is now more affordable than 2012

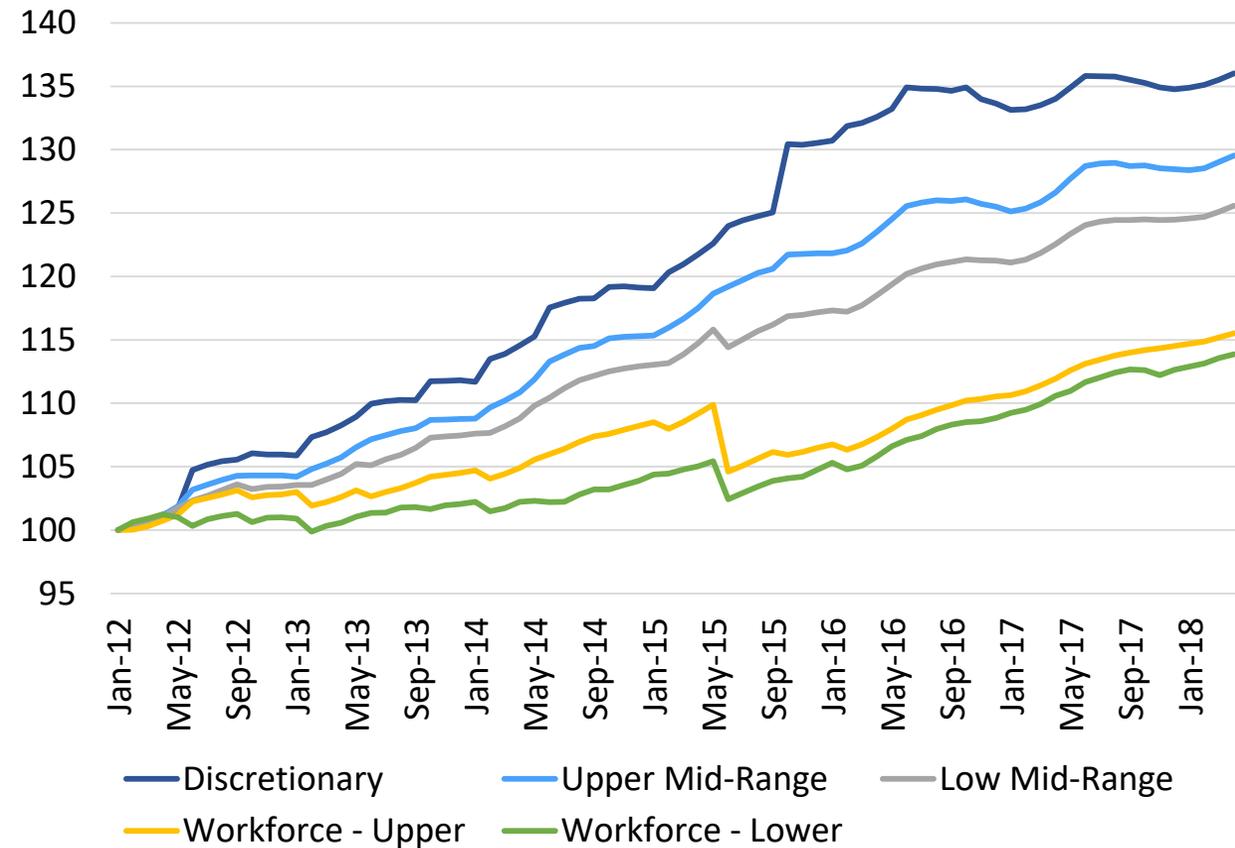
2012 Rent/Income
Increase Rent/Income 2012 -2017

New Supply Has Been Concentrated in Higher Quality Assets, Which Have Had the Most Rent Growth

New Inventory by Asset Quality: Index 2012=100



Average Rent by Asset Quality: Index 2012=100



Highlights of Growing Secondary Tech Markets

The Amazon 20...Plus

Gateway Cities	Known Tech Hub Cities	Generally Overlooked Markets
<p>San Francisco/Bay Area</p> <p>Los Angeles</p> <p>Chicago</p> <p>Washington DC Metro</p> <p>New York/New Jersey Metro</p> <p>Boston</p> <p>Northern Virginia</p> <p>Montgomery County</p>	<p>Portland</p> <p>Seattle</p> <p>Denver</p> <p>Austin</p> <p>Dallas</p> <p>Houston</p> <p>Nashville</p> <p>Atlanta</p> <p>Miami</p> <p>Raleigh</p>	<p>Phoenix</p> <p>Salt Lake City</p> <p>Indianapolis</p> <p>Columbus</p> <p>Tampa</p> <p>Orlando</p> <p>Pittsburgh</p> <p>Philadelphia</p>

Blue Text = Amazon HQ2 Finalist

*Toronto is a finalist for the Amazon HQ2 but is not included in this analysis

Source: Yardi®Matrix

Other Cities That Didn't Make Our Cut

(No Judgment on Their Attractiveness)

West	Midwest	South/East
San Diego, CA Sacramento, CA Boise, ID	Minneapolis, MN Madison, WI Kansas City, MO Omaha, NE Detroit, MI	Charlotte, NC Jacksonville, FL

Tech Talent Quality vs. Cost Analysis

Average Annual Salary for Software Engineer (USD)



*Boxed markets are part of the Amazon 20 finalists

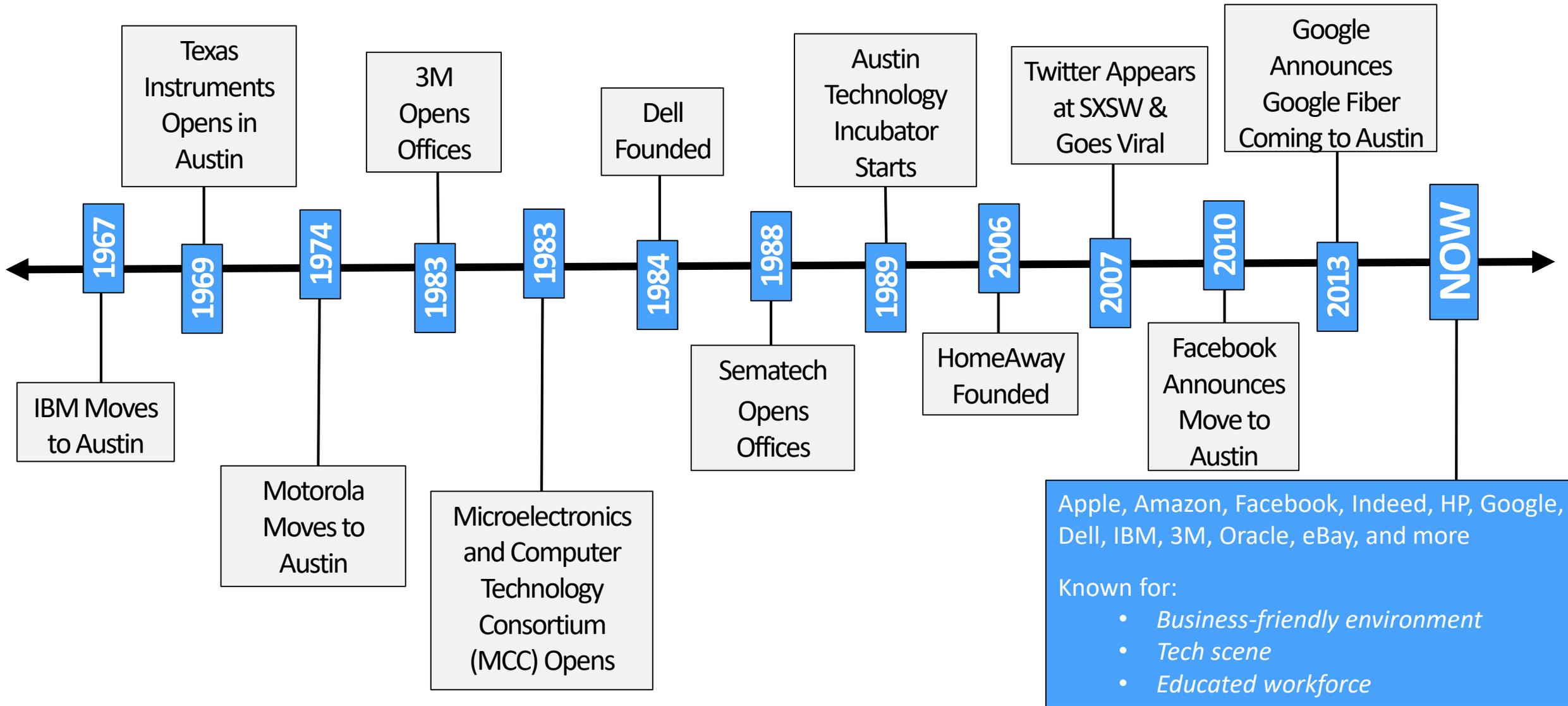
Source: CBRE Research, 2017; CBRE Labor Analytics; U.S. Bureau of Labor Statistics (BLS); Statistics Canada, April 2017; U.S. News & World Report

Tech Talent Quality vs. Cost Analysis

	GOOD	HIGH	VERY HIGH	EXCEPTIONAL
HIGH COST				<ul style="list-style-type: none"> Seattle San Francisco/Bay Area
MODERATE COST	<ul style="list-style-type: none"> Virginia Beach San Antonio Columbus Charlotte Hartford Richmond 	<ul style="list-style-type: none"> Salt Lake City Orlando Minneapolis St. Louis Sacramento Phoenix 	<ul style="list-style-type: none"> Denver Washington DC NY/NJ Boston LA/O.C. Austin San Diego Baltimore 	<ul style="list-style-type: none"> Atlanta Chicago Philadelphia Portland Raleigh-Durham Houston Dallas/Ft. Worth
LOW COST	<ul style="list-style-type: none"> Jacksonville Kansas City Omaha Milwaukee Rochester Tampa 	<ul style="list-style-type: none"> Cincinnati Cleveland Nashville Oklahoma City 	<ul style="list-style-type: none"> Madison Miami Fort Lauderdale 	<ul style="list-style-type: none"> Detroit Pittsburgh Indianapolis

*Blue markets are part of the Amazon 20 finalists

Timeline for Austin Shows Tech Development Takes Time



Phoenix, AZ

- Arizona's promise to keep the driverless car industry free of regulations has attracted many companies:
 - Waymo, Uber, Lyft, General Motors, Intel...
 - Phoenix residents are test-riding Waymo's vehicles as passengers
 - Waymo has self-driven more than 5 million miles across all locations since 2009
 - Uber's self-driving trucks are conducting regular freight halls in AZ through the Uber Freight network
- Advanced Manufacturing
 - Industry leaders manufacturing in Phoenix– Intel, Microchip, Freescale Semiconductor, Honeywell, JDA Software, and Frito Lay
 - Since 1979, Intel has invested more than \$20 billion in Arizona to develop advanced high-tech manufacturing capacity
 - Intel announced a \$7 billion expansion slated to bring 3,000 new jobs to Phoenix



Orlando, FL

Lake Nona

- 17 square mile master-planned community – one of the country’s fastest growing
- More than 12,000 residents and more than 10 million sq. ft. of residential and commercial facilities
- Health and life sciences cluster
- Lake Nona Town Center
 - 3.8 million sq. ft. campus
 - 80,000 sq. ft. of retail, restaurant, and entertainment

Johnson & Johnson

- \$18 million expansion of its existing 17,000 sq. ft. development and training center
- New regional headquarters
- Create 25 position by Dec 31 2020 that pay an average annual wage of \$100,000



What Helps a City Reach its Critical Point to Succeed?

All existing tech markets have these characteristics to some degree

Public and Private Partnerships

Friendly Business Environment

Community and Amenities that Retain and Draw in Talent

Educated Workforce

Indianapolis, IN

Public and Private Partnerships

- Many public and private entities partnered for the creation of the 16 Tech Innovation Community
 - Planned 60-acre site slated to become a biotech hub
 - Various industry, government, philanthropic, nonprofit, and university partners

Community and Amenities that Retain and Draw in Talent

- 16 Tech Innovation Community will be a live, work, play community supporting quality of life
 - Parks, restaurants, retail, art, offices, apartments and hotels
- Home of the NCAA, Super Bowl champions, Indy 500, Indiana Pacers, world class symphony

Friendly Business Environment

STATE RANK – #10

- Indiana Economic Development Corporation
 - Offers many business tax incentives, corporate tax credits and economic development programs
 - Very competitive business tax structure
 - Tax credits and training grants promoting growth for Aggressively Organic (200 jobs), BrainForest (185 jobs), along with various others

Educated Workforce

University	Approx. Enrollment 2017
Butler University	5,022
University of Indianapolis	5,500
Indiana University School of Medicine	1,400
Indiana University-Purdue University Indianapolis	29,790
Indiana University	49,695
Purdue University	41,573

What's Going on in Indianapolis?

- GEICO adding 1,400+ new jobs, including hundreds of IT professionals
 - Quadrupled workforce since 2013
- \$259 million FedEx distribution center adding 450 jobs
- Tech and health care expanding
 - Indiana University Health planning \$83 million expansion of hospital
 - New \$50 million hospital and new health-care facility, multiple new centers being planned
 - Large tech presence – Salesforce and InfoSys
- 16 Tech Community
 - 24-hour live, work, play and learn environment
 - Coworking and makerspace, offices and labs, apartments, hotels, restaurants, retail
 - Connected by 15 acres of green space with parks, walking and biking trails, and access to waterways
 - First phase of construction:
 - 120,000 sq. ft. innovation community hub
 - 250-unit apartment complex
 - Office and warehouse renovation
 - New Class A office building and research space
 - Food, beverage and retail space
 - Bridge connecting with Indiana University-Purdue University Indianapolis (IUPUI), IU School of Medicine and hospital campuses
 - Pedestrian and cycling path
 - Public art and central green space

Average Rent Compared to Nearest Gateway City

Market	Avg. Rent - Dec 2017
Indianapolis	\$871
Chicago	\$1,429



8,511,959 passengers flew in and out of Indianapolis International Airport in 2017

79,828,183 passengers flew in and out of O'Hare International Airport in 2017

51 multi-family transactions valued at \$590 million in 2017



Columbus, OH

Public and Private Partnerships

- Many public and private entities partnered for massive development along both sides of the Scioto River
 - Columbus Downtown Development Corporation (CDDC), Columbus Center of Science and Industry (COSI), State of Ohio, civic and community leaders
- Public and private entities are also teaming to revitalize the previously struggling Milo-Grogan area

Community and Amenities that Retain and Draw in Talent

- Open parks, walkways and bike paths, restaurants, museums, a band shell, fountain, carousel, etc. along both sides of the Scioto River
- Development of an 18-hour mixed-use district, with 1,700 residential units, 800,000 sq. ft. of office, 150,000 sq. ft. of restaurant and retail space, and a 150-room boutique hotel

Friendly Business Environment

STATE RANK – #14

- State and city tax credits and incentive packages encouraging retention and expansion of companies in the Columbus area, including Koorsen Fire & Security (25 jobs), Matic Insurance Services (50 jobs), Accenture plc (200 jobs)

Educated Workforce

University	Approx. Enrollment 2017
Ohio State University	66,444
Ohio University	29,712
Miami University	19,452
Kent State University	28,972
University of Dayton	10,803

What's Going on in Columbus?

- Accenture Plc named Columbus one of 14 U.S. innovation hubs for the global IT consulting firm
 - Adding 200 jobs by end of 2020
- Koorsen Fire & Security
 - Adding 14,000 sq. ft., 25 jobs, and \$1 million to payroll
 - Ohio Tax Credit Authority approved a 0.991%, five-year tax credit
- Matic Insurance Services Inc.
 - \$400,000 expansion of call center into administrative office – 50 new jobs by 2020
 - Utilizing state and city incentive packages
- JP Morgan Chase, Honda, Huntington Bank – large employers
- Milo-Grogan area near downtown is emerging thanks manufacturing hub
 - Public-private partnership transforming the neighborhood
 - New housing, improved infrastructure and neighborhood, job training and employment resources
- Development along the Scioto River
 - Accessible urban amenity for Downtown's residents, professionals and visitors
 - Center of Science and Industry and National Veterans Memorial and Museum
 - Scioto Peninsula Park and Garage – 6.5-acre park and 600-space underground parking garage
 - 18-Hour Mixed-Use District
 - Planned 1,700 residential units, 800,000 sq. ft. of office, 150,000 sq. ft. of restaurant and retail, hotel
 - Franklinton – multimillion-dollar housing, retail and office developments in the works
 - Scioto Mile
 - Reconnected downtown to the Scioto River with parks, boulevards, bikeways, and pedestrian paths
 - John W. Galbreath Bicentennial Park – 15,000 sq. ft. fountain, band shell, restaurants
 - Scioto Greenways – 33 acres of new urban greenspace
 - Columbus Commons – 6 acre park: gardens, performance stage, carousel, outdoor reading room, NEOS play system, Bocce ball courts, two cafes

Average Rent Compared to Nearest Gateway Cities

Market	Avg. Rent - Dec 2017
Columbus	\$919
Chicago	\$1,429
Washington DC	\$1,734



7,576,592 passengers flew in and out of John Glenn Columbus International Airport in 2017

79,828,183 passengers flew in and out of O'Hare International Airport in 2017

23,928,248 passengers flew in and out of Ronald Reagan Washington National Airport in 2017

35 multi-family transactions valued at \$393 million in 2017



What's Going on in Pittsburgh?

Public and Private Partnerships

- City, regional, and State institutions partnered to create the Pittsburgh Technology Center, a high-tech hub in the city
- The Allegheny Conference brings together public and private sector leaders to improve the economic future and quality of life in Pittsburgh
- Innovate PGH built to accelerate city's status as a central hub for innovation and technology – City of Pittsburgh, Carnegie Mellon, University of Pittsburgh, UPMC, etc.

Community and Amenities that Retain and Draw in Talent

- The Strip District is a nationally-known and thriving neighborhood filled with residents, workers, visitors and tourists
 - Offers shopping, living, working and recreational experiences, easily accessible by mass transit
- East Liberty and Lawrenceville neighborhoods emerging, attracting artists, entrepreneurs, tech offices, restaurants

Friendly Business Environment

STATE RANK #27

- The State of Pennsylvania is not very business friendly
- Pittsburgh Regional Alliance (PRA) offers services to companies looking to locate or expand in Pittsburgh
 - Site selection, market research, international business support, funding and incentives solutions, workforce attraction and retention resources, connections to industry leaders

Educated Workforce

University	Approx. Enrollment 2017
University of Pittsburgh	28,642
Carnegie Mellon University	14,528
Duquesne University	8,717
Chatham University	2,269
Point Park University	901

What's Going on in Pittsburgh?

- Uber's Advanced Technologies Group testing self-driving cars is based in Pittsburgh
- Recent arrivals/expansions of Google, Uber, Amazon underpin the growing tech presence
- Amazon expanding existing office by 22,000 sq. ft. and 125 new tech jobs
- The Strip District
 - Plans to convert 100 year old railroad loading dock into retail, restaurants and pedestrian passages
 - Mixed-use development that will include small and local businesses
 - Land across the street also purchased with plans to invest \$50 million for office conversion
- City is slowly losing residents, but according to the Pittsburgh Downtown Partnership, greater downtown's population expanded by 22% between 2010 and 2016
- CSX wrapping up its \$850 million rail terminal
- Shell's \$6 billion plant expected for completion in 2020
- Eight new hospitals with a collective price tag of \$2.7 billion underway or close to breaking ground
- \$750 million, multi-phase redevelopment of the former Civic Center arena
 - Could bring 1,000 residential units, and office/retail
- Technology Center
 - Office park on 48-acre site, academic, tech, and innovation hub
 - Partnership of several city, regional, and State institutions Home to many high-tech buildings
 - Deal in place to build six-story, 155,932 sq. ft. office building
 - Pittsburgh Technology Council
 - Assists tech companies with business development, talent retention, government relations and visibility services
 - Helps companies at all growth stages build new business, connect to capital, grow a workforce and make headlines

Average Rent Compared to Nearest Gateway Cities

Market	Avg. Rent - Dec 2017
Pittsburgh	\$1,050
Washington DC	\$1,734
New York	\$3,708

8,988,016 passengers flew in and out of Pittsburgh International Airport in 2017

23,928,248 passengers flew in and out of Ronald Reagan Washington National Airport in 2017

59,345,421 passengers flew in and out of John F. Kennedy International Airport in 2017

12 multi-family transactions valued at \$107 million in 2017



What's Going on in Philadelphia?

