

# VORNADO

REALTY TRUST

SEPTEMBER 2018

Certain statements contained in this investor presentation constitute forward-looking statements as such term is defined in Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements are not guarantees of performance. They represent our intentions, plans, expectations and beliefs and are subject to numerous assumptions, risks and uncertainties. Consequently, the future results, financial condition and business of Vornado Realty Trust (“Vornado”) may differ materially from those expressed in these forward-looking statements. You can find many of these statements by looking for words such as “approximates”, “believes”, “expects”, “anticipates”, “estimates”, “intends”, “plans”, “would”, “may” or similar expressions in this presentation. We also note the following forward-looking statements: in the case of our development and redevelopment projects, the estimated completion date, estimated project cost, incremental rent, incremental revenue and NOI, yields, value created and cost to complete; and stabilized yields, estimates of future capital expenditures, dividends to common and preferred shareholders and operating partnership distributions. Many of the factors that will determine the outcome of these and our other forward-looking statements are beyond our ability to control or predict. These factors include, among others: the timing of and costs associated with property improvements, financing commitments, and general competitive factors. For further discussion of factors that could materially affect the outcome of our forward-looking statements and other risks and uncertainties, see “Risk Factors” in Vornado’s Annual Report on Form 10-K for the year ended December 31, 2017.

For these statements, we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995. You are cautioned not to place undue reliance on our forward-looking statements. All subsequent written and oral forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. We do not undertake any obligation to release publicly any revisions to our forward-looking statements to reflect events or circumstances occurring after the date of this presentation.

## **Market Data**

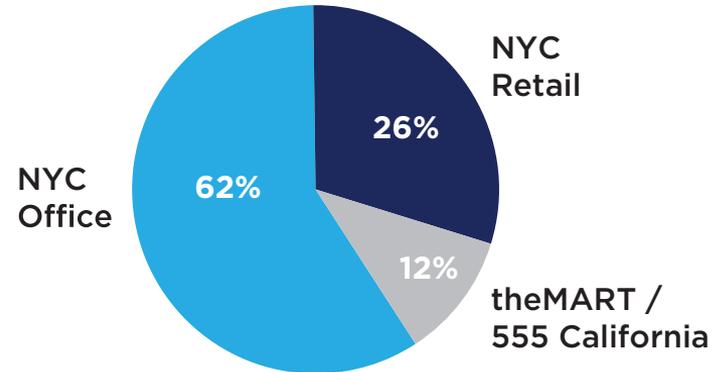
Market data and industry forecasts are used in this presentation, including data obtained from publicly available sources. These sources generally state that the information they provide has been obtained from sources believed to be reliable but the accuracy and completeness of the information are not assured. Vornado has not independently verified any of such information.



## Peerless NYC focused real estate company with premier office and street retail assets

- Vornado RemainCo's 5 and 10-year same-store NOI growth is the best among blue chip REITs
- Vornado's portfolio consists of 39.5MM SF (30.2MM SF at share)
- New York focused company, with an irreplaceable NYC portfolio generating 88% of the Company's NOI - cash basis
- NYC office includes trophy assets in best submarkets with a blue chip tenant roster
  - Well positioned with over 50% of SF in fast growing west side of Manhattan
- NYC street retail is among the scarcest and most valuable real estate in the world
  - Over 50% of NOI - cash basis comes from Upper Fifth Avenue and Times Square (the two premier submarkets), leased for term with high quality tenants
- theMART and 555 California Street — the best assets in Chicago and San Francisco

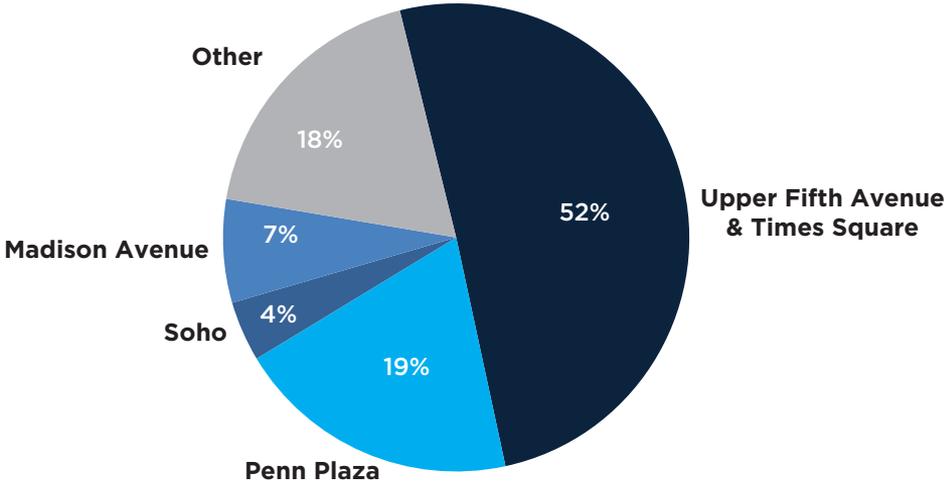
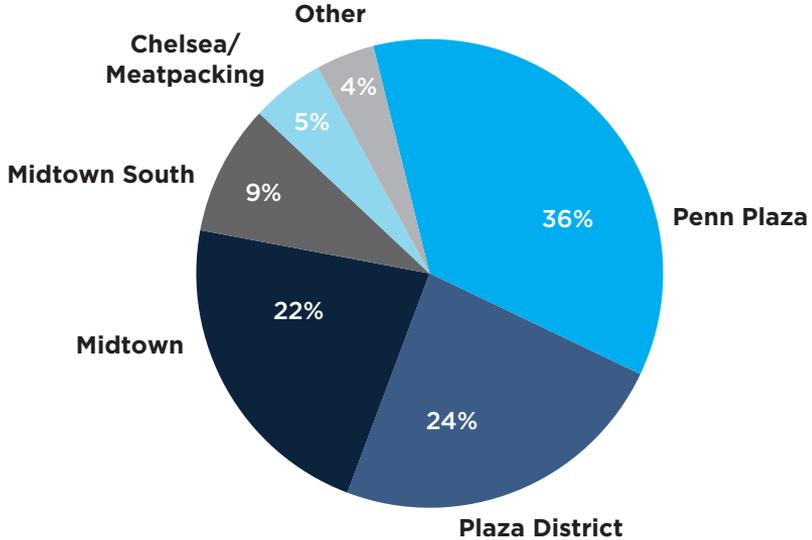
Components of NOI - cash basis<sup>(1)</sup>



1. For the trailing twelve months ended June 30, 2018 excluding other investments (see page 37 for non-GAAP reconciliation)

NYC Office Submarket by Square Footage  
As of 6/30/2018

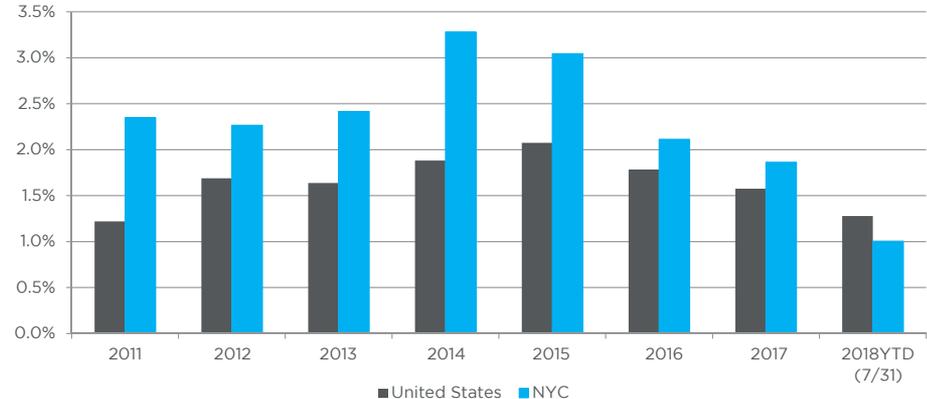
NYC Retail Submarket by NOI - cash basis  
for the Trailing Twelve Months Ended 6/30/2018



# NYC CONTINUES TO BE A MAGNET FOR TALENT/ NYC JOB GROWTH OUTPACES THE NATION

- New York is the gateway city with the strongest projected population growth
  - Population projected to increase on average 23,700 annually for the next three decades, surpassing 9 million by 2040 (NYC.gov)
- Diversified employment base
  - In 1990, 1 in 2 New York City jobs were in the financial services industry - today the ratio is 1 in 4
  - Today, 1 in 4 office jobs are TAMI, and half of office jobs are in professional business services
  - Second largest tech center outside of Silicon Valley
  - Growing footprint of healthcare systems and emergence of life sciences industry
- Resurgence of financial services sector
- Continuing corporate investment in New York
  - J.P. Morgan Chase building new 2.5 million SF corporate headquarters at 270 Park Avenue
  - Google acquisition of 1.2 million SF Chelsea Market building
  - Disney purchase of 4 Hudson Square leasehold to build new headquarters

NYC Outpaces National Job Growth



Sources: U.S. Bureau of Labor Statistics, NYS Department of Labor, Non-Farm Employment, Seasonally Adjusted

# MANHATTAN IS WELL-POSITIONED TO ABSORB UPCOMING OFFICE SUPPLY

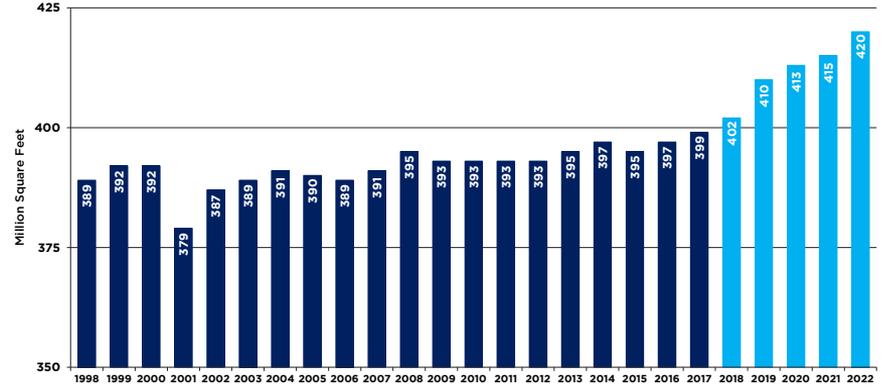
- Manhattan has benefited from negligible net new supply over the past 20 years
- New York City office-using jobs have grown at an average of 34,000 per year over the past 8 years
- Average job growth of 15,120 per year will absorb the new supply

## SF in Millions

Under Development (2018-2022)	21.4
Less: Pre-Leased to Date	10.0
Available to be Leased	11.4
Future vacancy in Midtown due to relocations to new construction	7.5
<b>Total Required New Leasing</b>	<b>18.9</b>

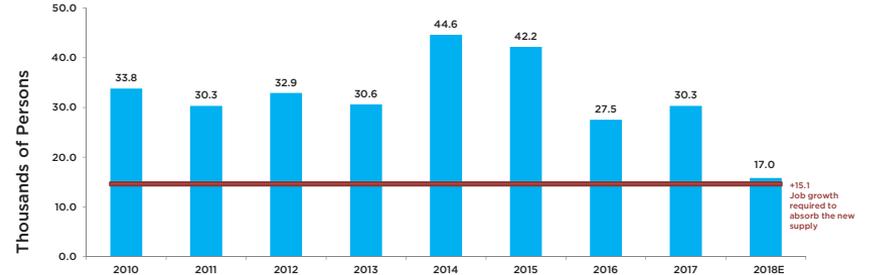
Years to Complete	5
Estimated SF Per Person	250
<b>Average Annual Job Growth Required to Absorb</b>	<b>15,120</b>