Public and Private Partnerships

- 30th Street Station District – Amtrack, Brandywine Realty Trust, Drexel University, PennDOT, SEPTA and SOM
- Schuylkill Yards – Brandywine Realty Trust, Drexel University, the City of Philadelphia, etc.
- Schuylkill River Development Corporation – many city, state, private foundations and organizations teaming up to maximize the potential of the Schuylkill Banks

Community and Amenities that Retain and Draw in Talent

- Schuylkill Yards – innovation community
 - Connected to city's economic and education centers
 - Office, residential, retail, hotel, lab space, innovation space, improved greenspace and streetscape
 - Restaurants, bars and storefronts
- Schuylkill Banks – construction, programming, and maintenance of a continuous 8-mile riverfront trail and greenway with associated access points and amenities along the Banks

Friendly Business Environment

STATE RANK #27

- The State of Pennsylvania is not very business friendly
- Schuylkill Yards & Keystone Opportunity Zone, giving residents and businesses various state and city tax benefits that will further stimulate investment and growth
- Aramark received significant state incentives – some reported \$20.5 million – to keep World Headquarters in city, bringing ~1,200 employees to the new office

Educated Workforce

University	Approx. Enrollment 2017
Drexel University	24,190
University of Pennsylvania	21,599
Temple University	40,240
Penn Medicine	595
The University of the Sciences	2,664
Lincoln University	2,266

What's Going on in Philadelphia?

Average Rent Compared to Nearest Gateway Cities	
Market	Avg. Rent - Dec 2017
Philadelphia	\$1,288
Washington DC	\$1,734
New York	\$3,708



29,585,754 passengers flew in and out of Philadelphia International Airport in 2017

23,928,248 passengers flew in and out of Ronald Reagan Washington National Airport in 2017

59,345,421 passengers flew in and out of John F. Kennedy International Airport in 2017

43 multi-family transactions valued at \$1.2 billion in 2017

SCHUYLKILL YARDS

- 14 acres of land
- 6.5M sq. ft. greenspace
- 987K sq. ft. innovation space
- 2.8 M sq. ft. office
- 1M sq. ft. lab
- 1.6 M sq. ft. residential
- 247K hotel
- 132K retail



- Comcast Technology Center
 - \$1.5 billion, 60-story, 1,121 sq. ft. tower, next to current world headquarters
 - Host technologists, engineers and software architects, a media center and startup incubator
- Presidential City
 - High-rise community currently under redevelopment, 1,000+ units coming online this year
- Entercom Communications Corp.
 - Nation's #2 radio station group owner
 - Planning to relocate corporate headquarters to building on Schuylkill waterfront
- Aramark
 - \$15 billion, Fortune 200 global leader in food, facilities management and uniforms
 - Planning to relocate world headquarters to Schuylkill waterfront, 1,200+ new employees
- Home prices increasingly rapidly- some young professionals being priced out
 - Discussion of law requiring property developers to set aside 10% of new projects as below-market units
- Schuylkill Yards
 - Innovation community – connection to economic and education centers
 - Knowledge neighborhood, leveraging the R&D resources of:
 - Drexel University, University of Pennsylvania, Penn Medicine, Children's Hospital of Philadelphia, University of the Sciences, Lincoln University, Science Center, Wistar Institute
 - Potential to add 25,000 new jobs and create millions of dollars in new tax revenue
 - Encourages human interaction – walking, meeting, shared experiences, collaboration
 - Fully engaged ecosystem – physical spaces become the framework to accelerate creativity, academic research, and commerce

What's Going on in Detroit?

Public and Private Partnerships

- The QLine, Detroit's new urban rail streetcar linking downtown to the city's cultural center in Midtown and beyond, was funded by Dan Gilbert, city government, philanthropic and business contributions
- Larson Realty Group, Goldman Sachs, Capital Impact Partners,, Michigan Strategic Fund, and the city of Detroit, among others, funding "The Corner", \$30 million mixed-use project

Community and Amenities that Retain and Draw in Talent

- The District, a \$1 billion project including a hockey arena and massive commercial, residential, and entertainment space spanning a 50-block area
 - Bars, restaurants, retail, offices, housing, and the new home for the Mike Ilitch School of Business at Wayne State University, which is expected to bring 3,500 graduate/undergraduate students to the area

Friendly Business Environment

STATE RANK #28

- Newly legislated Michigan Thrive Tax Incentive approved in 2017
 - Allow developers to keep up to 50 percent of state income tax generated by those who take new jobs or live in units at new sits, in addition to sales tax created by construction

Educated Workforce

University	Approx. Enrollment 2017
University of Michigan	46,002
Michigan State University	50,019
Wayne State University	27,089
University of Detroit Mercy	5,113

What's Going on in Detroit?

- Ford World Headquarters expanding facility to relocate 600 employees to the area
 - Although there is a revival of the automotive industry, the impact of recent tariffs places on outside steel and aluminum may dampen growth
- Flex-N-Gate filling 400 positions this fall at new \$160 million facility
- Sakthi Automotive plans to add 200 jobs once its \$7 million expansion is complete
- LinkedIn signed a 74,500 sq. ft. lease, positioning the company for future growth
- Google moving from suburb to Downtown Detroit
- United Shore expending and relocating headquarters just outside of Detroit
- Local authorities making efforts to improve quality of life with placemaking projects
- The Corner
 - \$30 million mixed-use development on former Tiger Stadium site
 - 111 apartments and 26,000 sq. ft. retail space with emphasis on small businesses
 - Expected to create 400 jobs
 - Key tenant: Build Institute
 - Detroit nonprofit that helps people turn their ideas into realities, promoting and supporting local entrepreneurs
- Baltimore Station 1 and 2
 - New \$29 million, 115,000 sq. ft. mixed-use developments
 - 161 apartments and 19,000 sq. ft. of retail
 - Baltimore Station 1: rehab of two historic buildings, now leasing and opening this summer
 - Baltimore Station 2: Expected completion in summer 2019

Average Rent Compared to Nearest Gateway Cities

Market	Avg. Rent - Dec 2017
Detroit	\$949
Chicago	\$1,429
Washington DC	\$1,734



34,701,497 passengers flew in and out of Detroit Metropolitan Airport in 2017

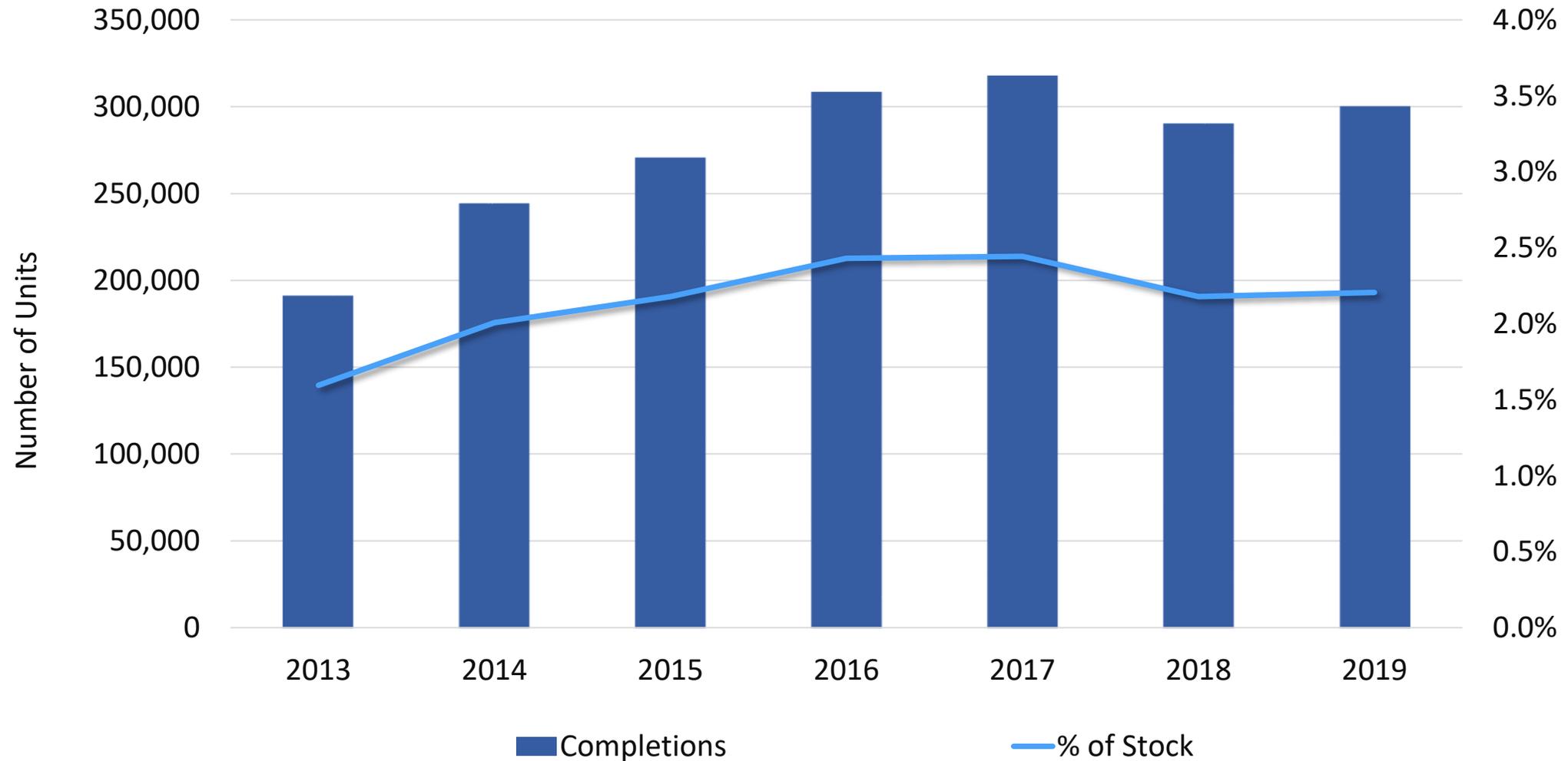
79,828,183 passengers flew in and out of O'Hare International Airport in 2017

23,928,248 passengers flew in and out of Ronald Reagan Washington National Airport in 2017

33 multi-family transactions valued at \$515 million in 2017



Multi-Family Supply Continues to Grow, but Has Leveled Due to Construction Delays



Metropolitan Demand Forecast Methodology

Yardi Matrix Metropolitan Level Population Forecasts



Metropolitan Headship Rate Derived from Moody's Population and Household Growth Forecasts at MSA Level



Household Growth = Population Forecasts x Headship Rates



Renter Household Growth = Household x Rentership Rate



Apartment Demand = Renter HH Growth x Apartment Renter %

Key Assumptions

- 10 basis point annual homeownership increase in secondary markets, flat homeownership in primary markets
- 50 basis point annual obsolescence of apartment stock
- 50% haircut in planned units being delivered for 13 markets with most excess 5 year supply

Potential Further Catalysts

- Tax reform migration impact
- Increased demand for apartments from migrants vs. existing apartment renter share

Secondary Tech Cities are at Risk of Oversupply in the Next Two Years (Margin of Error +/- 1.0%)

Market	Current Inventory (000's units)	2-Year Supply Growth	2-Year Demand Growth	Net %	Excess Units
Denver	252	9.7%	4.5%	(5.2%)	13,692
Seattle	231	9.0%	4.4%	(4.6%)	11,192
Charlotte	163	7.0%	2.7%	(4.3%)	7,190
Dallas	709	5.4%	2.2%	(3.3%)	23,953
Phoenix	295	4.5%	1.9%	(2.6%)	7,876
Miami	275	8.3%	5.7%	(2.5%)	7,756
Kansas City	149	4.3%	2.3%	(2.1%)	3,286
Atlanta	424	3.6%	1.6%	(2.0%)	8,736
Pittsburgh	89	2.5%	0.8%	(1.7%)	1,531
Boston	214	6.1%	4.5%	(1.6%)	3,805
Portland	147	4.8%	3.4%	(1.4%)	2,306
Washington DC	510	4.5%	3.3%	(1.1%)	6,727
Twin Cities	199	3.3%	2.3%	(1.0%)	2,095
Orlando	204	4.2%	3.3%	(1.0%)	2,253
San Antonio	189	3.1%	2.3%	(0.8%)	1,816

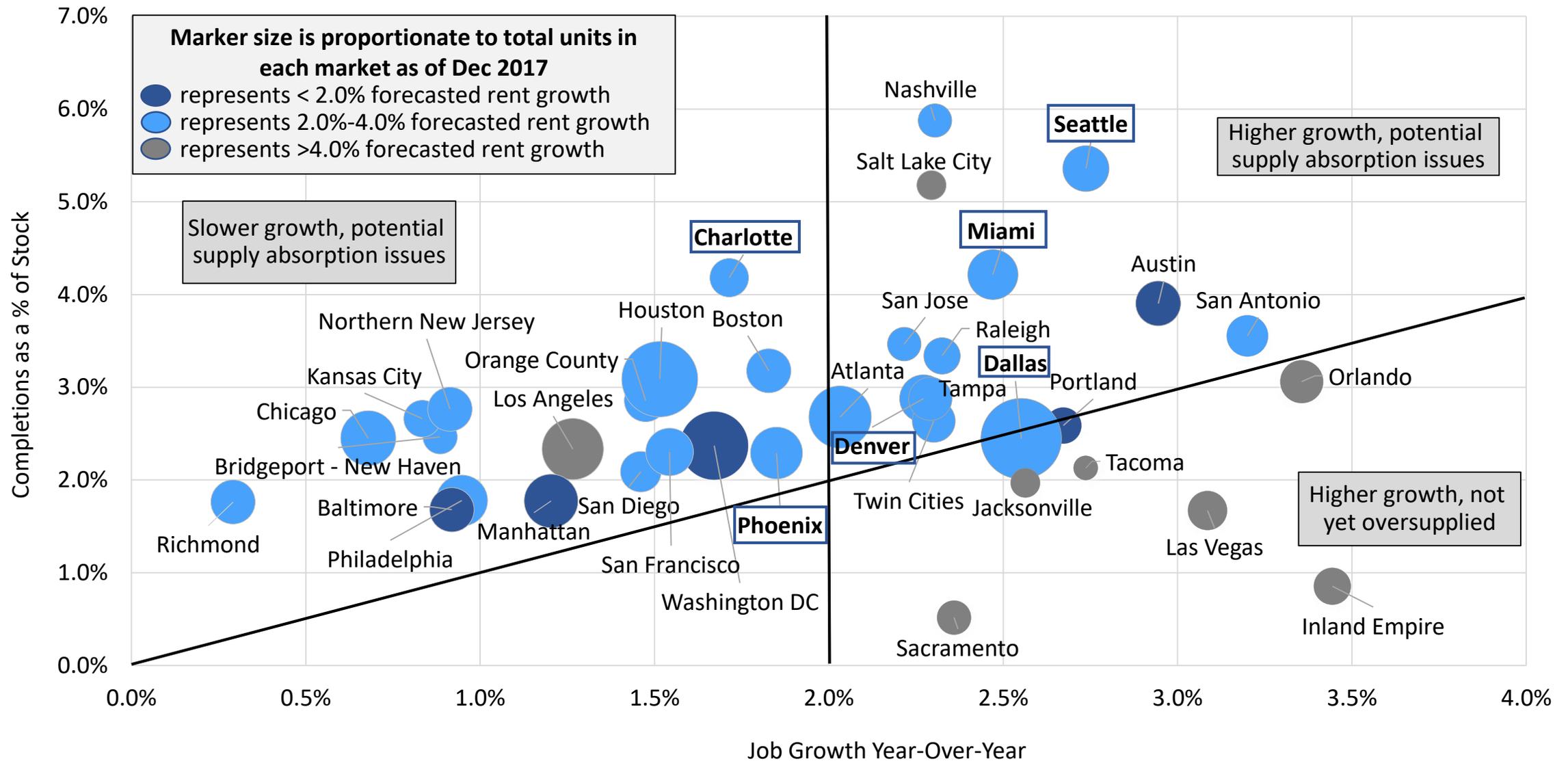
Market	Current Inventory (000's units)	2-Year Supply Growth	2-Year Demand Growth	Net %	Excess Units
St Louis	120	2.5%	1.8%	(0.7%)	978
Baltimore	217	1.9%	1.4%	(0.4%)	1,114
Philadelphia	288	2.3%	2.0%	(0.3%)	1,006
Tampa	206	3.2%	3.4%	0.2%	10
Cincinnati	108	1.6%	1.9%	0.2%	(157)
San Francisco	248	5.7%	6.1%	0.4%	(274)
Detroit	208	0.9%	1.3%	0.4%	(752)
Las Vegas	169	1.8%	2.3%	0.5%	(661)
Chicago	333	3.9%	4.6%	0.7%	(1,328)
San Diego	181	3.2%	4.2%	1.0%	(1,516)
New York	1,000	4.3%	5.4%	1.1%	(10,384)
Sacramento	128	1.3%	2.6%	1.3%	(1,486)
Houston*	629	1.0%	2.6%	1.6%	(8,974)
Inland Empire	150	1.5%	3.8%	2.3%	(3,281)
Los Angeles	410	5.7%	9.2%	3.5%	(13,047)

*Demand is a function of renter households growth and apartments as a % of the rental market

Source: Moody's Analytics; U.S. Bureau of Labor Statistics (BLS); Yardi® Matrix

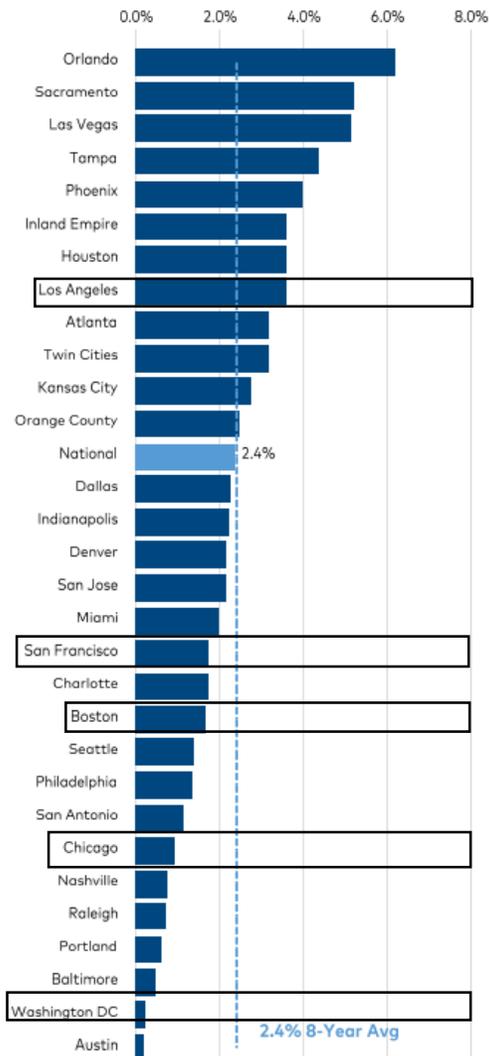


Expect a Bumpy 18-24 Months in Multifamily

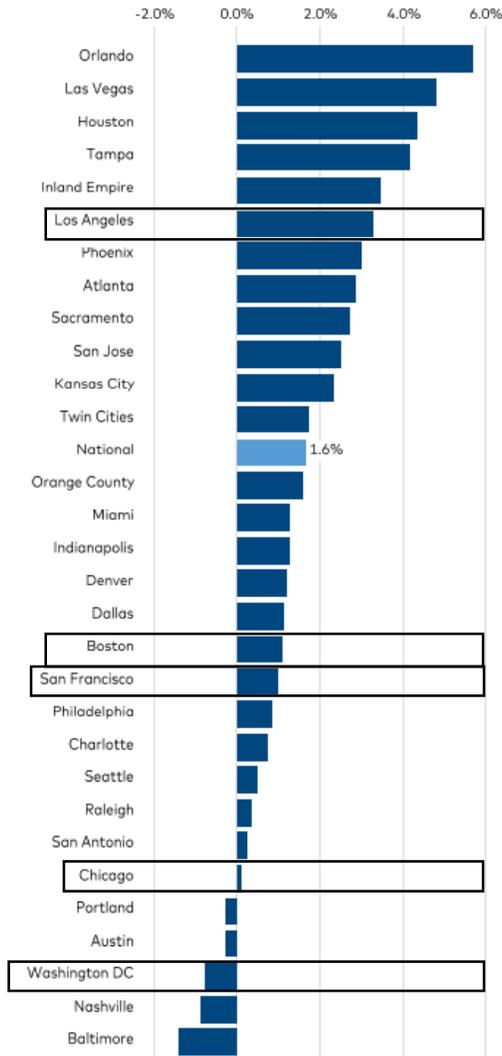


Gateways Fall Below the National Average Rent Growth

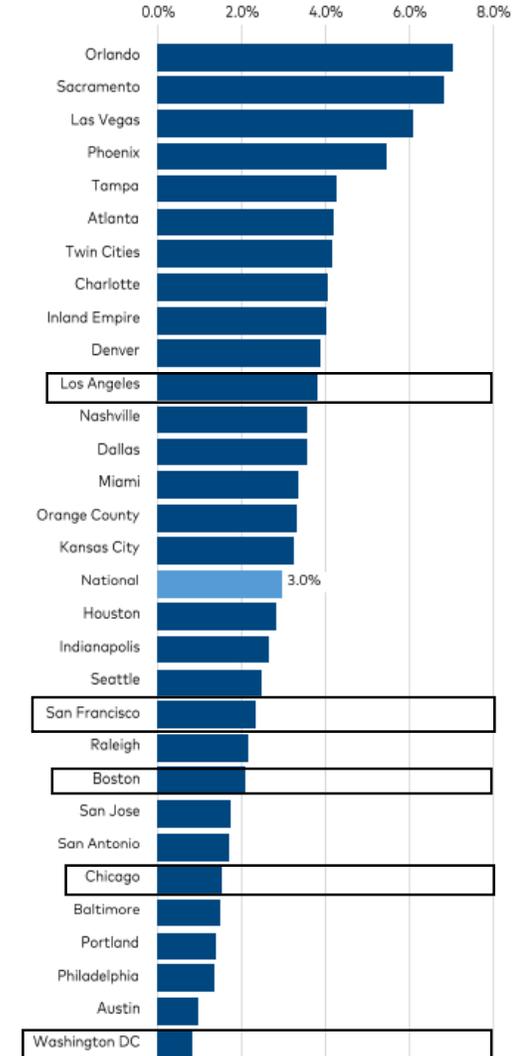
Year-Over-Year Rent Growth—
All Asset Classes