## Manhattan Office Inventory



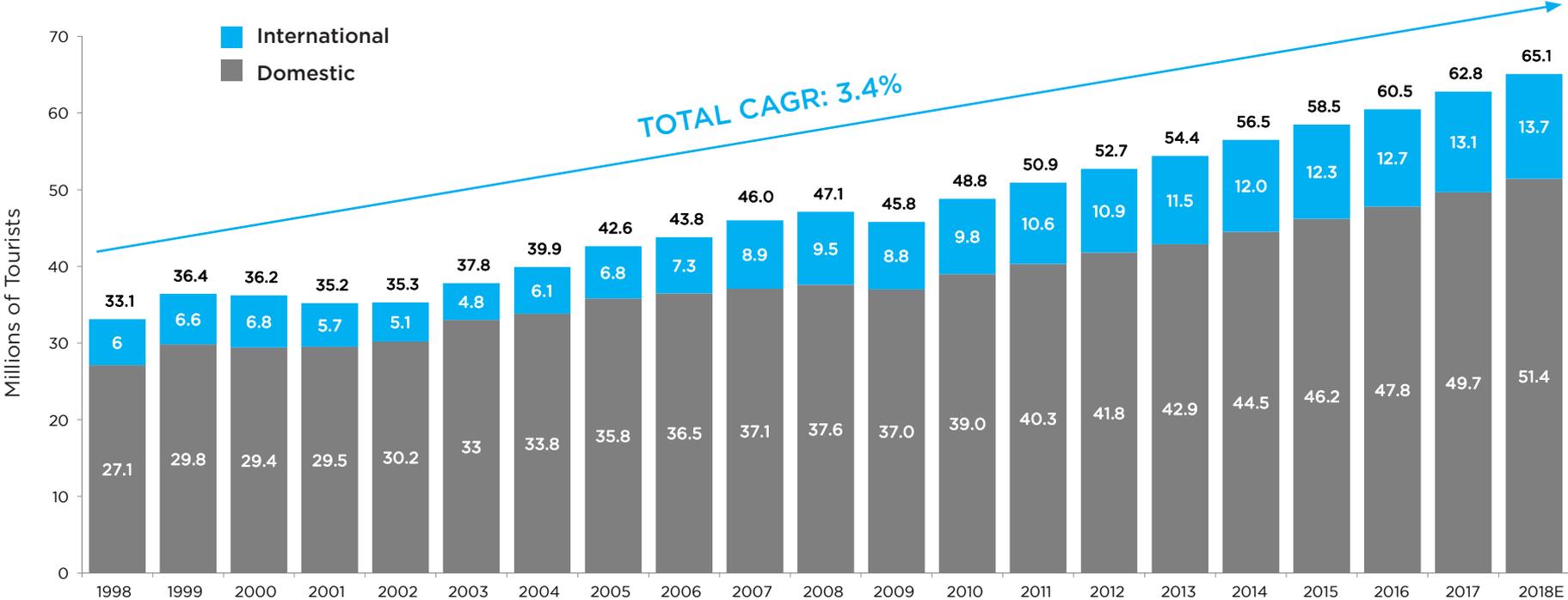
Source: Cushman & Wakefield

## NYC Office-Using Job Growth



Source: Cushman & Wakefield

# CONSISTENT NYC TOURISM GROWTH SUPPORTS RETAIL SALES



Source: NYC +Co



- Trading at a significant discount to NAV
- Only significant way to invest in fast growing West Side of Manhattan
- Growth from creative-class new developments (895,000 SF at share)
  - 61 Ninth Avenue
  - 512 West 22nd Street
  - Farley Office Building
  - 260 Eleventh Avenue
  - 606 Broadway
- Penn Plaza Redevelopment – over 9 million SF existing portfolio with significant NOI upside and value creation
  - 6.6 million SF of office with average in-place rents of \$63 PSF
  - PENN1 redevelopment to commence 4Q18
  - PENN2 redevelopment (1.8 million rentable SF)
  - Hotel Pennsylvania (2.8 million rentable SF of development)
  - Other development sites
- Internal growth over time from highly sought-after existing assets
- Fortress balance sheet with substantial cash and available liquidity (~\$4 billion) to take advantage of market opportunities
  - Sale of \$1 billion of non-core assets and sellout of 220 Central Park South luxury condominiums will generate significant additional dry powder
  - Closing of units in 220 Central Park South will begin 4Q2018
- Attractive common dividend yield of 3.4% - highest among peers

**For each \$1 Billion invested at an assumed incremental return of 4% above cash yield**

- Earnings increase by \$40MM
- FFO per share increases by \$0.20
- FFO Multiple decreases by 1.0x
- Dividends per share increase by \$0.20

# COMPONENTS OF NET ASSET VALUE (AT SHARE)

(unaudited and in millions, except square feet and per share amounts)

	Trailing Twelve Months Ended June 30, 2018			As of December 31, 2017	
	NOI - cash basis	Less: BMS	Pro-forma NOI - cash basis	Cap Rate <sup>(1)</sup>	Value <sup>(1)</sup>
New York - Office	\$ 707	\$ (26)	\$ 681	4.50%	\$ 15,133
New York - Retail	324	—	324	4.25%	7,624
New York - Residential	22	—	22	3.50%	629
theMART	105	—	105	5.00%	2,100
555 California Street	49	—	49 <sup>(2)</sup>	N/A	1,260
	<u>\$ 1,207</u>	<u>\$ (26)</u>	<u>\$ 1,181</u>		<u>26,746</u>
Less: Market management fee (28,469,000 square feet in service at share at \$0.50 per square foot) at a 4.50% cap rate					317
					<u>\$ 26,429</u>
<b>Other Asset Values (as of June 30, 2018 except where indicated):</b>					
Cash, restricted cash and marketable securities					\$ 1,378
Incremental value from 220 CPS					894
ALX - 1,654,068 shares at \$345.07 per share (as of September 21, 2018)					571
Hotel Pennsylvania					500
BMS (2018 NOI of \$26 at a 7.0x multiple)					182
UE - 5,717,184 shares at \$22.17 per share (as of September 21, 2018)					127
Real estate fund investments (VNO's share at fair value)					108
PEI - 6,250,000 shares at \$9.55 per share (as of September 21, 2018)					60
Other assets					977
Other construction in progress (at 110% of book value)					151
					<u>\$ 4,948</u>
Liabilities (see following page)					<u>\$ 11,375</u>
NAV					<u>\$ 20,002</u>
NAV per share (203.6 million common shares outstanding on an OP basis as of June 30, 2018)					<u>\$ 98<sup>(1)</sup></u>

See notes on following page

## COMPONENTS OF NET ASSET VALUE (AT SHARE)

(unaudited and in millions)

	Liabilities		
	Q2 2018	Adjustments	Net
Consolidated contractual mortgage notes payable, net of noncontrolling interests' share	\$ 7,561	\$ (950) <sup>(2)</sup>	\$ 6,611
Non-consolidated real estate debt	2,925 <sup>(4)</sup>	(701) <sup>(5)</sup>	2,224
Corporate unsecured debt	850	—	850
Revolver/term loan	830	(750) <sup>(3)</sup>	80
Other liabilities	685	—	685
Perpetual preferred (at redemption value)	925	—	925
<b>Total Liabilities</b>	<b>13,776</b>	<b>\$ (2,401)</b>	<b>\$ 11,375</b>

1. Capitalization Rate ("Cap Rate") means the rate applied to pro forma cash basis NOI to determine the fair value of our properties. The Cap Rates reflected in this presentation are based on management's estimates, which are inherently uncertain. These Cap Rates will be updated at year end in accordance with our policy. Other asset values are also estimates made by management, which are inherently uncertain. There can be no assurance that management's estimates accurately reflect the fair value of our assets, and actual value may differ materially.

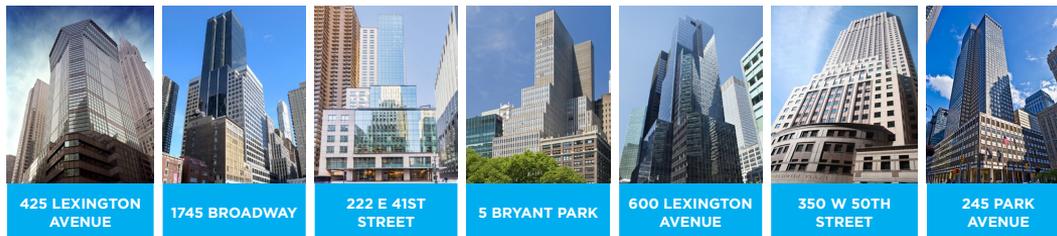
2. Excludes incremental NOI from the lease-up of 345 Montgomery Street.