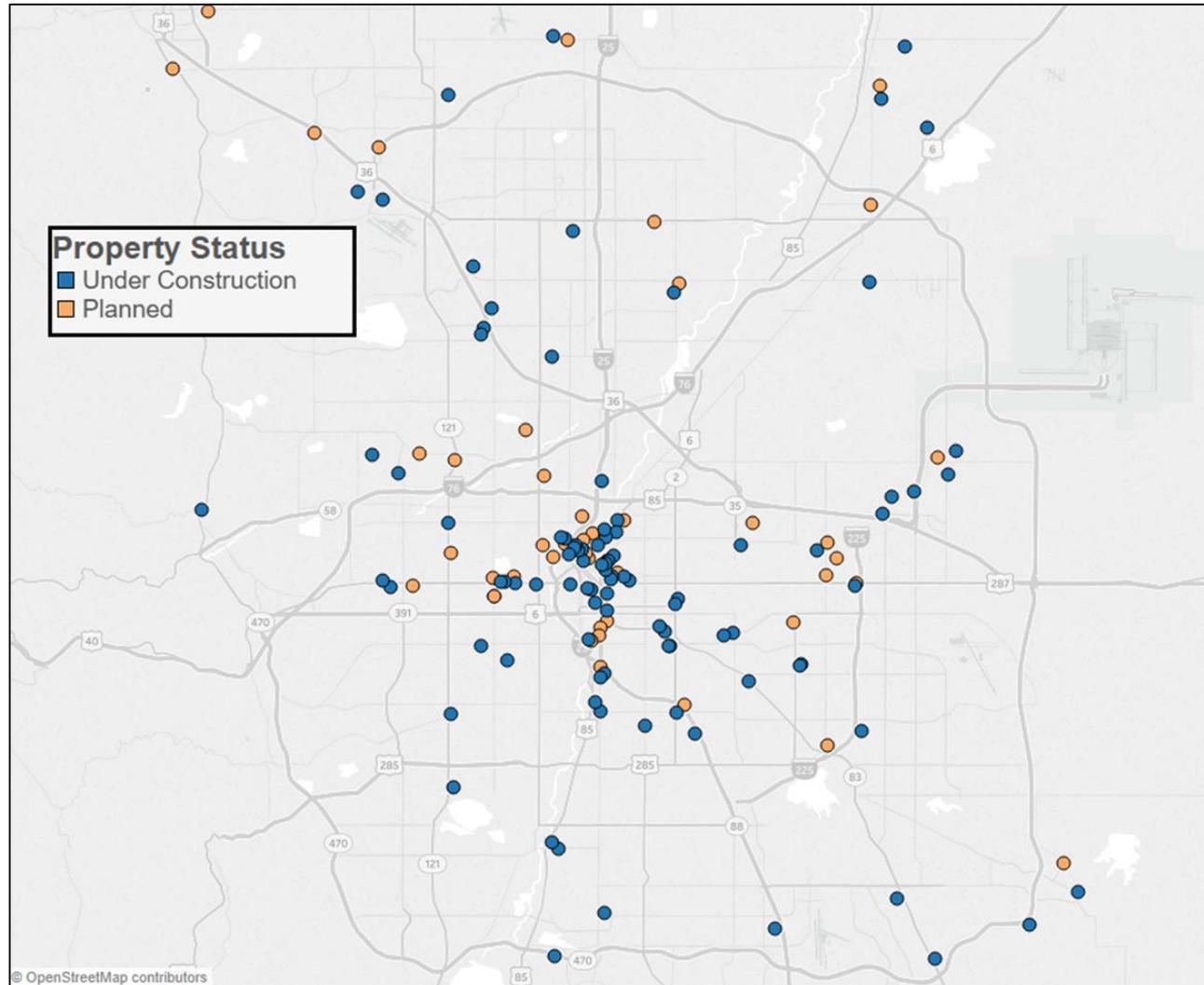
Year-Over-Year Rent Growth—
Lifestyle Asset Class



Year-Over-Year Rent Growth—
Renter-by-Necessity Asset Class

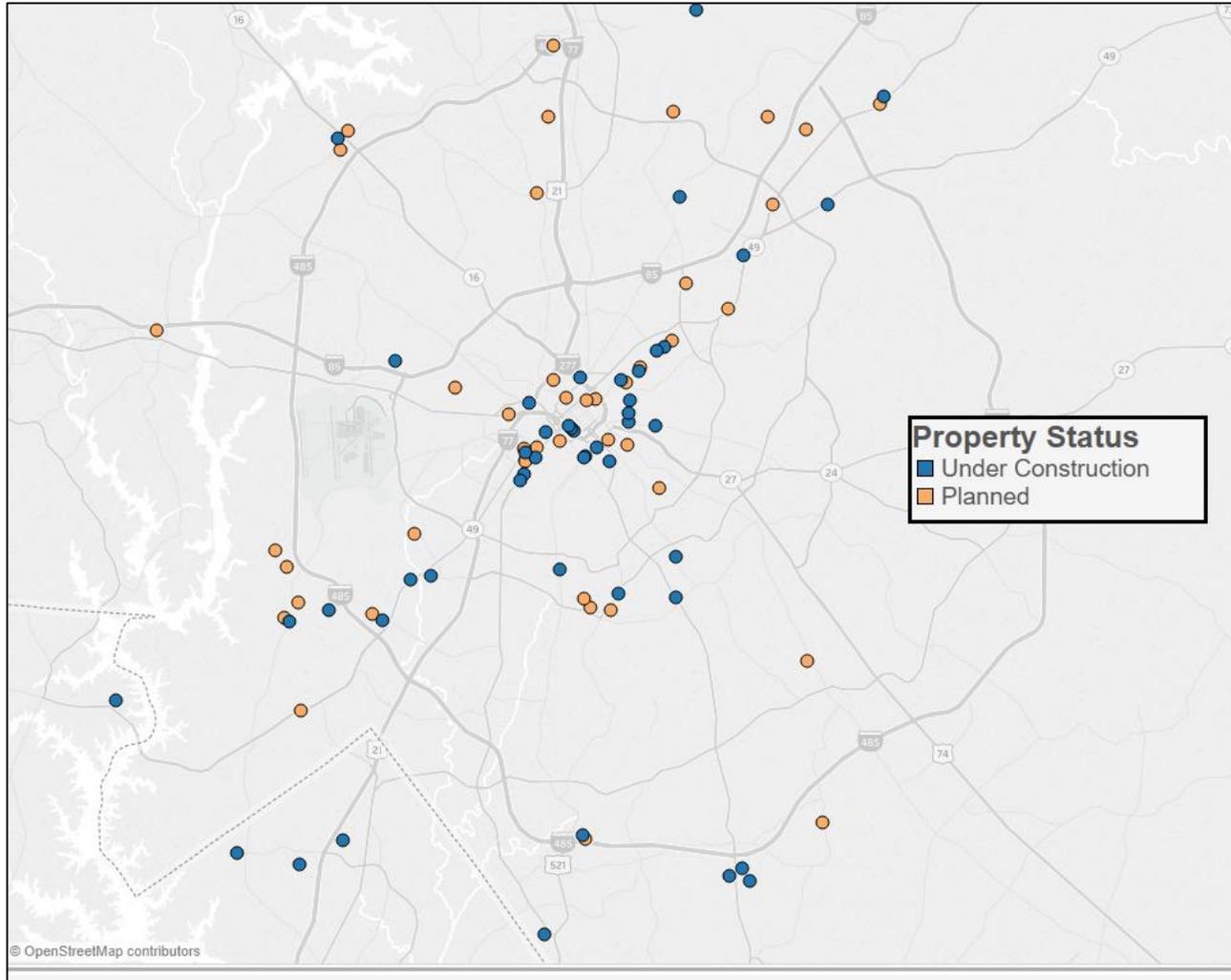


Denver May Have a Lot of Units in the Pipeline, but There are Opportunities Outside of the Urban Core



Top 20 Submarkets	# of Projects	% of Total
CBD/Five Points/North Capitol Hill	45	23.6%
College View/Ruby Hill	9	4.7%
East Colfax/Lowry Field/Stapleton	9	4.7%
Fort Collins-North	9	4.7%
Hampden/Virginia Village/Washington Virginia Vale	9	4.7%
Champion	7	3.7%
Douglas County-North	7	3.7%
Boulder	6	3.1%
Brighton	6	3.1%
Capitol Hill/Cheesman Park/Hale	6	3.1%
Broomfield/Todd Creek	5	2.6%
Longmont	5	2.6%
Windsor/Greeley West	5	2.6%
Arapahoe-Southwest	4	2.1%
Arvada	4	2.1%
Aurora-Northwest	4	2.1%
Aurora-Westcentral	4	2.1%
Fort Collins-Central	4	2.1%
Lakewood-North	4	2.1%
Northglenn/Thornton	4	2.1%

Charlotte Also Has a Heavy Development Pipeline, but Many Opportunities Still Exist



Top 20 Submarkets	# of Projects	% of Total
Southwest Charlotte	11	10.0%
Tryon Hills	8	7.3%
Second Ward	7	6.4%
Ballantyne-Providence	7	6.4%
Wedgewood	6	5.5%
Third Ward-Lakewood	6	5.5%
Foxcroft	5	4.5%
Southside Park-West Blvd	5	4.5%
UNC at Charlotte	5	4.5%
Morningside	5	4.5%
North Charlotte	4	3.6%
Huntersville	4	3.6%
Fort Mill	4	3.6%
Colonial Village-Montclair	3	2.7%
Hidden Valley-Oak Forest	3	2.7%
Uptown	3	2.7%
Belmont	3	2.7%
Rock Hill-East	3	2.7%
Kannapolis	2	1.8%
Concord-West	2	1.8%

Over the Next Five Years, The Risk of Oversupply Becomes Slightly Less Concerning

Market	Current Inventory (000's units)	5-Year Supply Growth	5-Year Demand Growth	Net %	Excess Units
Seattle	231	14.3%	10.0%	(4.3%)	11,017
Charlotte	163	9.4%	6.4%	(2.9%)	5,326
Dallas	709	6.6%	4.5%	(2.2%)	17,247
St Louis	120	6.6%	4.6%	(2.0%)	2,711
Phoenix	295	5.4%	3.9%	(1.5%)	4,907
Miami	275	14.3%	13.0%	(1.3%)	5,228
Twin Cities	199	6.9%	5.8%	(1.1%)	2,533
Washington DC	510	8.6%	7.6%	(1.0%)	6,860
Pittsburgh	89	3.0%	2.2%	(0.8%)	815
Boston	214	11.6%	10.8%	(0.7%)	2,409
Denver	252	10.9%	10.3%	(0.6%)	2,912
Cincinnati	108	4.4%	3.9%	(0.5%)	778
Philadelphia	288	5.2%	4.7%	(0.5%)	2,047
Kansas City	149	5.9%	5.4%	(0.5%)	1,108
Atlanta	424	4.1%	3.9%	(0.2%)	1,887

Market	Current Inventory (000's units)	5-Year Supply Growth	5-Year Demand Growth	Net %	Excess Units
San Francisco	248	14.0%	14.2%	0.2%	1,053
San Antonio	189	4.8%	5.1%	0.3%	197
Portland	147	6.8%	7.3%	0.5%	(187)
Baltimore	217	2.7%	3.4%	0.7%	(997)
Orlando	204	6.2%	7.4%	1.2%	(1,860)
Detroit	208	1.3%	3.5%	2.2%	(4,234)
Sacramento	128	3.8%	6.2%	2.3%	(2,679)
Tampa	206	5.2%	7.6%	2.4%	(4,131)
Las Vegas	169	2.9%	5.3%	2.4%	(3,569)
New York	1,000	9.9%	13.1%	3.2%	(30,173)
Chicago	333	7.8%	11.5%	3.7%	(10,166)
Houston	629	1.6%	5.8%	4.1%	(23,739)
San Diego	181	4.3%	9.9%	5.7%	(9,586)
Inland Empire	150	2.1%	9.1%	6.9%	(9,874)
Los Angeles	410	14.5%	21.9%	7.4%	(27,171)

***Markets with severe shortages will elicit a greater supply response**

*Demand is a function of renter households growth and apartments as a % of the rental market

Source: Moody's Analytics; U.S. Bureau of Labor Statistics (BLS); Yardi® Matrix

Office Supply and Demand in the Next Two Years are Fairly in Balance

Market	Current Inventory (mill. sq. ft.)	2-Year Supply Growth	2-Year Demand Growth	Net %	Current Vacancy	Market	Current Inventory (mill. sq. ft.)	2-Year Supply Growth	2-Year Demand Growth	Net %	Current Vacancy
Seattle	128	5.6%	4.2%	(1.4%)	9.4%	San Diego	79	0.5%	2.6%	-2.1%	12.0%
Charlotte	63	4.3%	3.5%	(0.7%)	14.0%	Denver	141	0.7%	2.8%	-2.1%	13.7%
Portland	55	5.3%	5.0%	(0.3%)	11.5%	Raleigh-Durham	53	2.3%	4.7%	-2.4%	11.9%
South Bay Area	201	2.9%	2.8%	0.0%	17.3%	Sacramento	61	0.2%	2.7%	-2.4%	13.2%
San Francisco	154	1.9%	1.9%	0.0%	9.5%	San Antonio	43	2.1%	4.8%	-2.7%	14.6%
Manhattan	477	2.0%	2.0%	0.0%	8.3%	Orange County	99	0.2%	3.0%	-2.8%	10.7%
Los Angeles	260	1.6%	2.1%	-0.5%	14.6%	Phoenix	115	1.2%	4.5%	-3.3%	18.9%
Orlando	48	4.6%	5.8%	-1.2%	11.9%	Tampa	60	1.7%	5.6%	-3.9%	11.6%
Boston	214	0.8%	2.0%	-1.2%	11.0%	Miami	59	0.0%	4.1%	-4.1%	13.6%
Inland Empire	20	0.6%	1.9%	-1.3%	13.1%	Ft Lauderdale	33	0.0%	4.2%	-4.2%	14.5%
Atlanta	181	1.8%	3.1%	-1.3%	16.2%	West Palm Beach	27	0.0%	4.9%	-4.9%	14.2%
Dallas	268	3.6%	5.5%	-1.9%	19.6%	Austin	65	1.0%	5.9%	-5.0%	10.2%
Philadelphia	176	0.3%	2.4%	-2.1%	11.6%	Houston	232	0.7%	6.0%	-5.3%	22.0%

*Demand is office-using employment growth

Source: Moody's Analytics; U.S. Bureau of Labor Statistics (BLS); Yardi® Matrix



Secondary and Tertiary Markets Will Experience the Most Rent Growth Over the Next Couple Years

Market	YoY March 2017-2018	2018 (F)	2019 (F)	2020 (F)	Market	YoY March 2017-2018	2018 (F)	2019 (F)	2020 (F)
Reno	10.3%	9.5%	8.2%	7.3%	Salt Lake City	3.8%	4.9%	4.7%	4.5%
Sacramento	6.4%	7.2%	6.5%	6.2%	Las Vegas	5.2%	4.8%	4.1%	3.5%
Tacoma	7.0%	6.6%	5.9%	5.4%	North Central Florida	4.5%	4.5%	4.0%	3.8%
Colorado Springs	4.8%	6.5%	4.0%	3.8%	Orlando	7.0%	4.5%	UR	UR
Spokane	3.5%	5.7%	5.2%	4.0%	Los Angeles	3.9%	4.5%	4.0%	4.1%
Central Valley	4.8%	5.7%	5.2%	4.5%	Columbus	3.1%	4.3%	3.6%	3.2%
Eugene	4.2%	5.0%	4.8%	4.6%	Jacksonville	4.4%	4.1%	3.4%	2.9%
Boise	6.3%	5.0%	4.5%	3.4%	Tampa	4.2%	3.7%	3.4%	3.4%
Phoenix	4.3%	5.0%	UR	UR	Atlanta	3.1%	3.7%	UR	UR
Inland Empire	4.4%	4.9%	4.6%	4.4%	Twin Cities	3.2%	3.7%	3.7%	3.2%

*UR = Under Review: Phoenix, Orlando and Atlanta forecasted rent growth for 2019 & 2020 under review. Data ranked by 2018 forecast values

Source: Yardi®Matrix

So What Now?

- Overall, U.S. macroeconomic conditions are very good
- Although multi-family fundamentals are favoring secondary and tertiary markets, these are more volatile during downturns, so your capital structure needs to reflect this
- It takes time to become an established tech city, and we can see some markets in the early stages of this process now – allowing multiple points of entry
- Supply is outpacing demand in a handful of markets – increases importance of location selection within markets and submarkets

Contact Information

Thank you! We are happy to answer any questions. Please contact:

Jeff Adler

Vice President & General Manager, Yardi Matrix

Jeff.Adler@Yardi.com, 1-800-866-1124 x2403

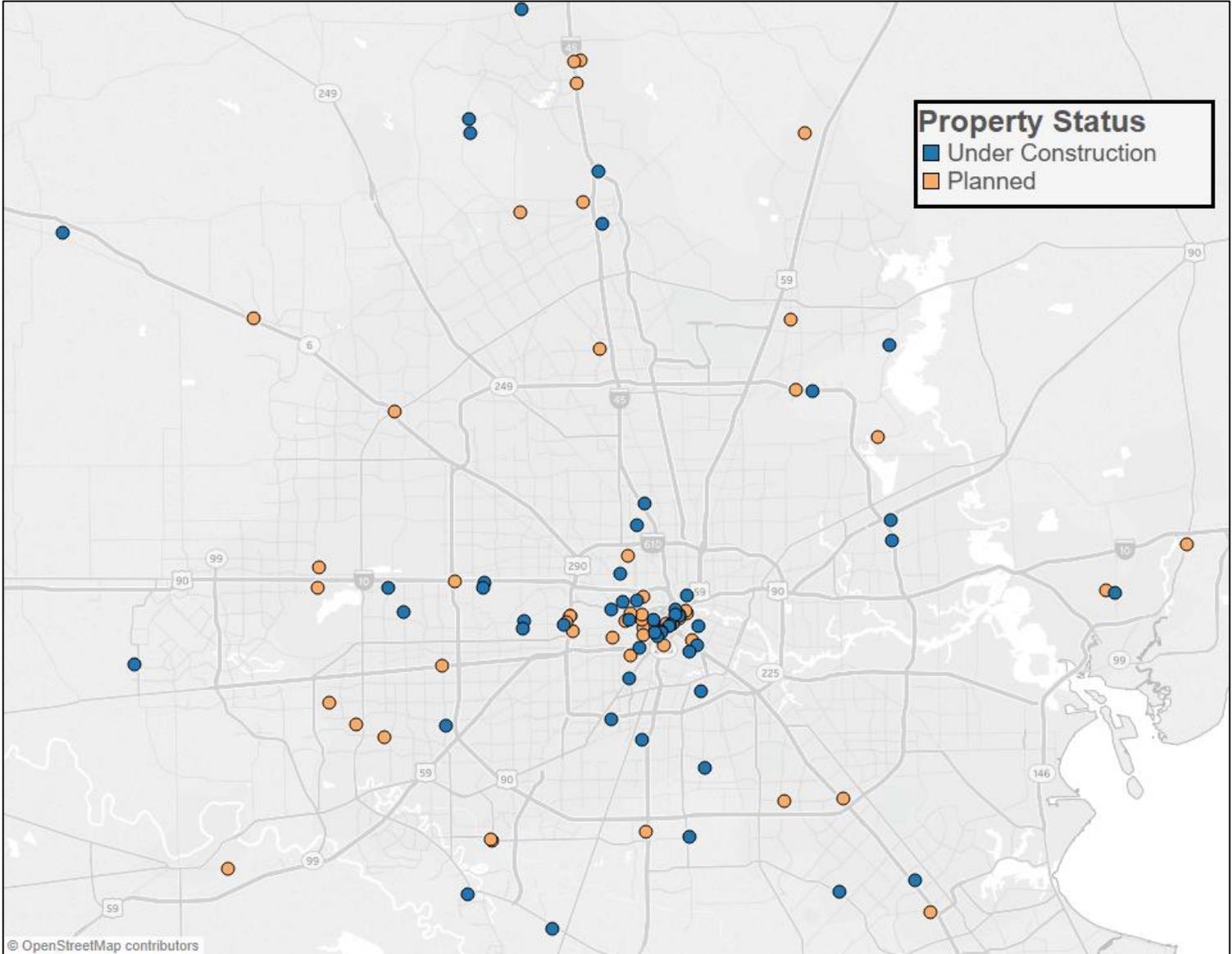
Jack Kern

Director of Research and Publications, Yardi Matrix

Jack.Kern@Yardi.com, 1-800-866-1124 x2444

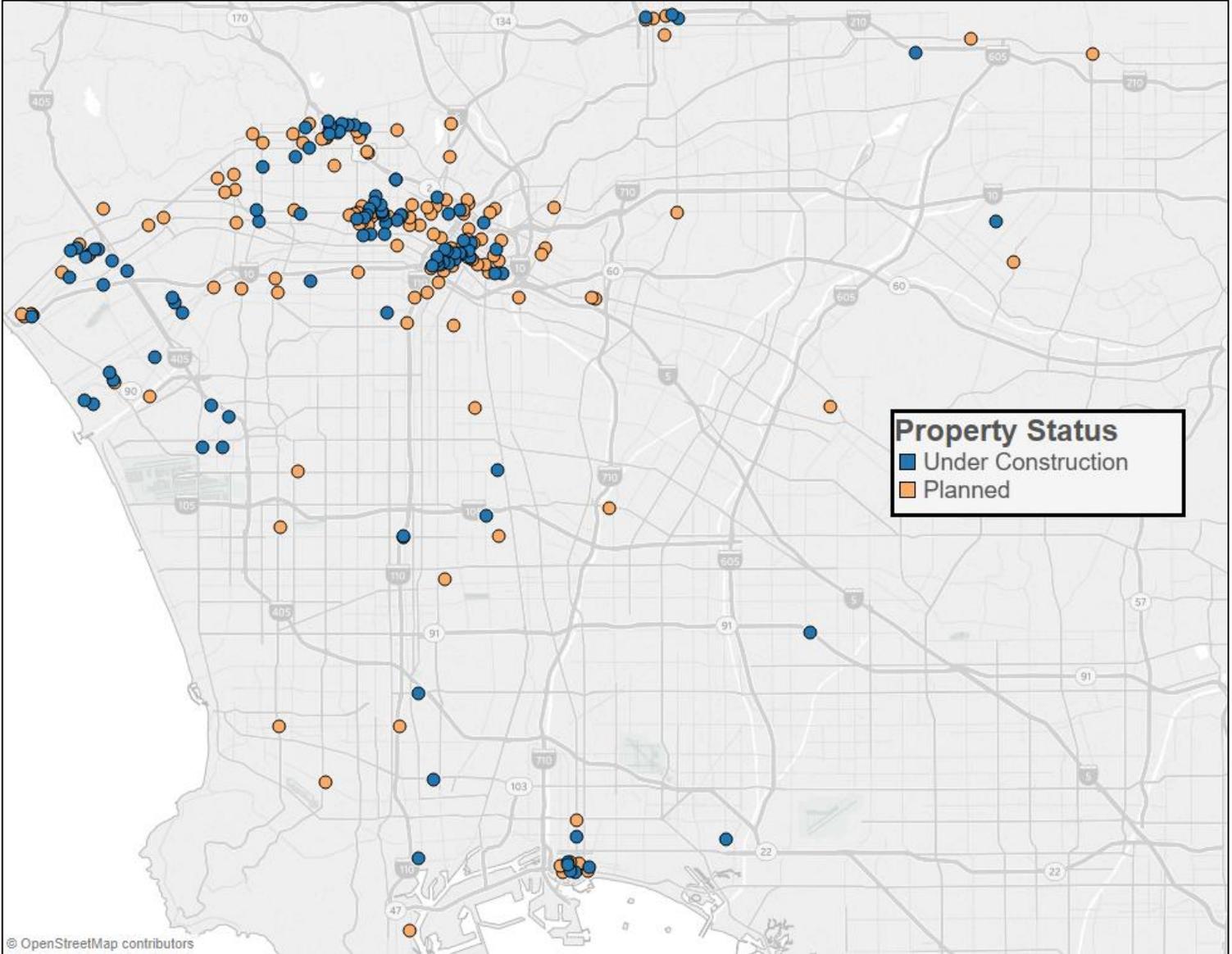
Appendix

Houston Development Pipeline



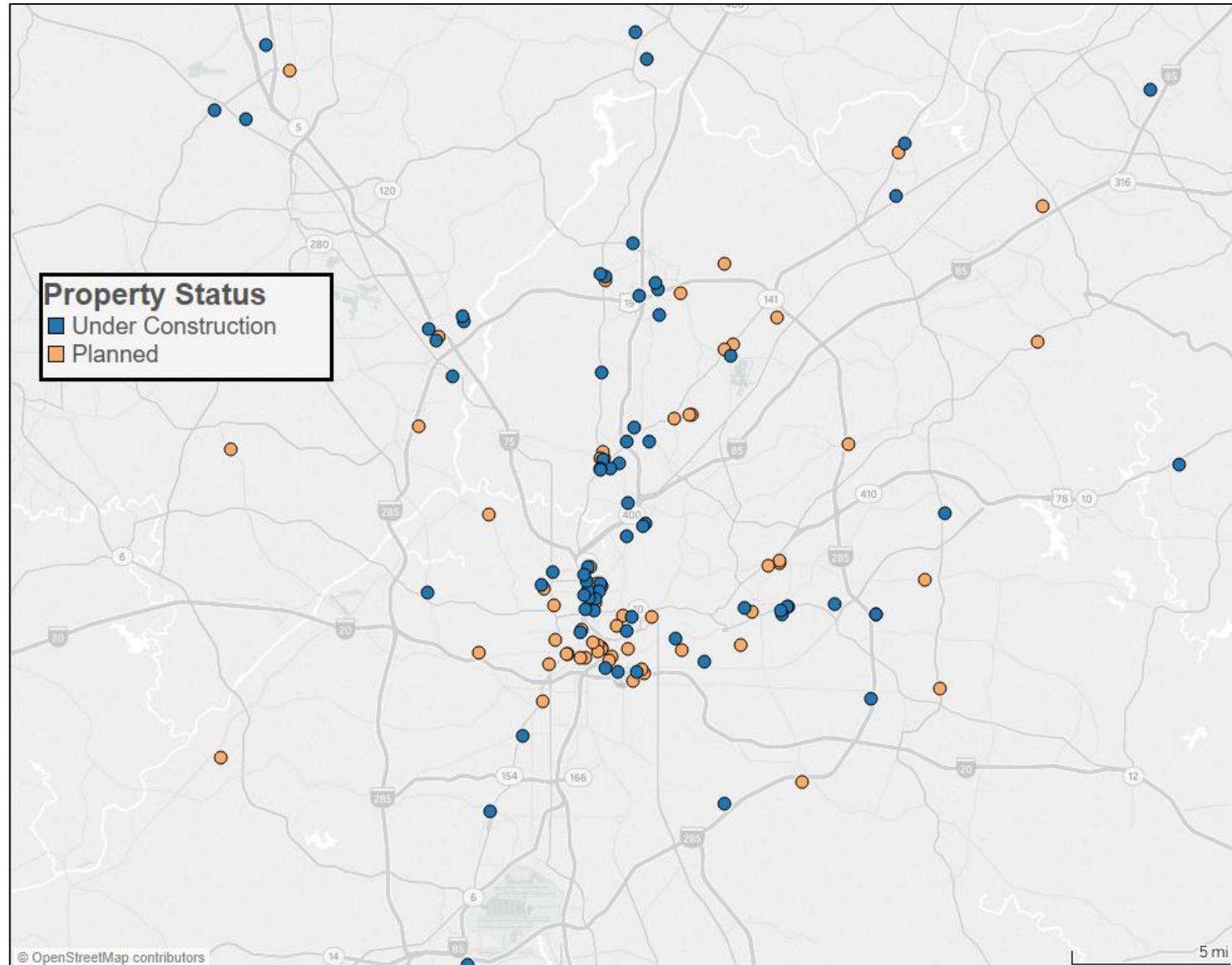
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Los Angeles Development Pipeline

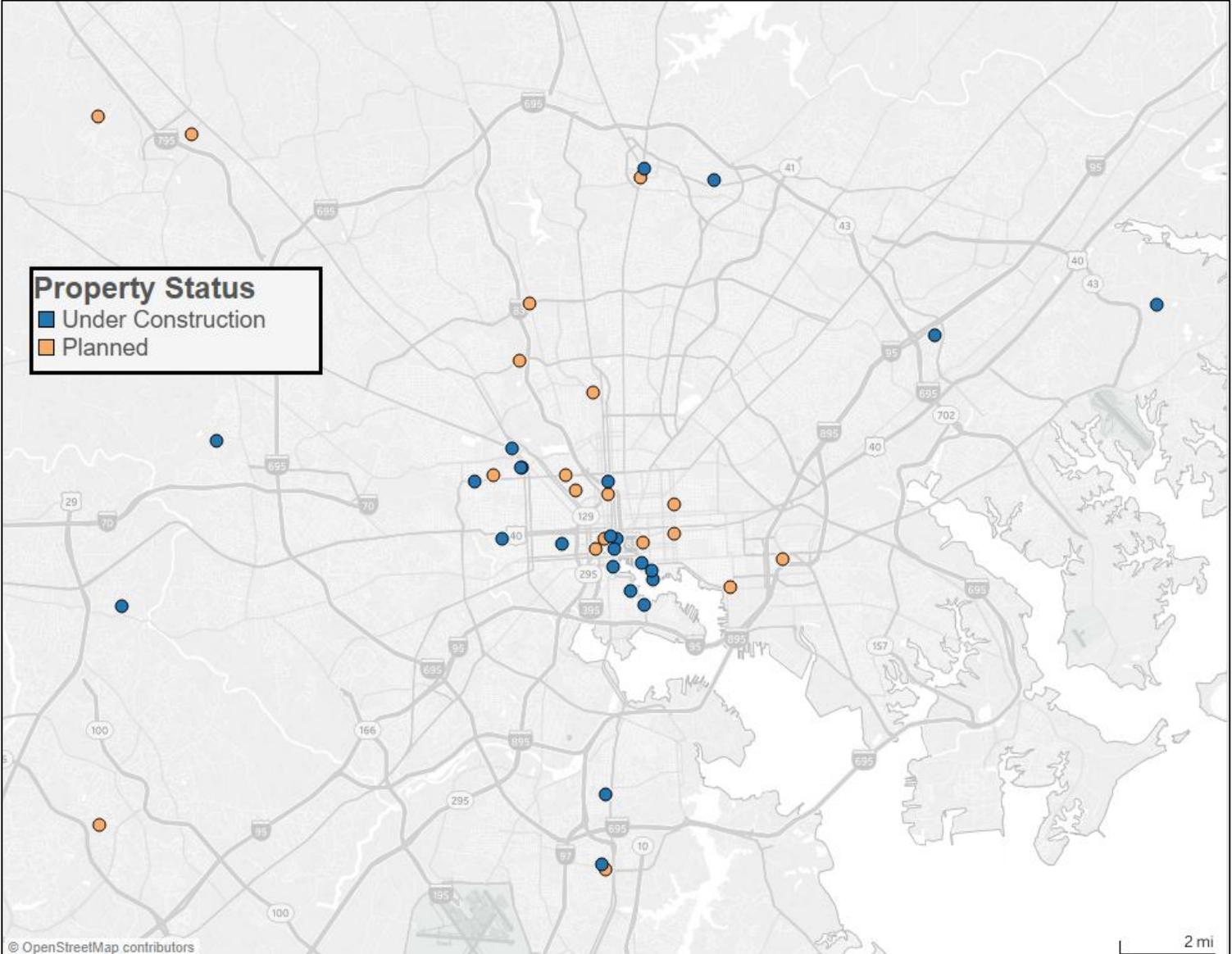


Source: Yardi®Matrix; Tableau

Atlanta Development Pipeline

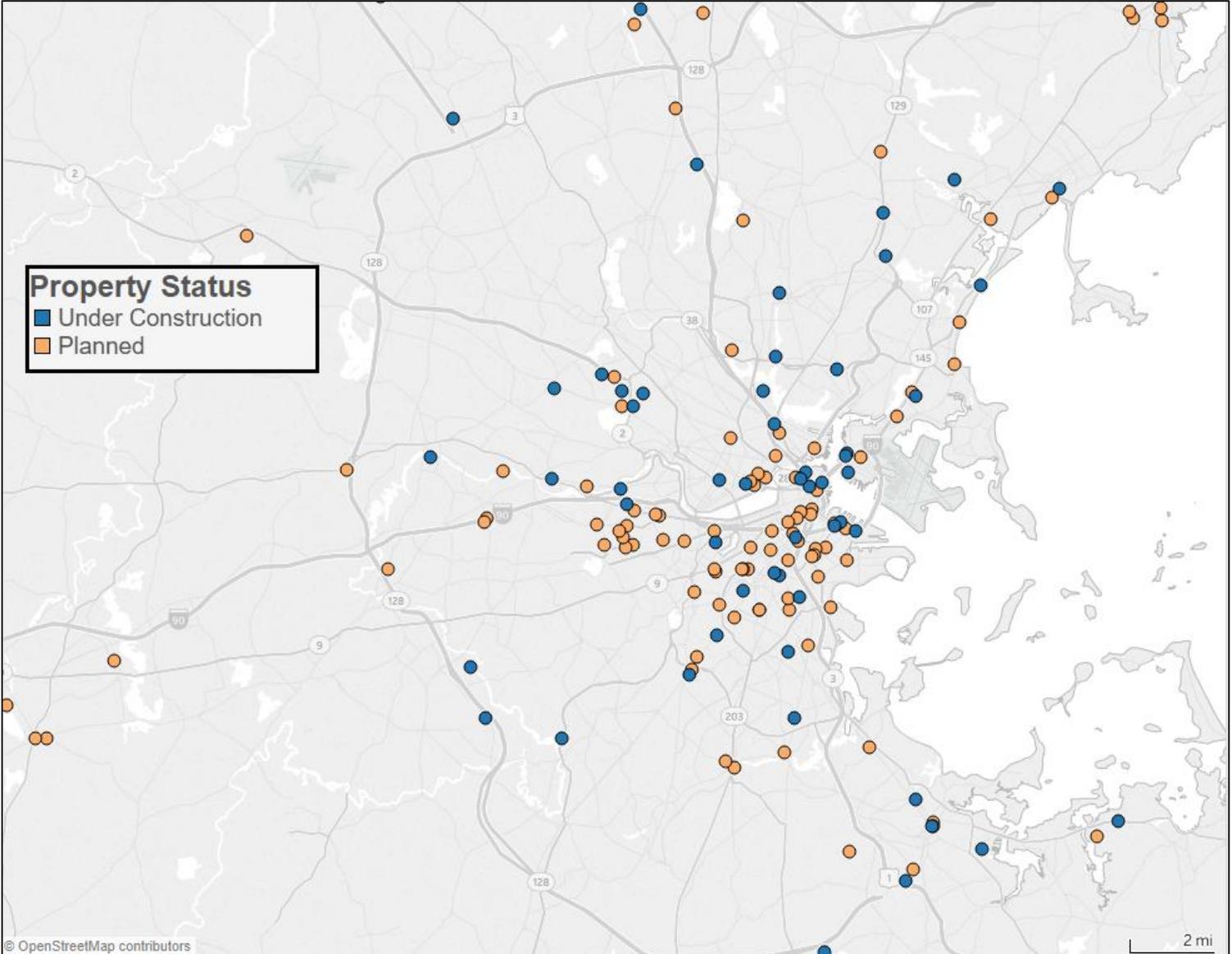


Baltimore Development Pipeline



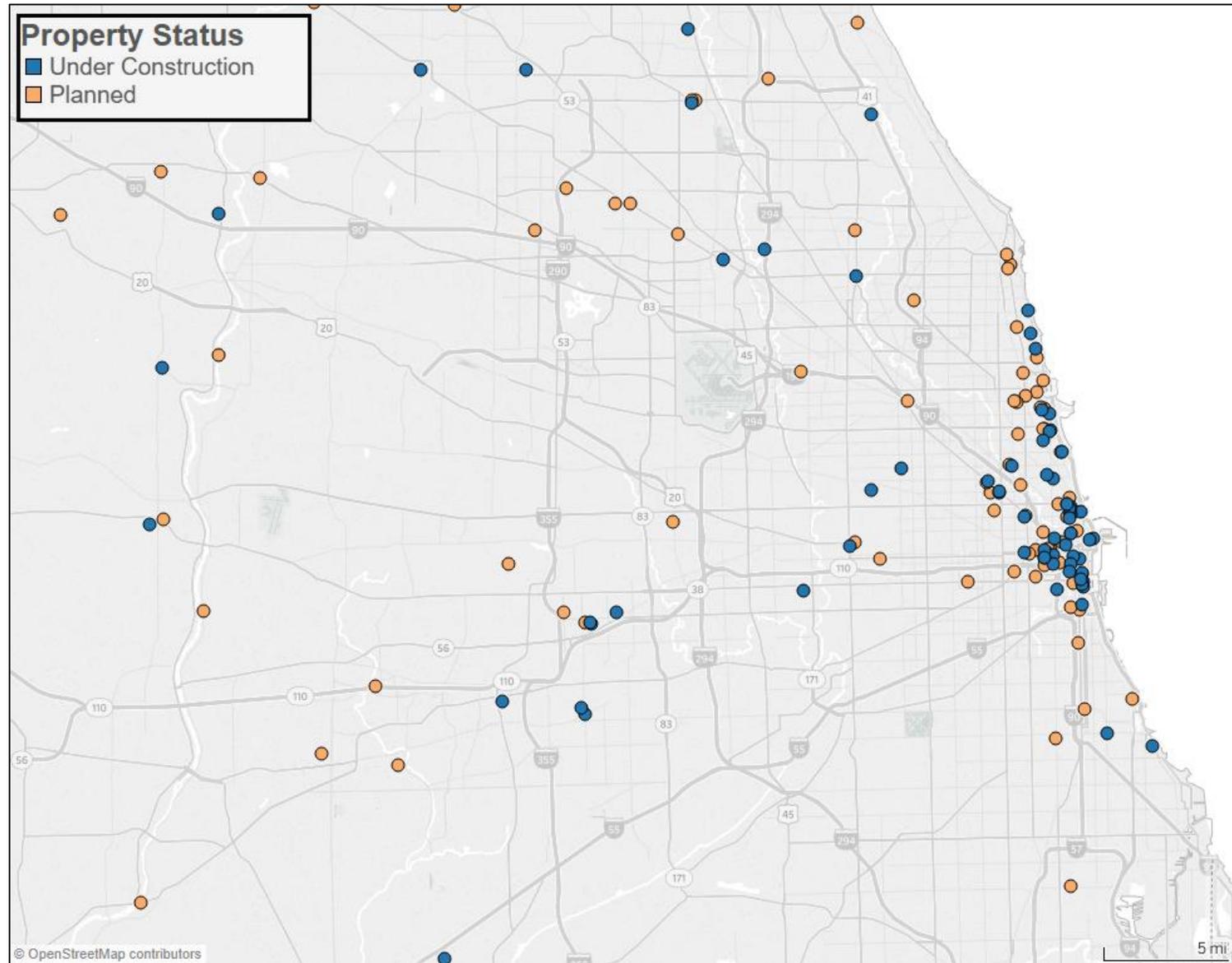
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Boston Development Pipeline

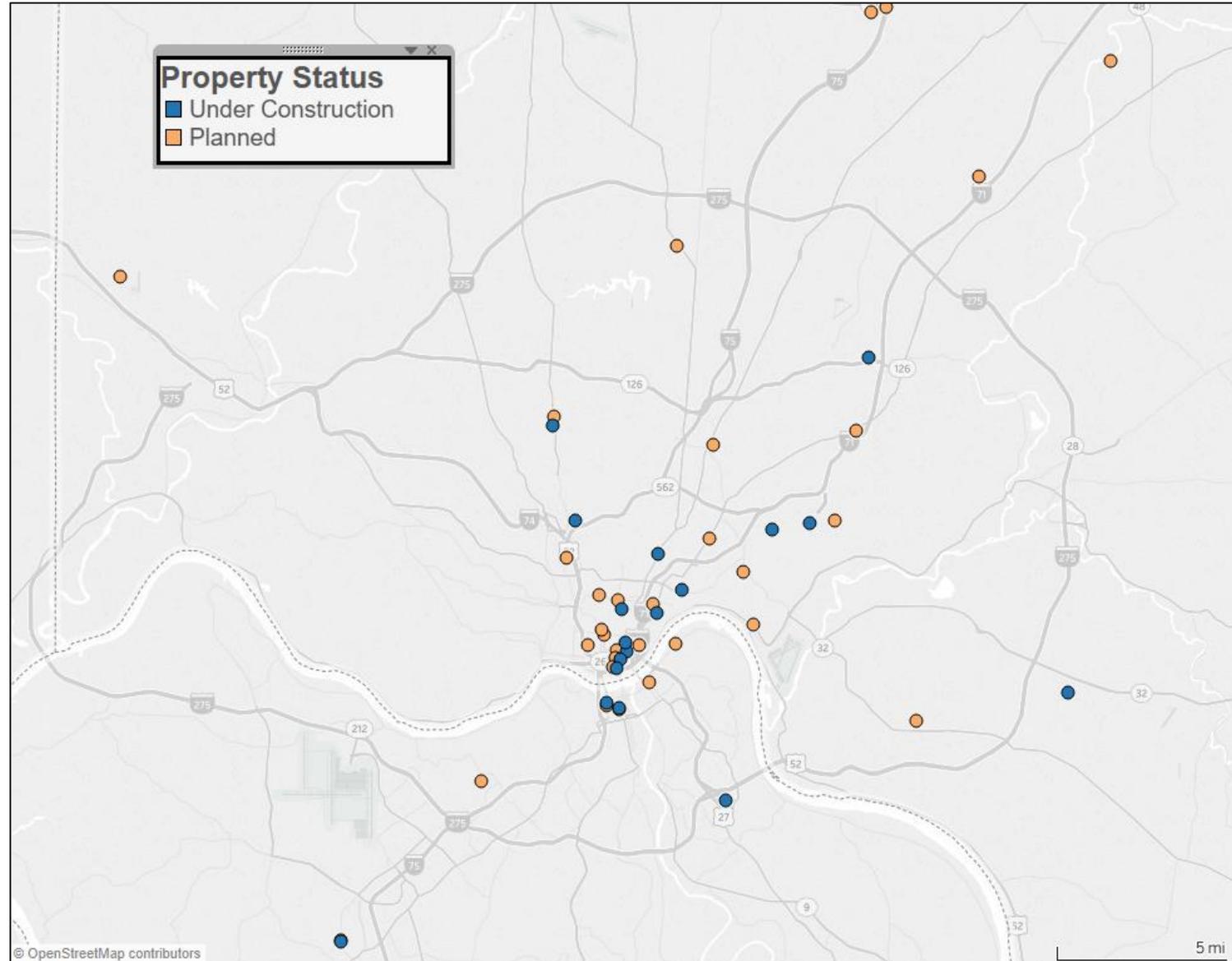


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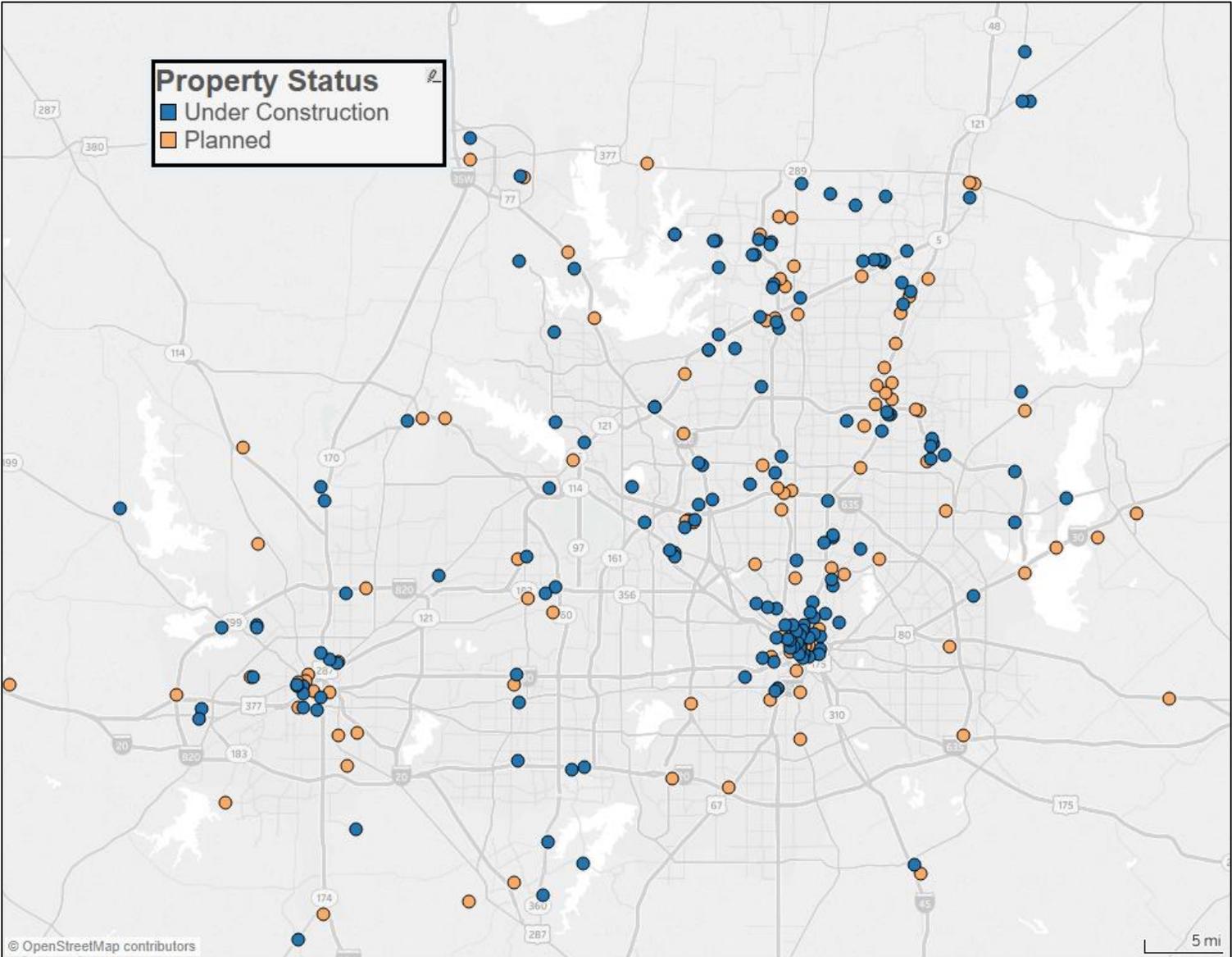
Chicago Development Pipeline



Cincinnati Development Pipeline

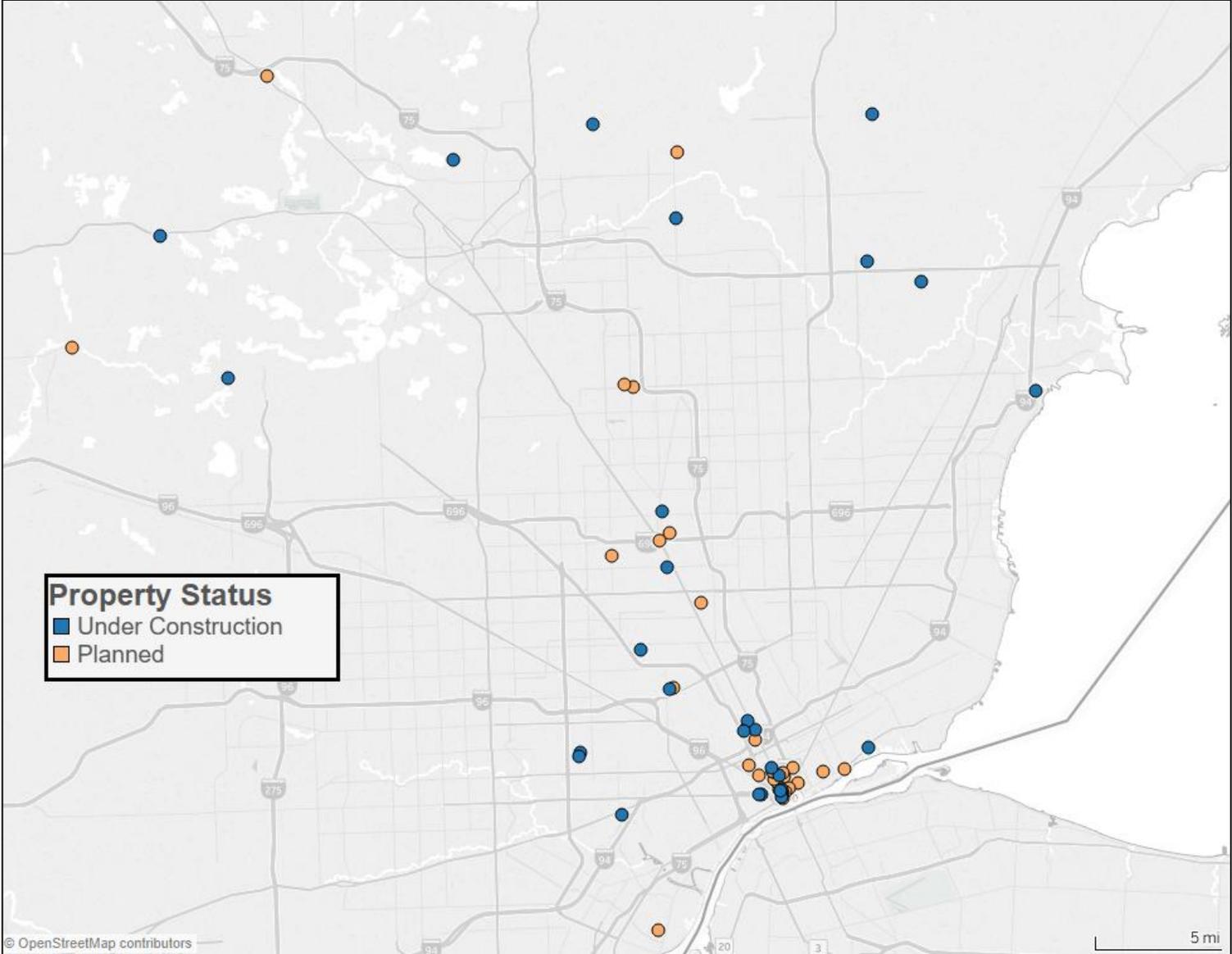


Dallas – Fort Worth Development Pipeline



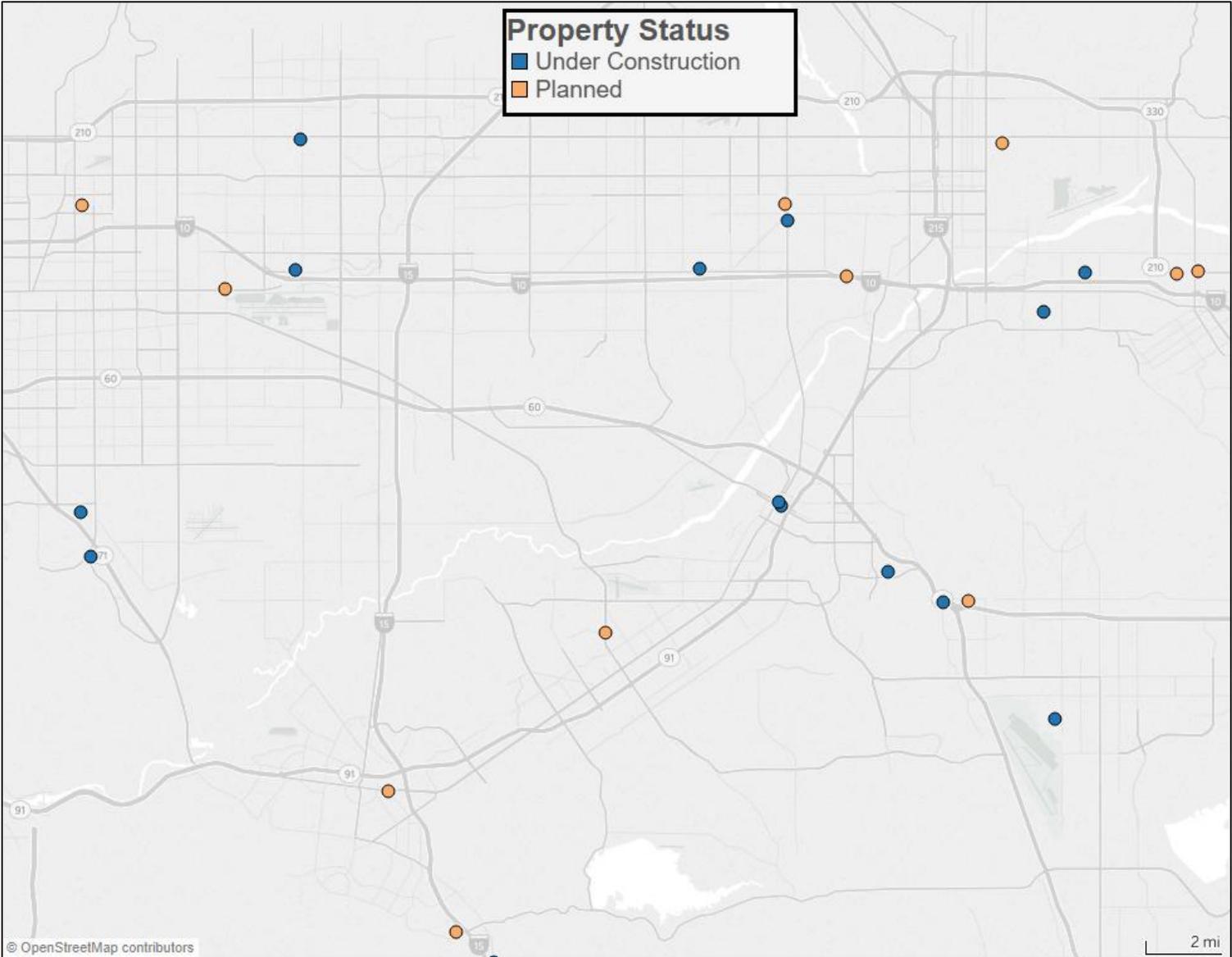
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Detroit Development Pipeline



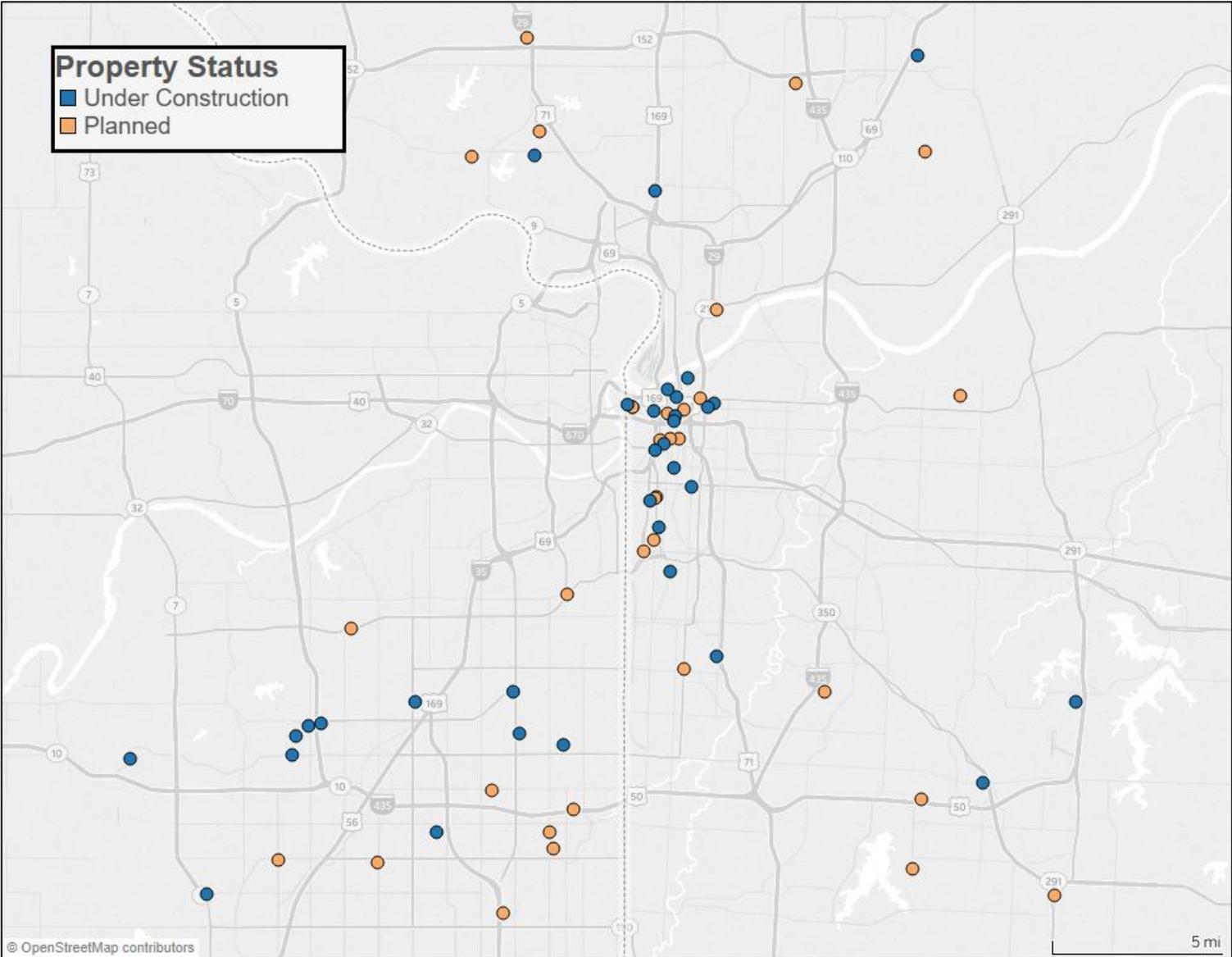
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Inland Empire Development Pipeline



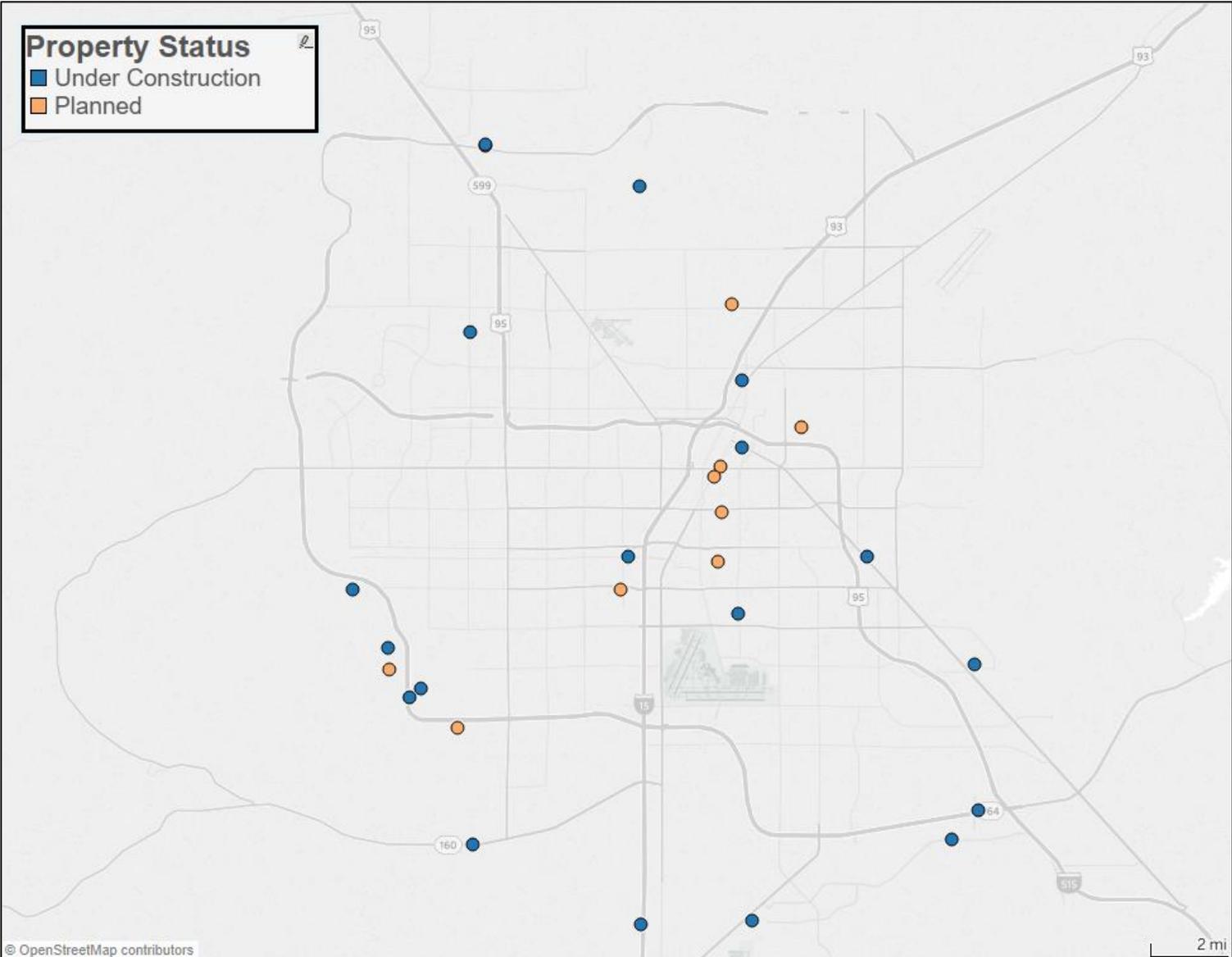
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Kansas City Development Pipeline