3. Debt related to 220 Central Park South.

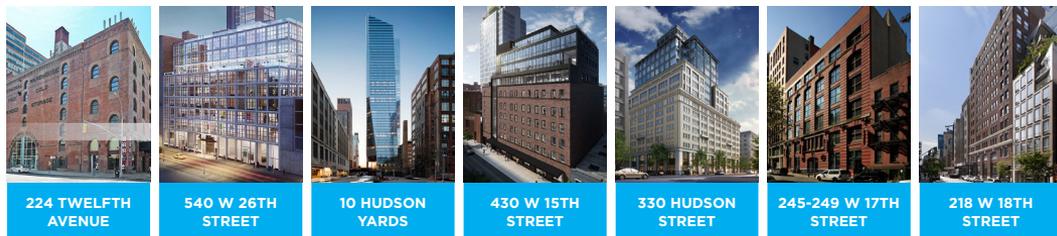
4. Excludes our share of debt of ALX, UE, and PEI as they are presented on an equity basis in other asset values.

5. Debt related to 666 Fifth Avenue Office Condominium which was sold on August 3, 2018.

# IMPLIED VALUE OF VNO'S NYC OFFICE PORTFOLIO AT SUBSTANTIAL DISCOUNT TO PRIVATE MARKET SALES



	425 LEXINGTON AVENUE	1745 BROADWAY	222 E 41ST STREET	5 BRYANT PARK	600 LEXINGTON AVENUE	350 W 50TH STREET	245 PARK AVENUE
Closing Date	Pending	5/2018	4/2018	3/2018	1/2018	9/2017	5/2017
Sale Price (\$)	705,000,000	595,800,000	332,500,000	640,000,000	305,000,000	1,725,000,000	2,210,000,000
Price PSF (\$)	940	936	860	962	1,005	839	1,364
Cap Rate	4.5%	3.8%	4.0%	4.0%	4.3%	5.0%	4.9%



	224 TWELFTH AVENUE	540 W 26TH STREET	10 HUDSON YARDS	430 W 15TH STREET	330 HUDSON STREET	245-249 W 17TH STREET	218 W 18TH STREET
Closing Date	Pending	7/2018	5/2018	4/2018	1/2018	10/2017	10/2017
Sale Price (\$)	900,000,000	260,000,000	2,180,000,000	159,000,000	385,000,000	339,400,000	174,700,000
Price PSF (\$)	853	1,576	1,202	1,563	826	1,207	1,055
Cap Rate	1.9%	5.1%	4.5%	4.8%	4.7%	4.9%	4.4%

**At Vornado's stock price of \$75.05 (9/21/18), our NYC Office implied Price per Square Foot is \$603 and Cap Rate of 6.4%.<sup>(1)</sup>**

*1. Based on NOI and Cap Rates for other holdings per 12/31/2017 NAV Analysis*

**Weighted Average Price per Square Foot of \$1,043 and Cap Rate of 4.4%**

(Amounts in millions)

## AT 6/30/18 - PRO-FORMA FOR 8/03/18 SALE OF 666 FIFTH OFFICE CONDOMINIUM

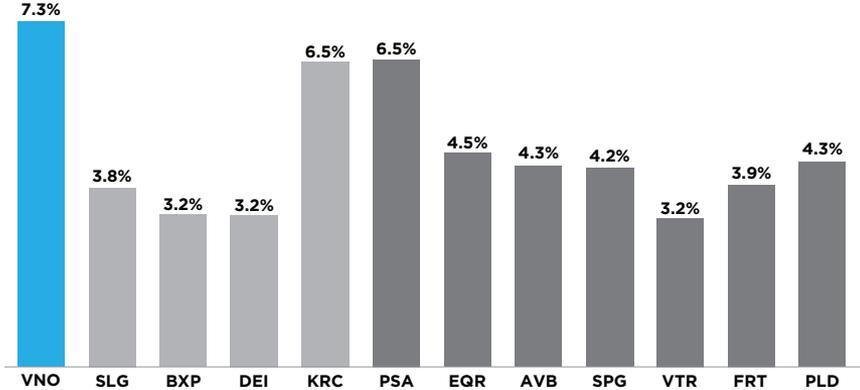
Secured debt	\$ 8,164
Unsecured debt	1,680
Pro rata share of non-consolidated debt (excluding Toys R Us)	2,803
Less: noncontrolling interests' share of consolidated debt	(604)
<b>Total debt</b>	<b>12,043</b>
220 CPS (mortgage + term loan)	(1,700)
Projected cash proceeds from 220 Central Park South in excess of the \$1,700 debt repaid	(892)
Cash, restricted cash and marketable securities	(1,378)
<b>Net Debt</b>	<b>\$ 8,073</b>
<b>TTM EBITDA, as adjusted<sup>(1)</sup></b>	<b>\$ 1,285</b>
<b>Net Debt/EBITDA, as adjusted</b>	<b>6.3x</b>

- Investment grade — Baa2/BBB
- \$2.4 BN in revolver capacity
- \$1.4 BN in cash
- Weighted average debt maturity — 4.2 years
- ~\$11 BN of unencumbered assets

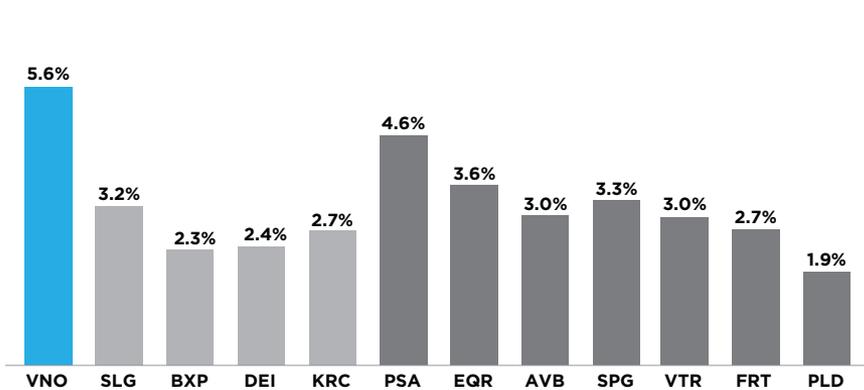
1. See page 37 for non-GAAP reconciliation

Vornado has delivered superior same-store NOI - cash basis growth relative to blue chip peers on both a 5-year and 10-year basis

5-Year Same-Store NOI - cash basis CAGR (2012-2017)



10-Year Same-Store NOI - cash basis CAGR (2007-2017)



Source: Green Street Advisors

# LEADER IN REPOSITIONING AND MODERNIZING PROPERTIES

## SELECT CASE STUDIES

(Amounts in thousands)