Source: Yardi®Matrix; Tableau

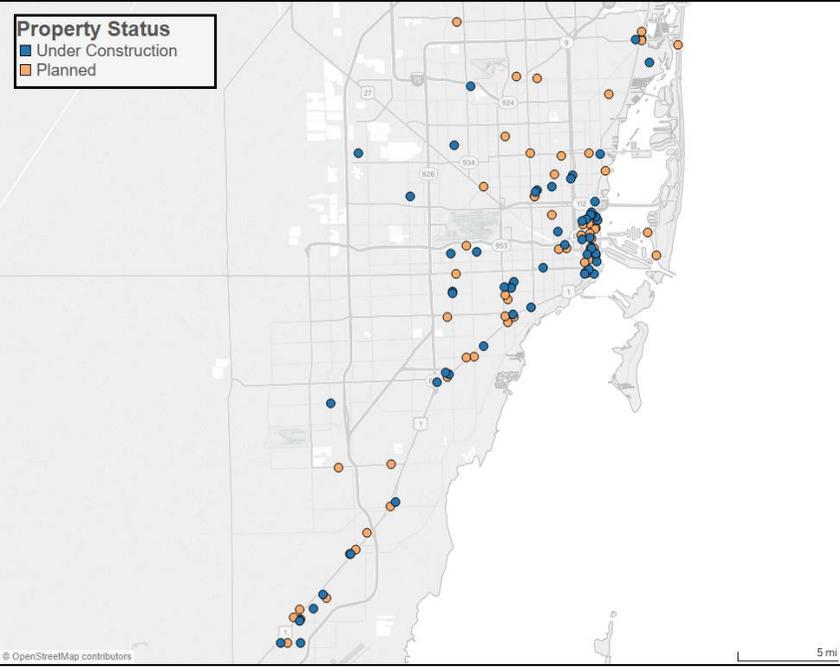
Las Vegas Development Pipeline



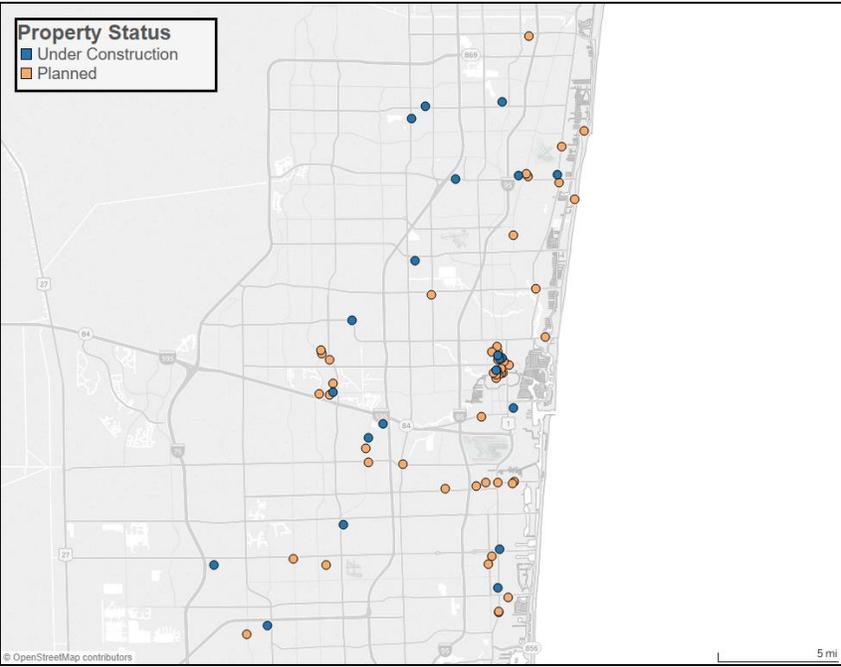
Source: Yardi® Matrix; Tableau

Miami – Ft. Lauderdale – West Palm Beach/Boca Raton Development Pipelines

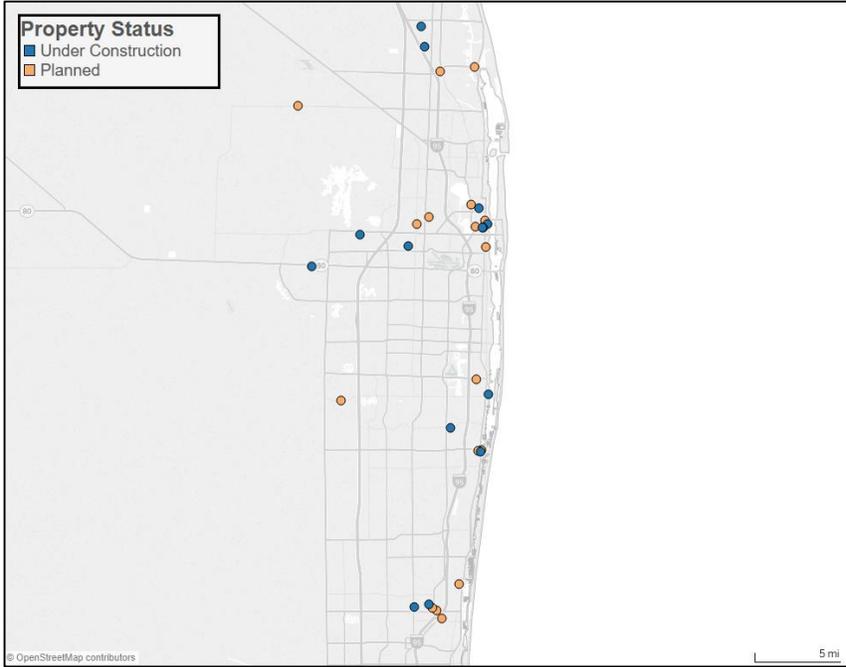
Miami



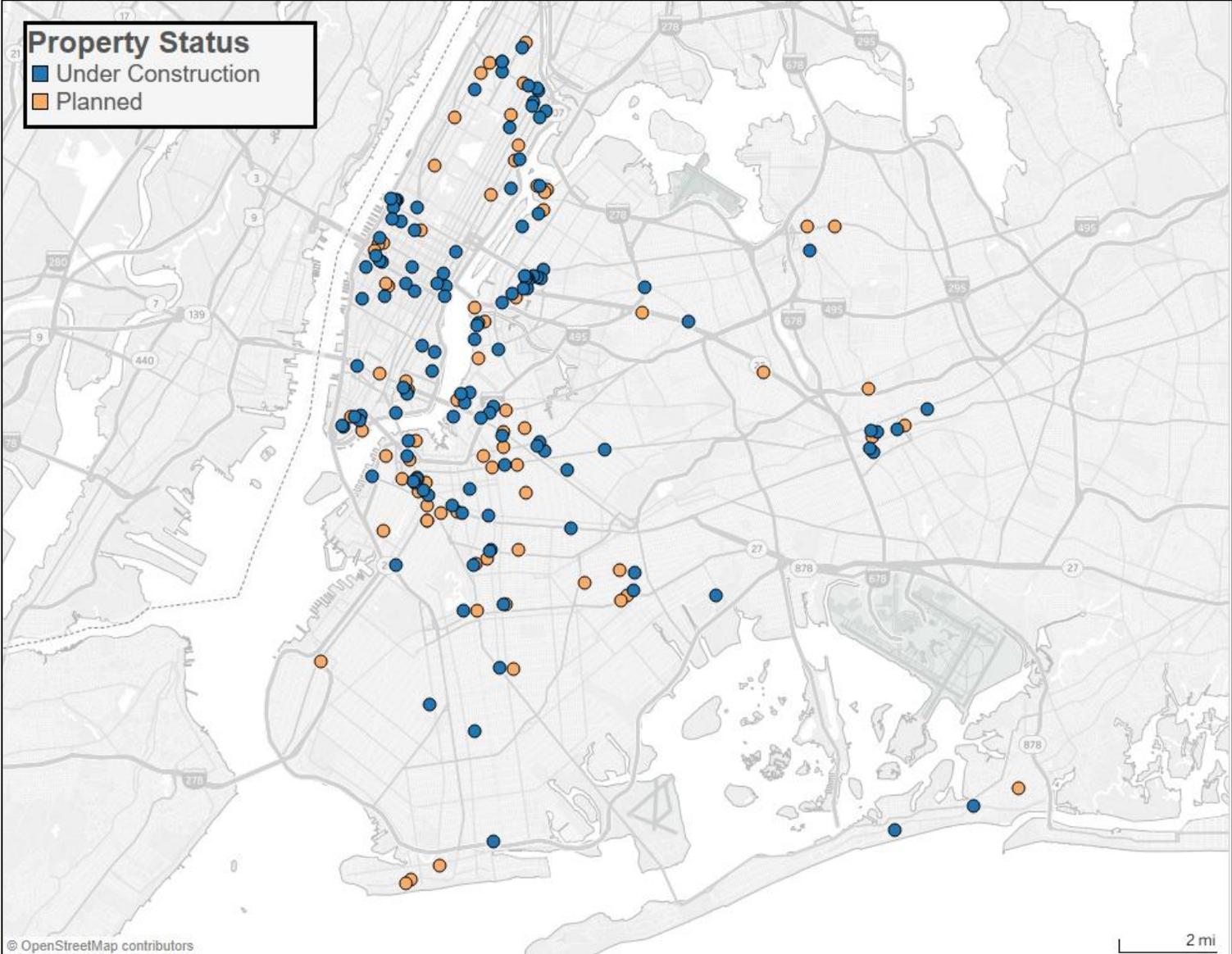
Ft. Lauderdale



West Palm Beach – Boca Raton

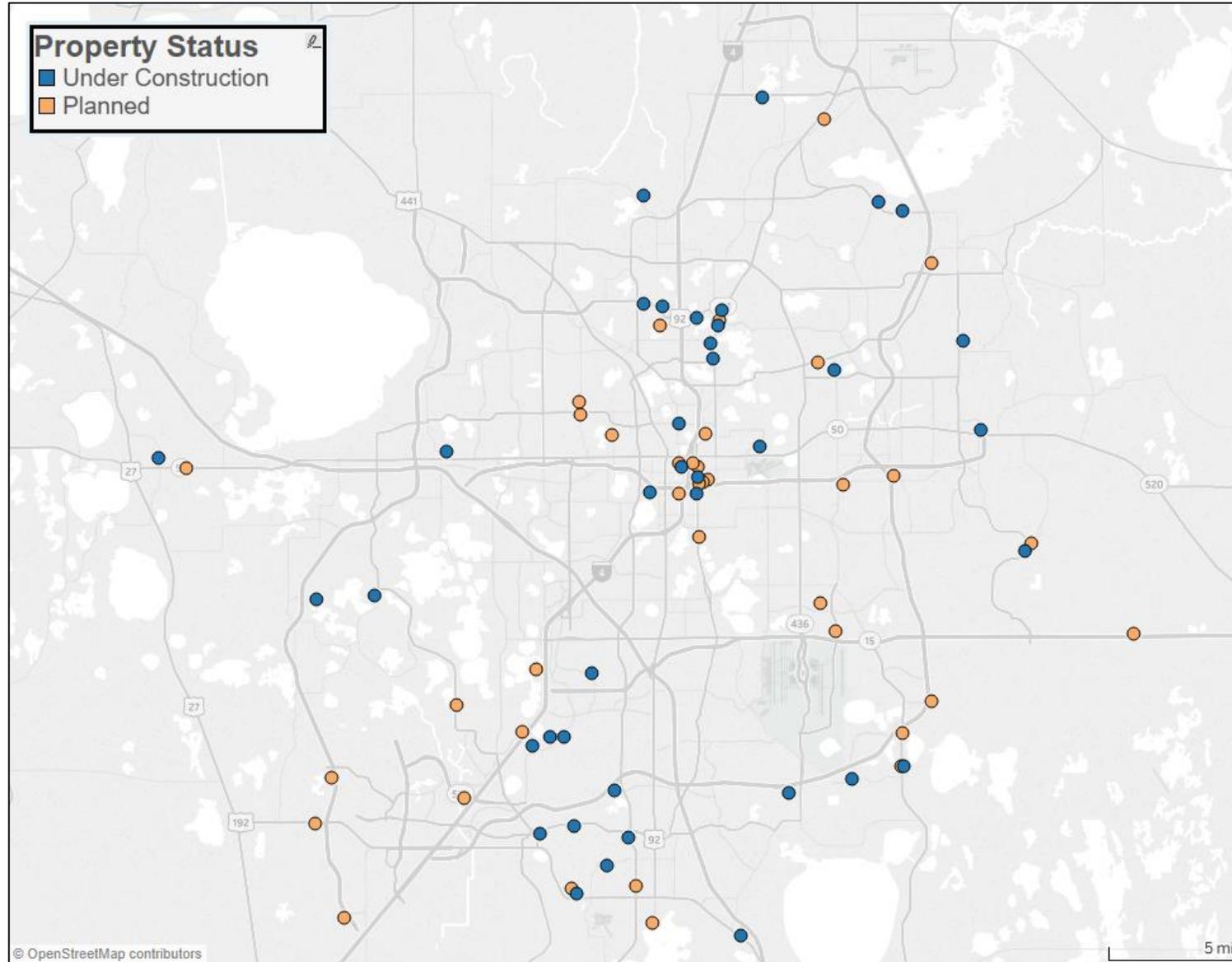


New York City Development Pipeline

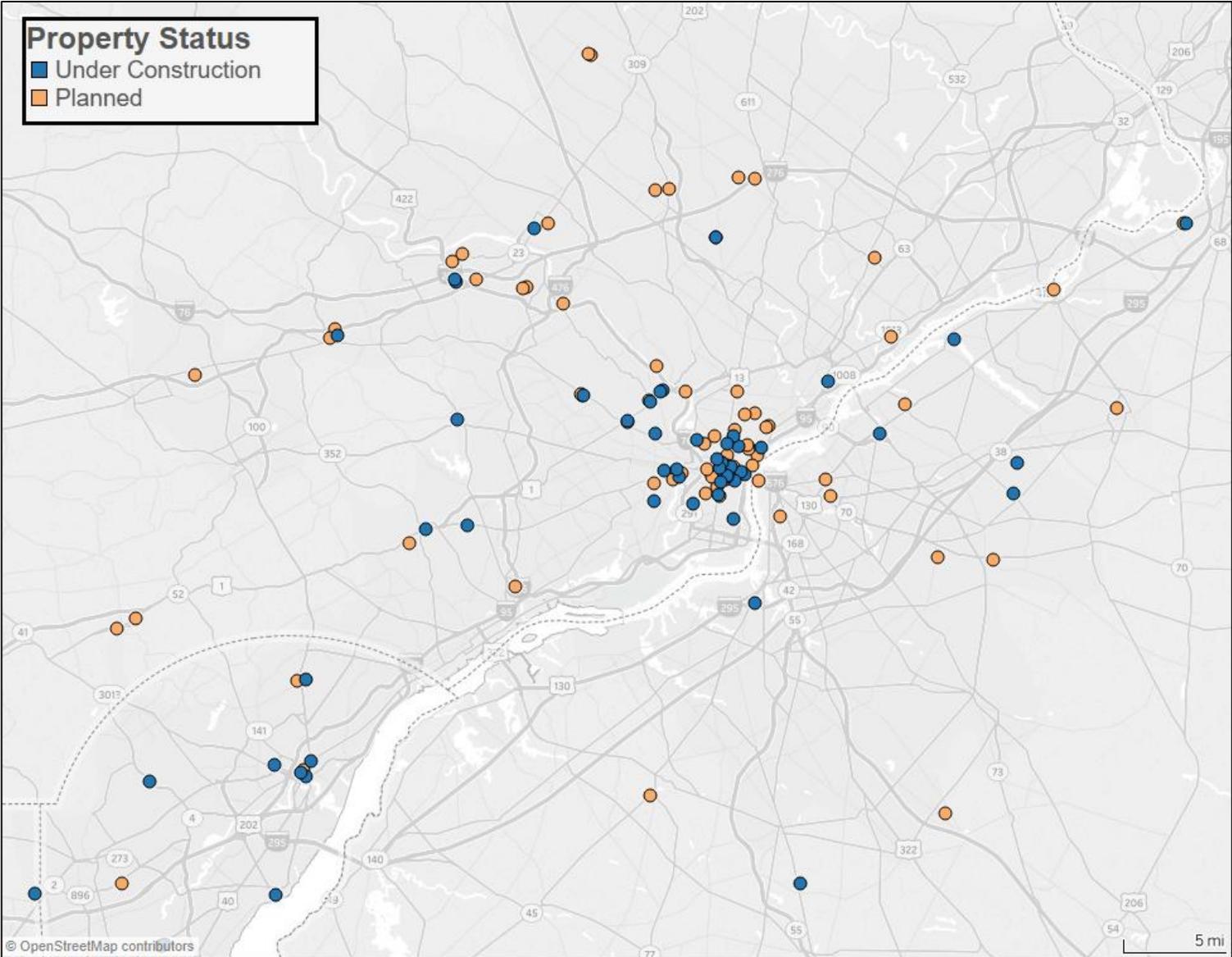


Source: Yardi®Matrix; Tableau

Orlando Development Pipeline