**1290 AVENUE OF THE AMERICAS**  
2,113,000 SF



**770 BROADWAY**  
1,183,000 SF



**330 WEST 34TH STREET**  
709,000 SF



**7 WEST 34TH STREET**  
479,000 SF

Incremental Stabilized Cash NOI	\$ 38,500	\$ 37,300	\$ 21,200	\$ 15,700
Capital Cost (Including TI/LC)	221,300	240,000	142,700	77,200
<b>Yield</b>	<b>17.4%</b>	<b>15.5%</b>	<b>14.9%</b>	<b>20.3%</b>
<b>Value Created<sup>(1)</sup></b>	<b>\$ 444,000<sup>(2)</sup></b>	<b>\$ 588,900</b>	<b>\$ 328,400</b>	<b>\$ 271,700<sup>(3)</sup></b>
<b>Value Created Per Share</b>	<b>\$ 2.18</b>	<b>\$ 2.90</b>	<b>\$ 1.62</b>	<b>\$ 1.34</b>

1. Incremental NOI valued at 4.5% cap rate, less capital cost (including TI/LC)

2. Shown at 70% share

3. Shown at 100% share; Vornado monetized 47% of the value creation through sale of a partial interest





# SELECT NEW YORK CITY OFFICE PROPERTIES

## PLAZA DISTRICT



888 SEVENTH AVENUE



650 MADISON AVENUE



595 MADISON AVENUE



640 FIFTH AVENUE



689 FIFTH AVENUE

## GRAND CENTRAL



330 MADISON AVENUE



90 PARK AVENUE

## PENN PLAZA DISTRICT



7 WEST 34TH STREET



PENN11



330 WEST 34TH STREET



PENN1/PENN2



FARLEY OFFICE BUILDING

## MIDTOWN



731 LEXINGTON AVENUE



1290 AVENUE OF THE AMERICAS

## MIDTOWN SOUTH



ONE PARK AVENUE



770 BROADWAY

## PARK AVENUE



280 PARK AVENUE



350 PARK AVENUE

## CHELSEA / MEATPACKING



61 NINTH AVENUE



512 WEST 22ND STREET



85 TENTH AVENUE

## FINANCIAL



## TAMI



## HEALTHCARE / INSURANCE



## LEGAL



## REAL ESTATE



## OTHER



# SELECT NEW YORK CITY STREET RETAIL PROPERTIES



828-850 MADISON AVENUE



595 MADISON AVENUE



650 MADISON AVENUE



677 MADISON AVENUE



4 UNION SQUARE



666 FIFTH AVENUE



689 FIFTH AVENUE



1535 & 1540 BROADWAY



640 FIFTH AVENUE



510 FIFTH AVENUE



655 FIFTH AVENUE



697 FIFTH AVENUE

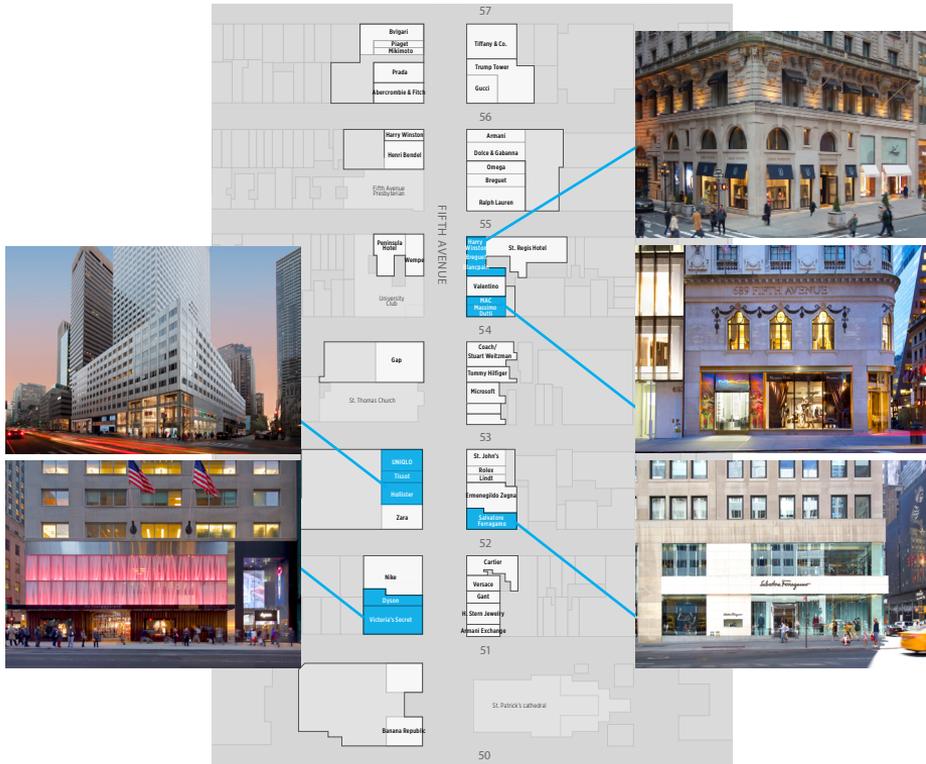


478-486 BROADWAY



435 SEVENTH AVENUE

## Upper Fifth Avenue Own 23% of Frontage<sup>(1)</sup>



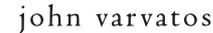
1. Excludes churches, clubs and retail owned by users

## Times Square Own Both Sides of the Bowtie



1540 BROADWAY

1535 BROADWAY



# STREET RETAIL PORTFOLIO

## UPPER FIFTH & TIMES SQUARE BUTTONED UP FOR TERM

Over 50% of Vornado street retail NOI - cash basis comes from Upper Fifth Avenue and Times Square. Both are locked up for term with high quality tenants

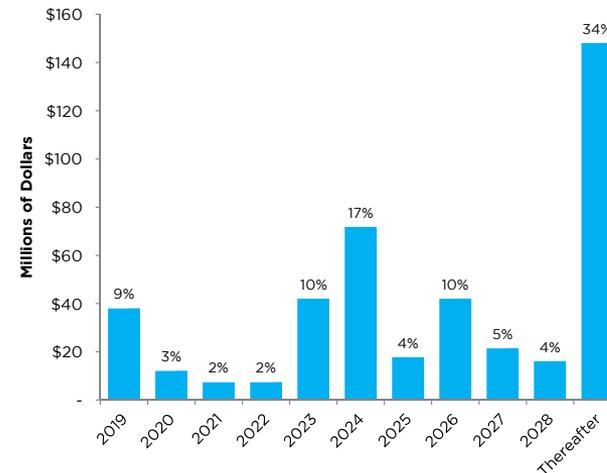
### UPPER FIFTH AVENUE

Tenant	Year of Expiration
Zara	2019
MAC Cosmetics	2024
Hollister	2024
Uniqlo	2026
Tissot	2026
Dyson	2027
Ferragamo	2028
Swatch	2031 <sup>(1)</sup>
Harry Winston	2031
Victoria's Secret	2032

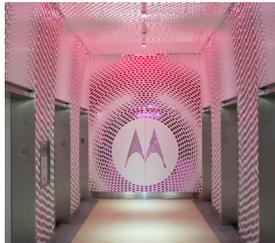
### TIMES SQUARE

Tenant	Year of Expiration
US Polo	2023
Sunglass Hut	2023
Planet Hollywood	2023
MAC Cosmetics	2025
T-Mobile	2025
Disney	2026
Invicta	2028
Sephora	2029
Swatch	2030
Levi's	2030 <sup>(2)</sup>
Forever 21	2031
Nederlander Theater	2050

New York Retail Expirations by Revenue as of 6/30/2018  
Weighted Average Lease Term: 8.0 Years



1. Tenant has the right to cancel in 2023  
2. Tenant has the right to cancel in 2024



theMART building (Chicago) - best example of contemporary office space outside of Silicon Valley. Transformed from a showroom building to the premier creative and tech hub in the Midwest, resulting in significant earnings growth and value creation

- **3,675,000 SF - 99.3% Occupancy at 6/30/2018**
- Located in River North, the hottest submarket in Chicago
- Between 2011 and 2Q18, converted over 950,000 SF in the building from showroom/trade show space to creative office space
- 3.1 million SF of total space leased since 2012
- 6/30/2018 TTM Cash NOI (non-GAAP)<sup>(1)</sup> of \$103.6 million versus 2011 Cash NOI (non-GAAP)<sup>(1)</sup> of \$54.3 million
- In-place escalated rents average \$42.80 PSF as of 6/30/2018 (office \$38.07, retail \$50.03 and showroom \$48.70)
- In conjunction with the City of Chicago, theMART will debut *Art on theMART* on September 29, 2018. This curated series of digital artworks will project the work of renowned artists across 2.5 acres of theMART's exterior river-façade, creating the largest permanent digital art projection in the world.

Major Tenants:

- |   |                      |
|---|----------------------|
| - Motorola Mobility<br>(guaranteed by Google) | - Yelp Inc.          |
| - ConAgra Foods Inc.                          | - Paypal, Inc.       |
| - 1871  | - Razorfish          |
| - Kellogg's                                   | - Allstate Insurance |
| - Allscripts Healthcare                       | - Caterpillar Inc.   |
|   | - Steelcase          |
|   | - Herman Miller      |

1. See page 39 for non-GAAP reconciliation



555 California Street – the franchise office building in San Francisco and arguably the most iconic building on the west coast – further NOI growth expected from redeveloped concourse and 315/345 Montgomery

- **1,805,000 SF – 97.3% Occupancy at 6/30/2018 at 100% share**
- 1.6 million SF of office space leased since 2012
- 6/30/2018 TTM Cash NOI (non-GAAP)<sup>(1)</sup> of \$53.7 million at share (which does not include Cash NOI from approximately 110,000 SF of vacancy and space under redevelopment) versus 2012 Cash NOI (non-GAAP)<sup>(1)</sup> of \$38.2 million at share
- In place escalated rents average \$74.64 PSF as of 6/30/2018

**Major Tenants:**

- |                      |                           |
|----------------------|---------------------------|
| - Bank of America    | - Kirkland & Ellis LLP    |
| - Dodge & Cox        | - Morgan Stanley          |
| - Fenwick & West LLP | - UBS                     |
| - Microsoft          | - Wells Fargo             |
| - Jones Day          | - KKR                     |
| - Goldman Sachs      | - McKinsey & Company Inc. |