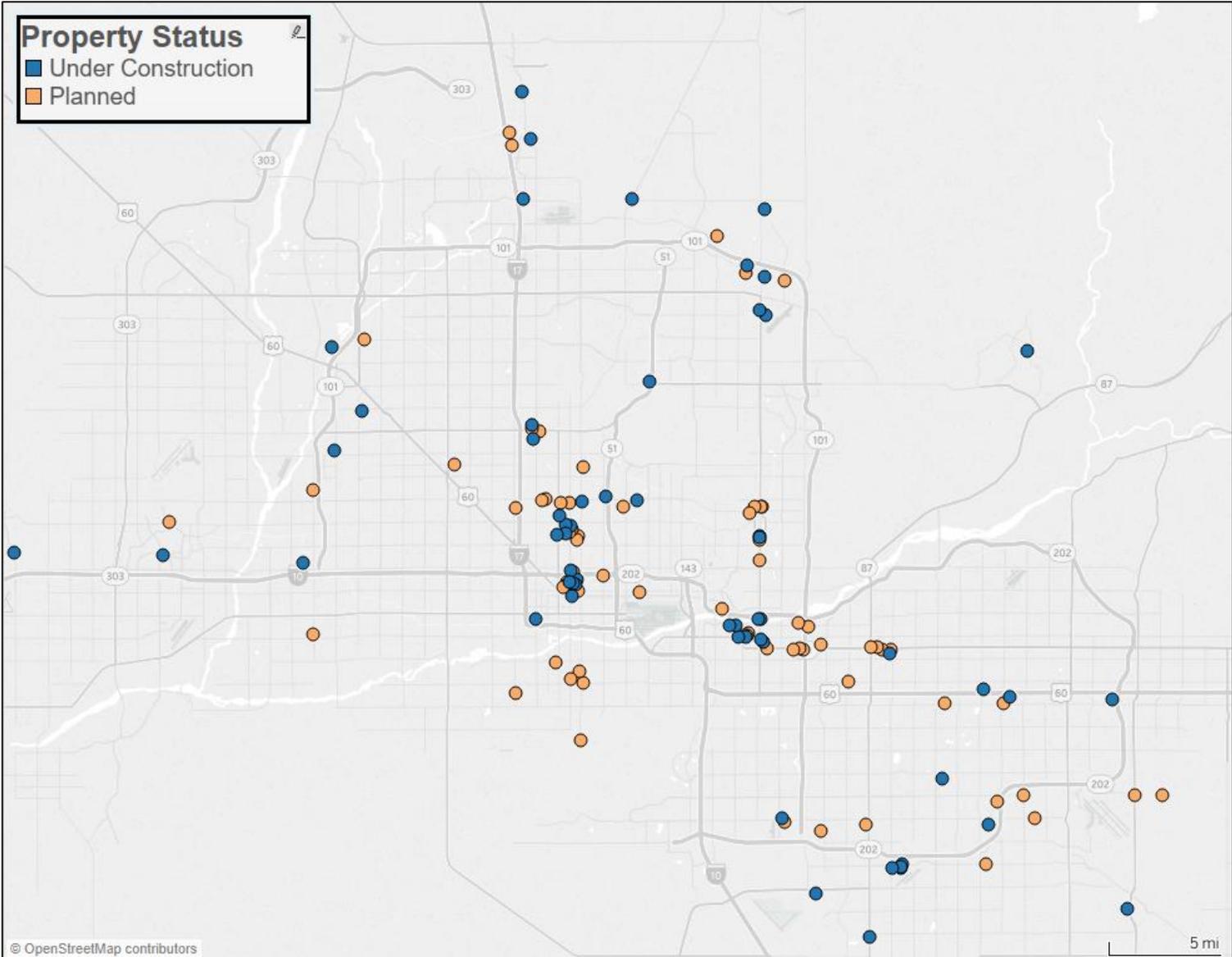


Philadelphia Development Pipeline



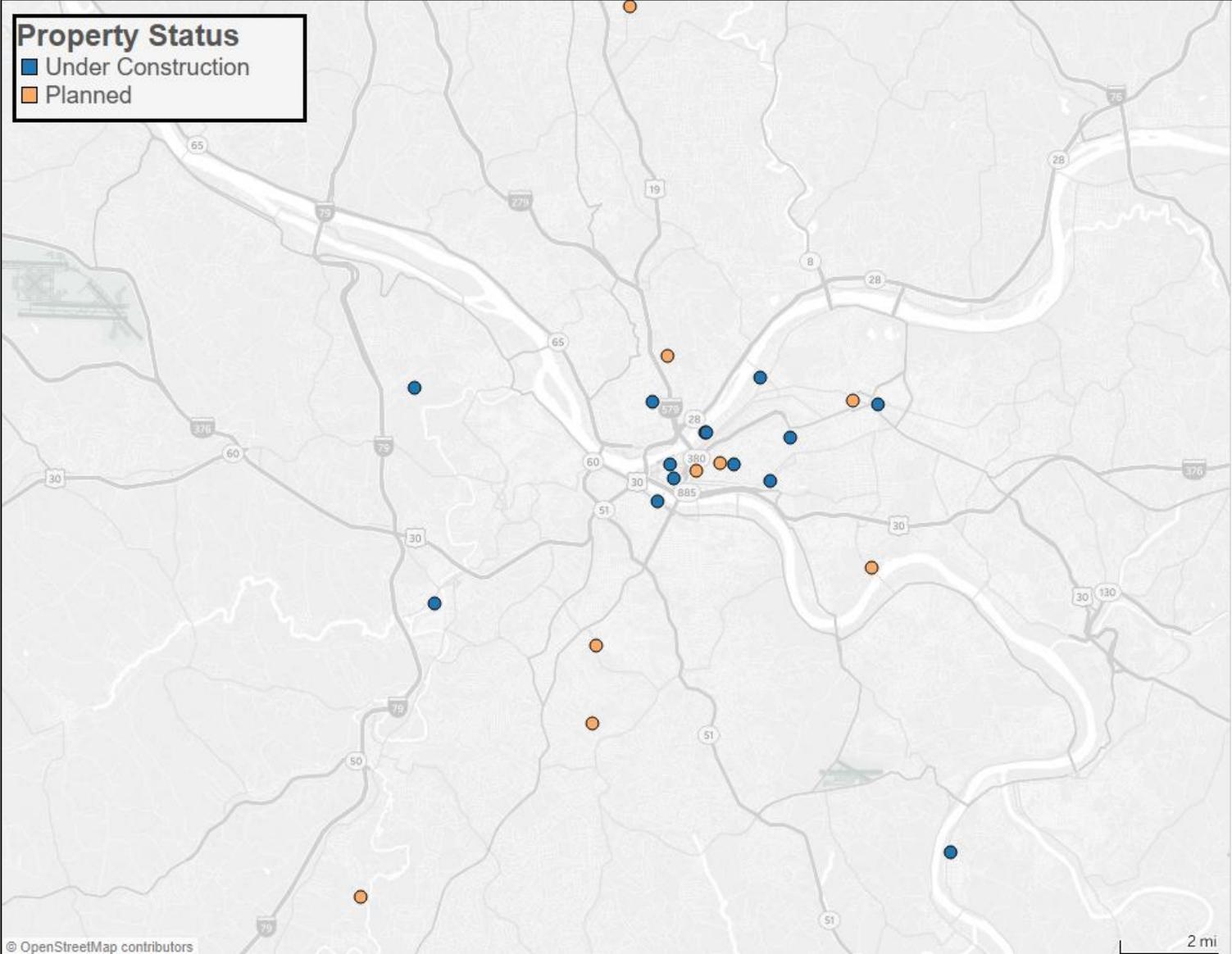
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Phoenix Development Pipeline



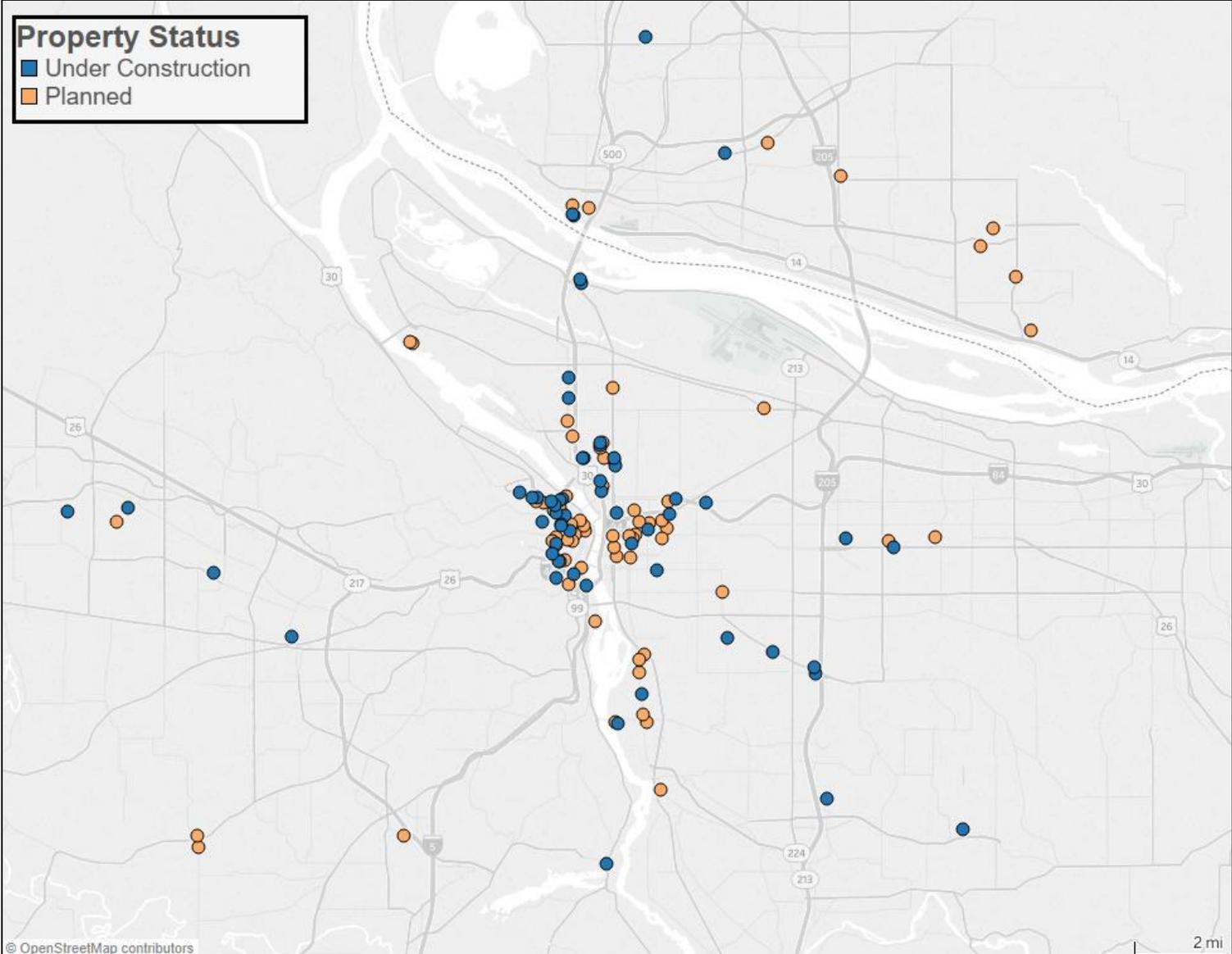
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Pittsburgh Development Pipeline



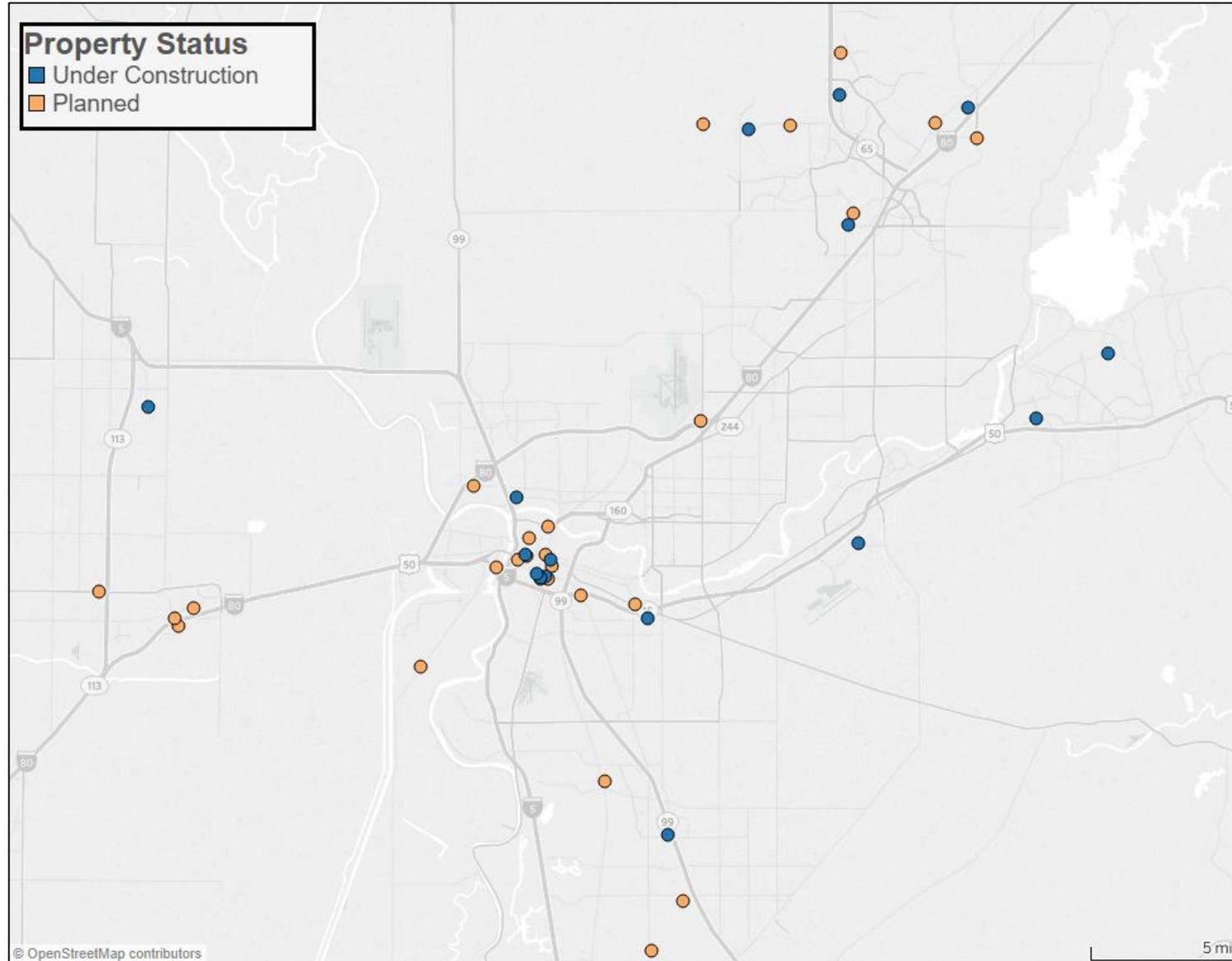
Source: Yardi® Matrix; Tableau

Portland Development Pipeline

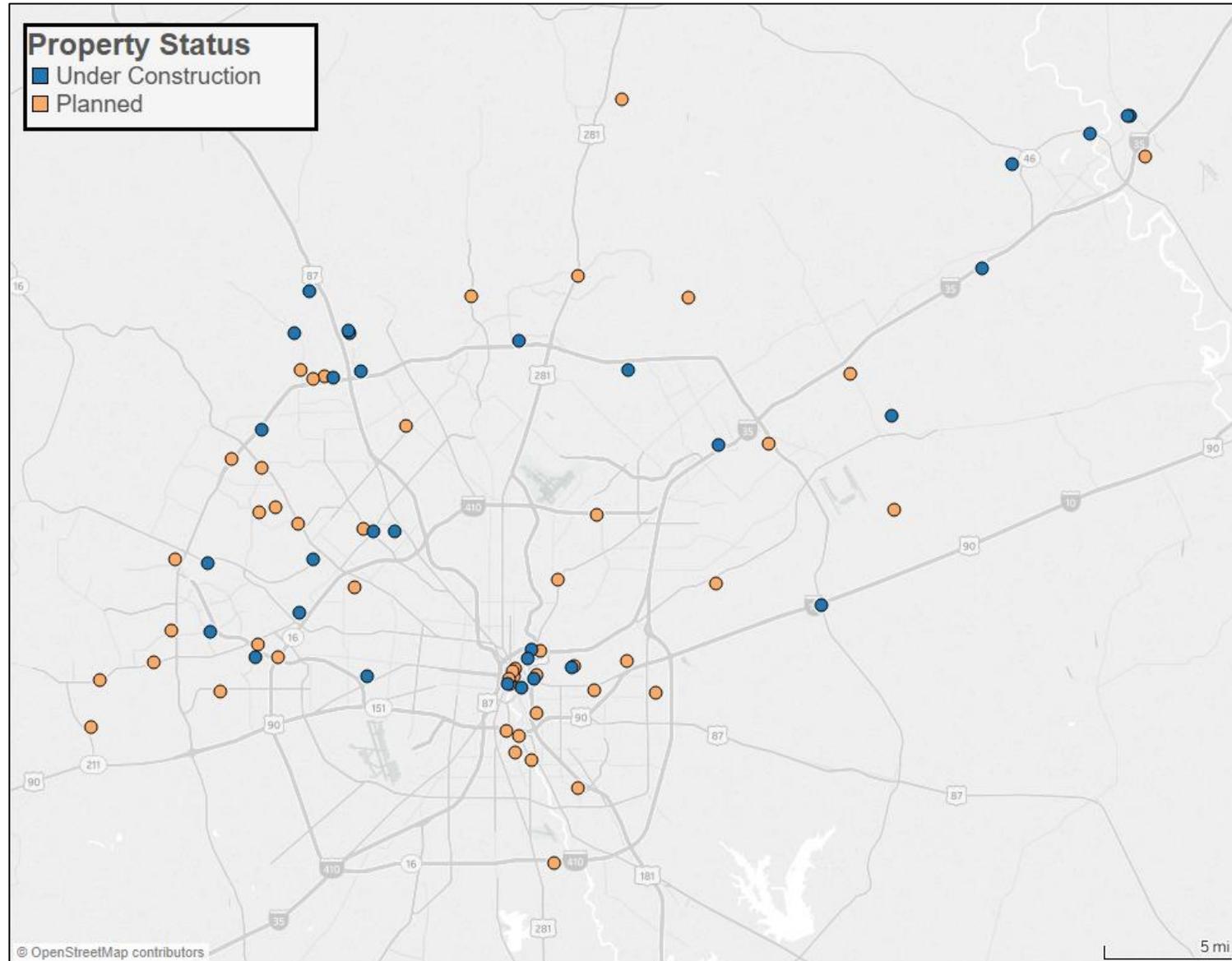


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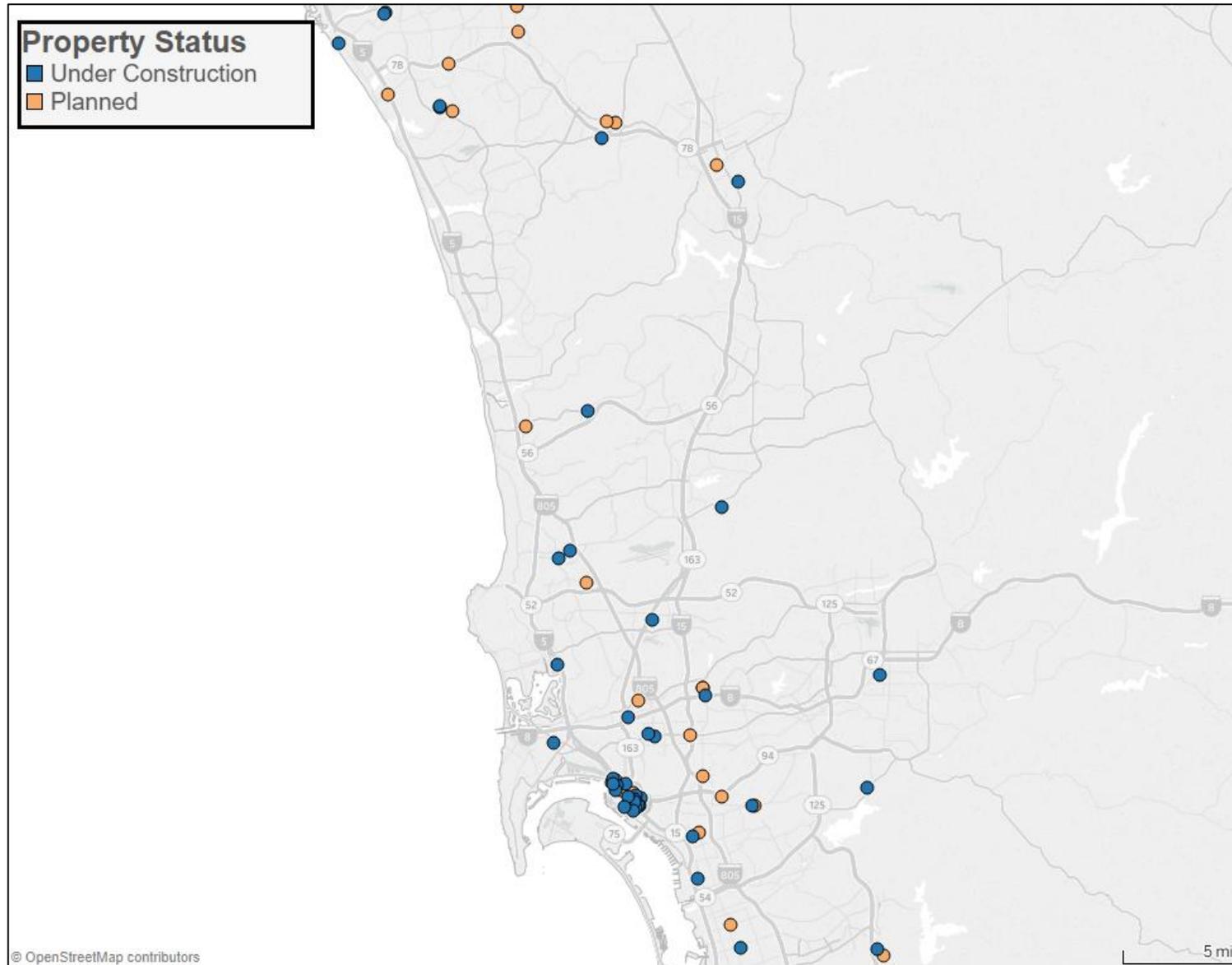
Sacramento Development Pipeline