1. See page 39 for non-GAAP reconciliation





# VORNADO

REALTY TRUST

GROWTH FROM DEVELOPMENT

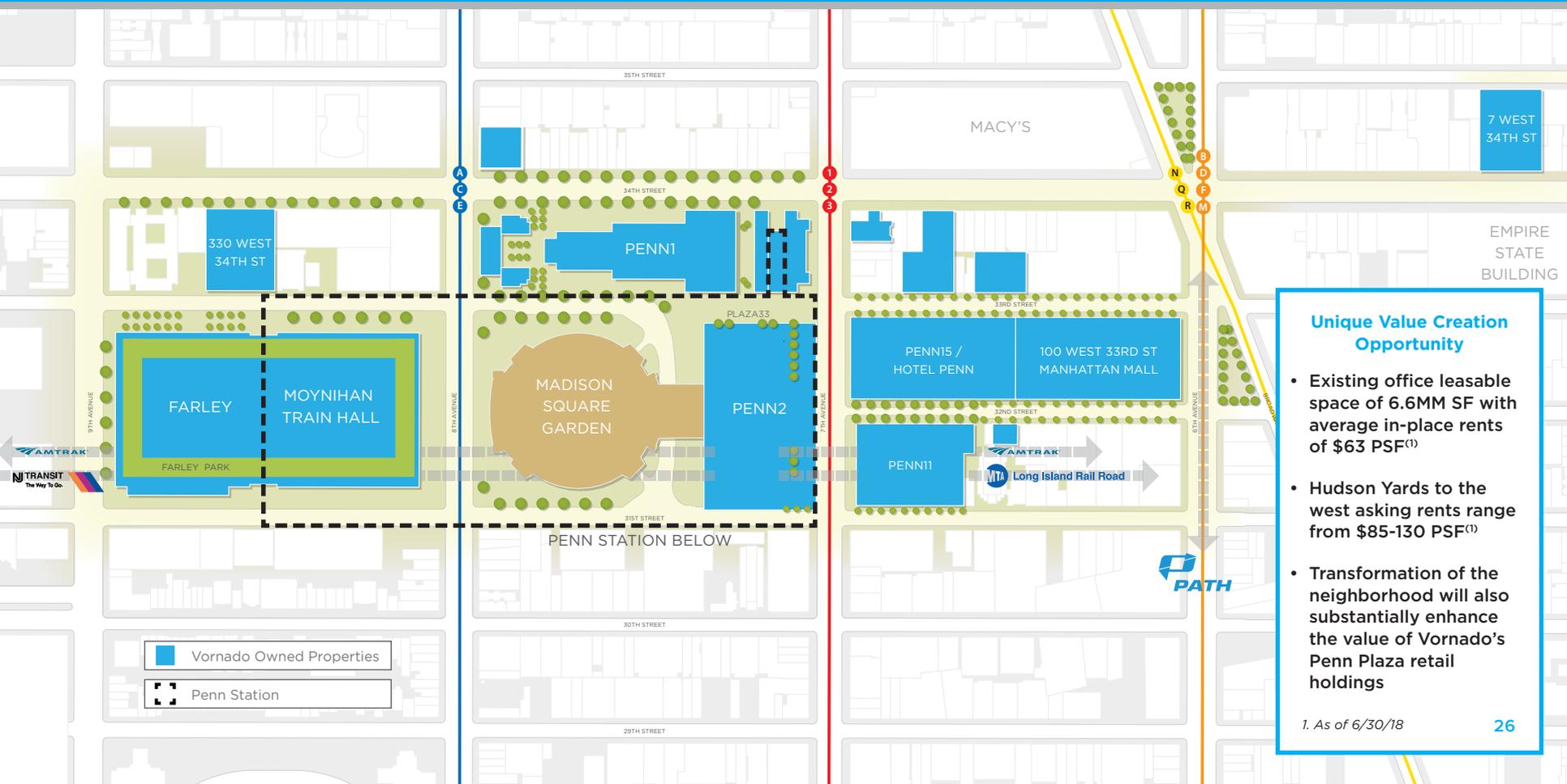


HUDSON YARDS

MANHATTAN WEST

PENN PLAZA



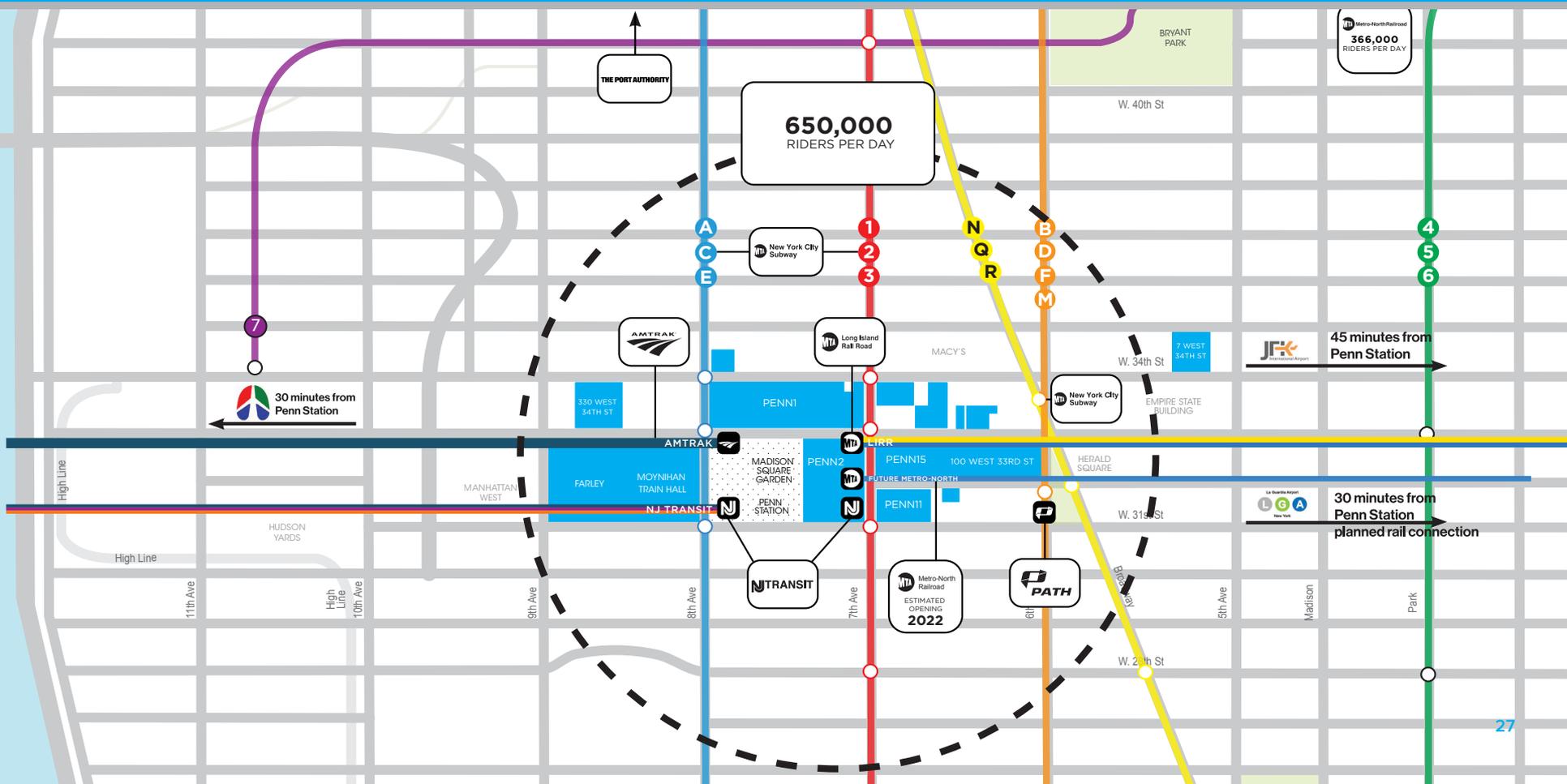


**Unique Value Creation Opportunity**

- Existing office leasable space of 6.6MM SF with average in-place rents of \$63 PSF<sup>(1)</sup>
- Hudson Yards to the west asking rents range from \$85-130 PSF<sup>(1)</sup>
- Transformation of the neighborhood will also substantially enhance the value of Vornado's Penn Plaza retail holdings

*1. As of 6/30/18*

# PENN PLAZA | BEST POSITIONED FROM TRANSIT STANDPOINT



OUR CURRENT DEVELOPMENT PIPELINE IS EXPECTED TO INCREASE CASH NOI BY ~\$100MM (AT SHARE) UPON STABILIZATION

(Amounts in thousands)



**PENN 1**  
2,535,000 SF



**61 NINTH AVENUE**  
170,000 SF



**512 WEST 22ND STREET**  
173,000 SF



**606 BROADWAY**  
34,000 SF



**345 MONTGOMERY STREET**  
78,000 SF



**THE FARLEY BUILDING**  
850,000 SF

**TOTAL CURRENT PROJECTS**  
3,826,000 SF

	N/A	Q2 2019	Q1 2020	Q2 2020	Q3 2020	Q2 2022	
Full Quarter Stabilized Operations	N/A						
VNO Share	100.0%	45.1%	55.0%	50.0%	70.0%	50.1%	
Development Budget (at Share) <sup>2</sup>							
Amount Expended	\$ 3,939	\$ 55,134	\$ 47,719	\$ 20,866	\$ 6,399	\$ 42,503	\$ 176,560
Remaining	\$ 196,061	\$ 13,866	\$ 24,281	\$ 9,134	\$ 25,601	\$ 357,497	\$ 626,440
Total Incremental Budget	\$ 200,000	\$ 69,000	\$ 72,000	\$ 30,000	\$ 32,000	\$ 400,000	\$ 803,000

1. Square footages shown at 100%; costs shown at share

2. Excludes land and acquisition costs

**FUTURE REDEVELOPMENT OPPORTUNITIES PROVIDE BUILT-IN SOURCE OF ADDITIONAL GROWTH**



**HOTEL PENNSYLVANIA**  
2,800,000 SF



**PENN2**  
1,800,000 SF



**260 ELEVENTH AVENUE**  
340,000 SF

*Note: Shown at estimated rentable SF, subject to change*

# FARLEY OFFICE BUILDING DEVELOPMENT BEGINNING THE TRANSFORMATION OF PENN PLAZA

- A 50/50 joint venture between Vornado and the Related Companies recently commenced the conversion of the Farley Post Office in Penn Plaza into the new Farley Office Building and Train Hall
- Total budget of \$515 million at share
- The joint venture will develop 730,000 SF of unique creative office space and 120,000 SF of train hall retail
- Expected delivery 3Q 2020







34TH STREET LOBBY ENTRY



34TH STREET LOBBY



34TH STREET LOBBY RECEPTION DESK



SECOND FLOOR LOUNGE



33RD STREET LOBBY



33RD STREET LOBBY LIBRARY



1. Incremental NOI valued at 4.5% cap rate, less development costs excluding recurring TI/LCs that would have been incurred on re-tenanting the building irrespective of this capital project

## PENN1

2.54MM SF

Development Cost	\$	200MM
In-Place Office Rent	\$	64 PSF
Average Market Rent After Development	\$	84 PSF
Incremental Rent	\$	20 PSF
Incremental NOI	\$	48MM
Yield on Capital		24%
Value Created <sup>(1)</sup>	\$	867MM
Value Created Per Share	\$	4.25

Average remaining office lease term is 5.4 years



## NATIONALLY RECOGNIZED, INDUSTRY-LEADING SUSTAINABILITY PROGRAM

- 5-time Energy Star Partner of the Year, Sustained Excellence recipient 2018
- 23.6 million square feet of owned and managed LEED certified buildings
- Largest landlord of LEED certified buildings in New York City with over 17.9 million SF. All new commercial developments will be, at minimum, LEED Gold certified
- NAREIT Leader in the Light award 2017, 8th year in a row
- Global Real Estate Sustainability Benchmark (GRESB) “Green Star” since 2013; sector leader for North America’s diversified category 2017
- 20% reduction in same-store greenhouse gas emission since 2009





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APPENDIX

This investor presentation contains certain non-GAAP financial measures, including net operating income (“NOI”) and earnings before interest, taxes, depreciation and amortization (“EBITDA”).

NOI represents total revenues less operating expenses. We consider NOI to be the primary non-GAAP financial measure for making decisions and assessing the unlevered performance of our properties and segments as it relates to the total return on assets as opposed to the levered return on equity. As properties are bought and sold based on NOI, we utilize this measure to make investment decisions as well as to compare the performance of our assets to that of our peers. NOI should not be considered a substitute for net income. NOI may not be comparable to similarly titled measures employed by other companies. We calculate NOI on an Operating Partnership basis which is before allocation to the noncontrolling interest of Vornado Realty L.P. (the “Operating Partnership”).

EBITDA represents earnings before interest, taxes, depreciation and amortization. EBITDA is essentially NOI less general and administrative expenses. We use EBITDA as a secondary non-GAAP measure primarily in the context of a net debt to EBITDA ratio. We calculate EBITDA on an Operating Partnership basis which is before allocation to the noncontrolling interest of Vornado Realty L.P. (the “Operating Partnership”).

A reconciliation of NOI and EBITDA to net income, the most directly comparable GAAP measure, is provided on the following pages.

These non-GAAP financial measures are used by management, investors and analysts to facilitate meaningful comparisons of operating performance between periods and among our peers because they exclude the effect of real estate depreciation and amortization and net gains on sales, which are based on historical costs and implicitly assume that the value of real estate diminishes predictably over time, rather than fluctuating based on existing market conditions. These metrics do not represent cash generated from operating activities and are not necessarily indicative of cash available to fund obligations and should not be considered as an alternative to net income as performance measures or cash flow as liquidity measures. These non-GAAP metrics may not be comparable to similarly titled measures employed by other companies.

# NON-GAAP RECONCILIATIONS

(Amounts in millions)

## Reconciliation of net income to NOI at share - cash basis for the trailing twelve months ended June 30, 2018

	For The TTM Ended June 30, 2018
Net income	\$ 148
Deduct:	
Loss from partially owned entities	33
Loss from real estate fund investments	39
Interest and other investment income, net	(22)
Net gains on disposition of wholly owned and partially owned assets	(24)
Loss from discontinued operations	47
NOI attributable to noncontrolling interests in consolidated subsidiaries	(67)
Add:	
Depreciation and amortization expense	440
General and administrative expense	146
Acquisition and transaction related costs	15
Our share of NOI from partially owned entities	270
Interest and debt expense	354
Income tax expense	43
NOI at share	<u>1,422</u>
Non cash adjustments for straight-line rents, amortization of acquired below-market leases, net and other	(75)
NOI at share - cash basis	<u>\$ 1,347</u>

## NOI at share - cash basis by segment:

	For The TTM Ended June 30, 2018
<b>New York:</b>	
Office (includes \$26MM of BMS NOI)	\$ 707
Retail	324
Residential	22
Alexander's	49
Hotel Pennsylvania	13
	<u>1,115</u>
<b>Other:</b>	
theMART (including trade shows)	105
555 California Street	49
Other investments	78
	<u>232</u>
NOI at share - cash basis	<u>\$ 1,347</u>

(Amounts in millions)

**Reconciliation of net income attributable to the Operating Partnership to EBITDA and EBITDA, as adjusted for the trailing twelve months ended June 30, 2018**

	<b>For The TTM Ended June 30, 2018</b>
Net income attributable to the Operating Partnership	\$ 171
Interest and debt expense	463
Depreciation and amortization	533
Income tax expense	44
EBITDA	1,211
Adjustments, net <sup>(1)</sup>	74
EBITDA, as adjusted	<u>\$ 1,285</u>

1. Includes income from our former Washington, DC segment, sold properties, our Real Estate Fund, gains on sale of real estate, impairment losses and other adjustments



(Amounts in millions)

**Reconciliation of theMART net income to EBITDA, NOI - cash basis and NOI - cash basis adding back free rent for the year ended December 31, 2011 and for the trailing twelve months ended June 30, 2018**

	For the Trailing Twelve Months Ended June 30, 2018	For the year ended December 31, 2011
Net income (loss)	\$ 36.0	\$ (4.5)
Interest and debt expense	18.7	31.2
Depreciation and amortization	39.5	21.6
Income tax expense	—	—
EBITDA	94.2	48.3
Non-cash adjustments and other	(0.7)	3.1
NOI - cash basis	93.5	51.4
Adding back free rent	10.1	2.9
NOI - cash basis adding back free rent	<u>\$ 103.6</u>	<u>\$ 54.3</u>

**Reconciliation of 555 California Street net income to EBITDA, NOI - cash basis and NOI - cash basis adding back free rent for the year ended December 31, 2012 and for the trailing twelve months ended June 30, 2018**

	For the Trailing Twelve Months Ended June 30, 2018 at share	For the year ended December 31, 2012 at share
Net income (loss)	\$ 6.9	\$ (4.6)
Interest and debt expense	18.6	22.0
Depreciation and amortization	25.5	28.5
Income tax expense	0.2	0.3
EBITDA	51.2	46.2
Non-cash adjustments and other	(1.8)	(9.1)
NOI - cash basis	49.4	37.1
Adding back free rent	4.3	1.1
NOI - cash basis adding back free rent	<u>\$ 53.7</u>	<u>\$ 38.2</u>



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SEPTEMBER 2018