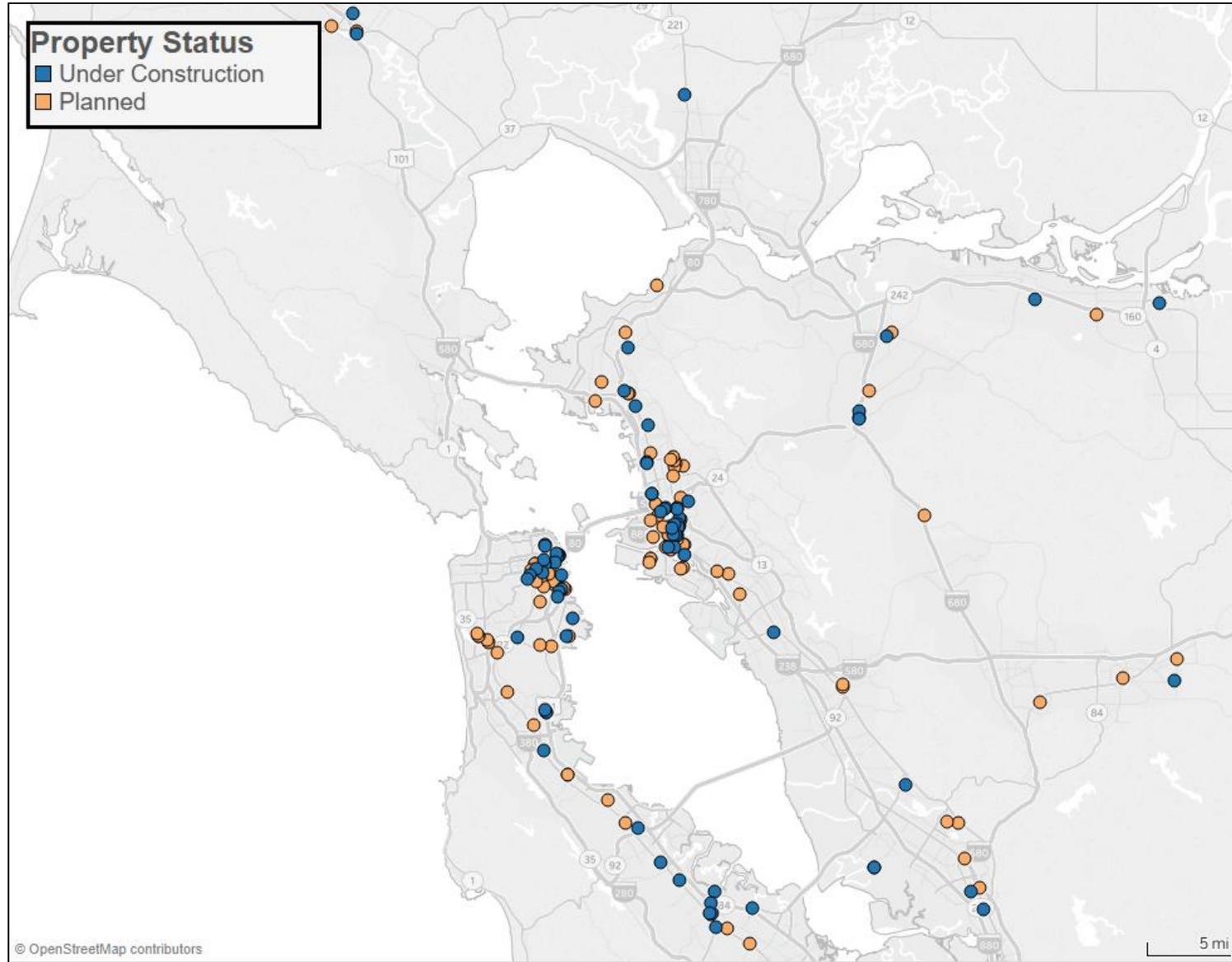
San Antonio Development Pipeline



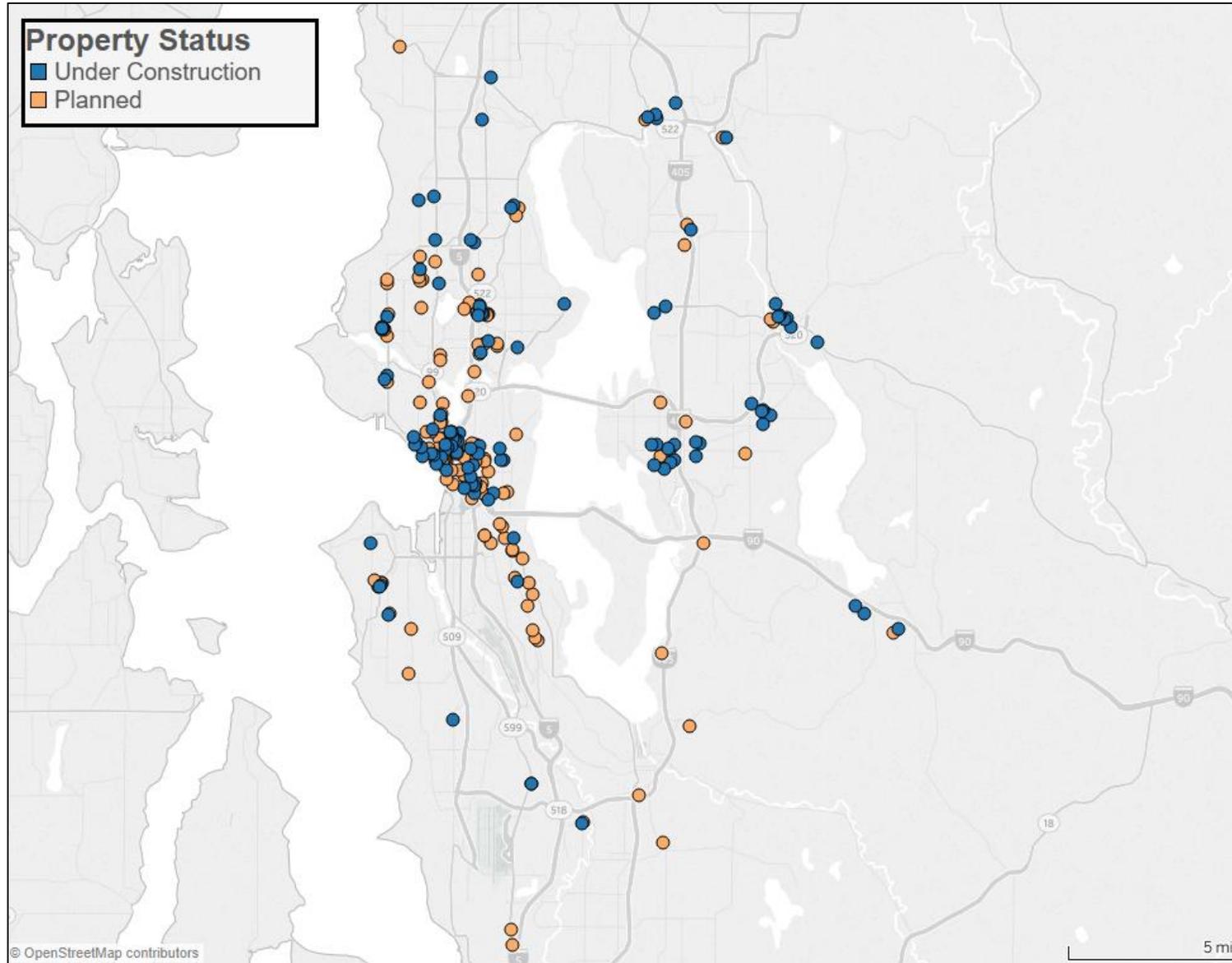
San Diego Development Pipeline



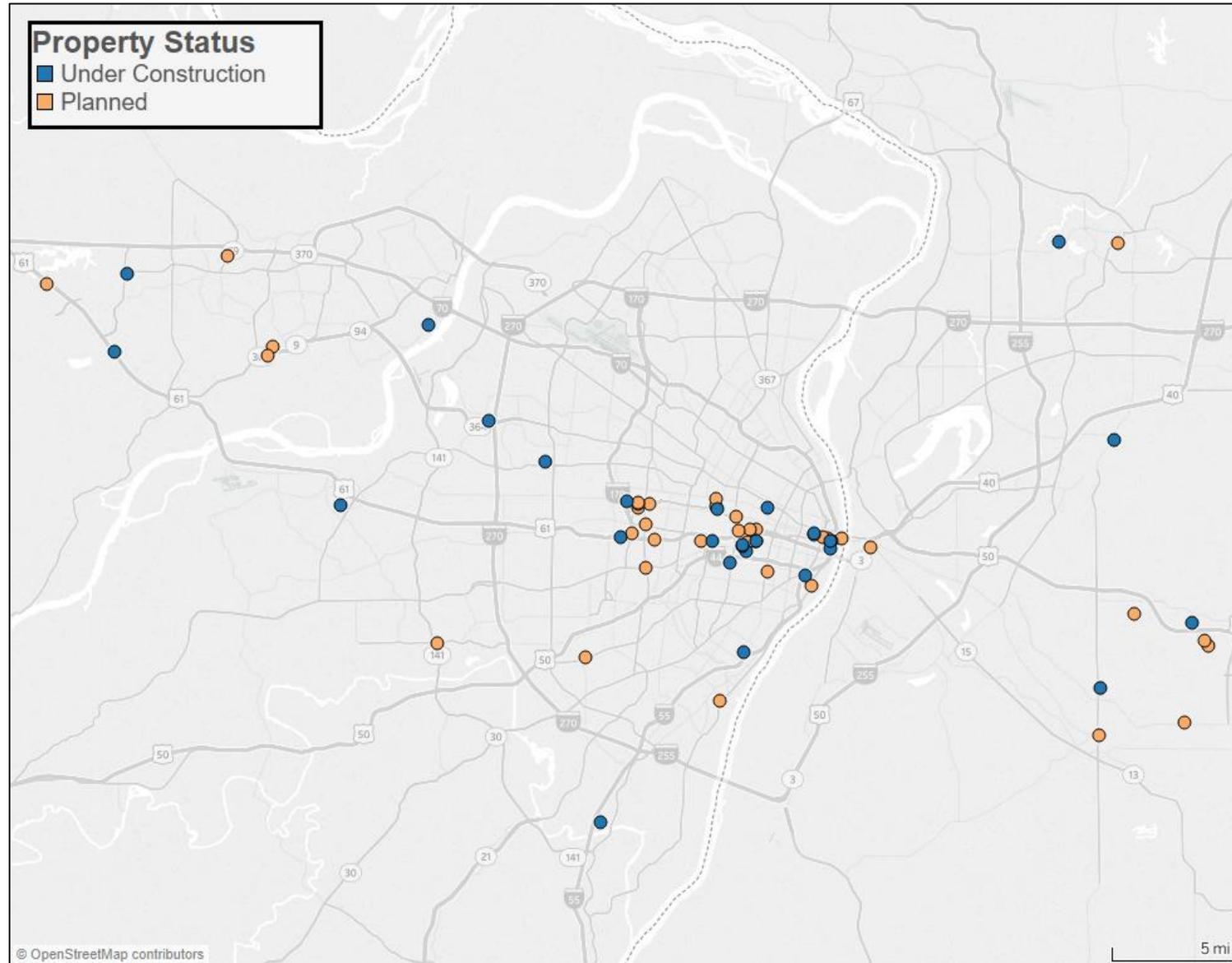
San Francisco – Oakland Development Pipeline



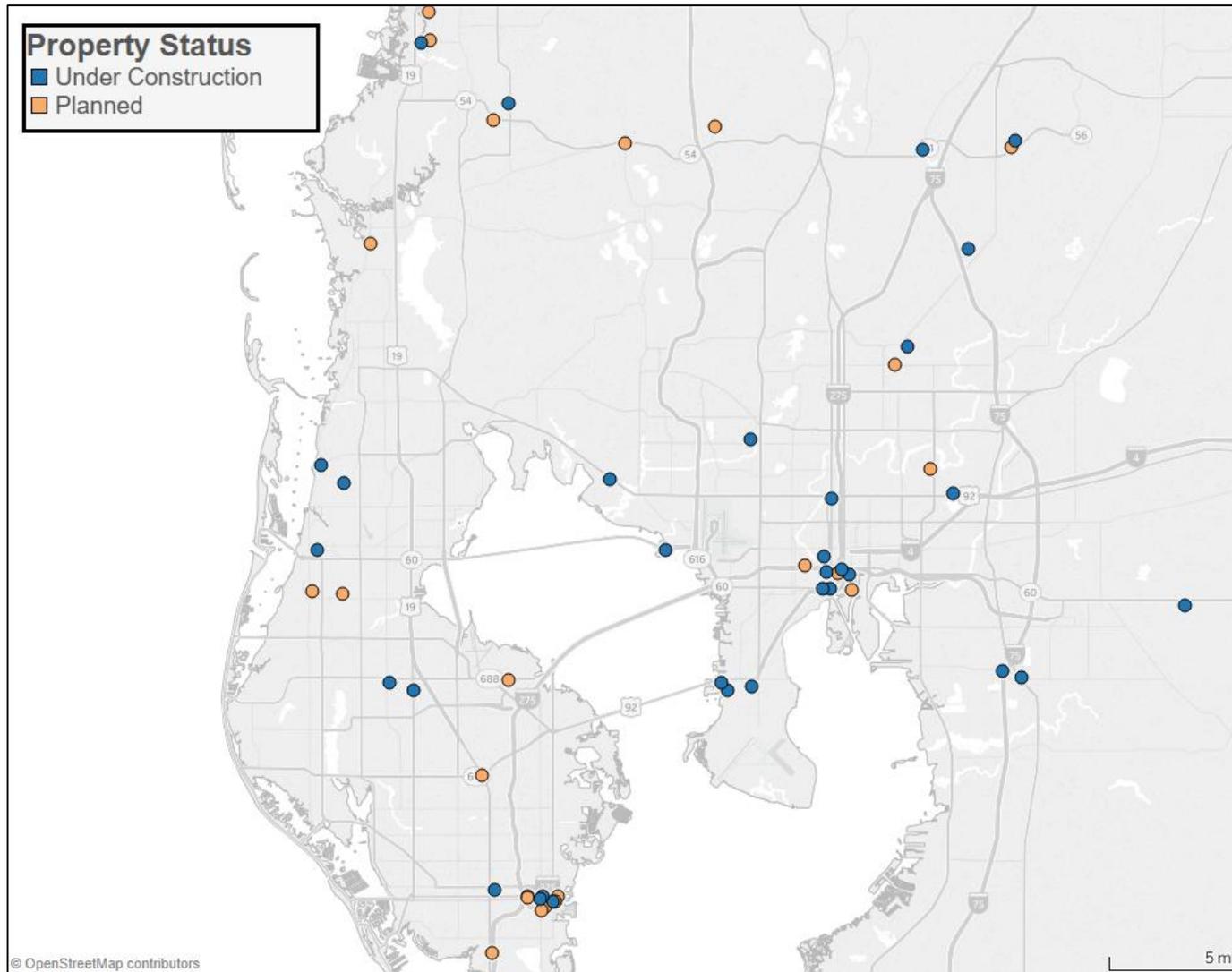
Seattle Development Pipeline



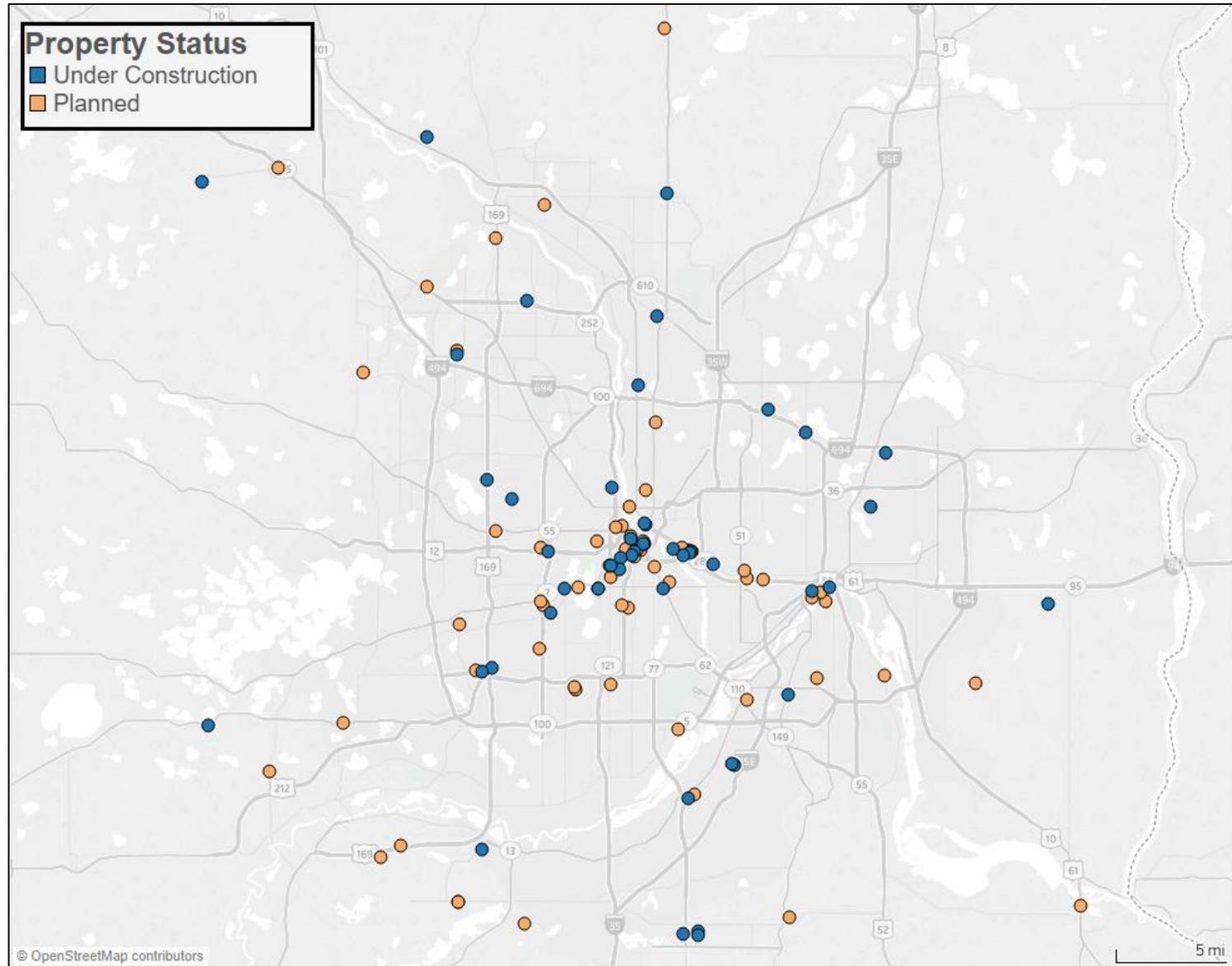
St. Louis Development Pipeline



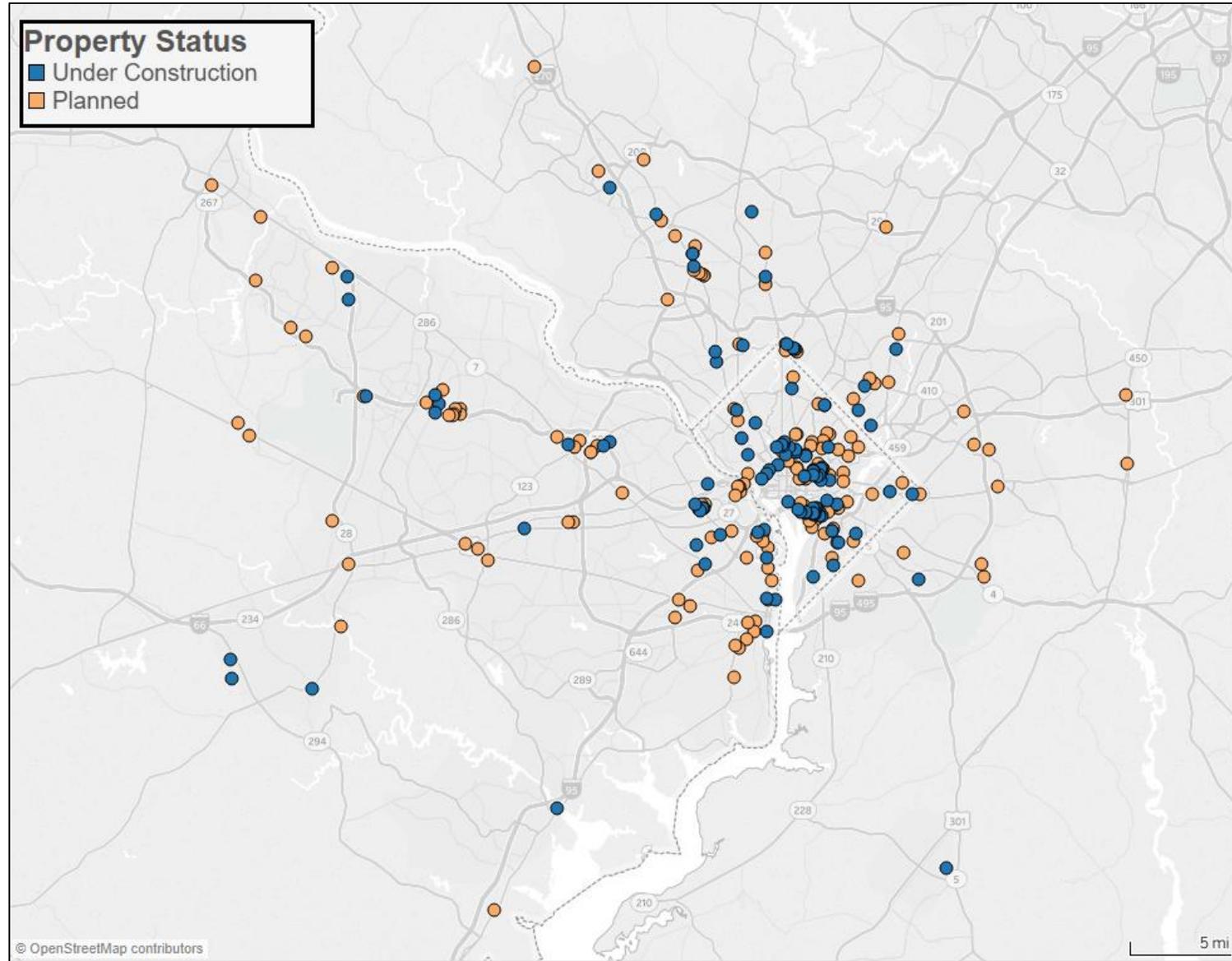
Tampa – St. Petersburg – Clearwater Development Pipeline



Twin Cities Development Pipeline



Washington D.C. Development Pipeline



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