

VORNADO

REALTY TRUST

MARCH 2019

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 and costs to complete, 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 economic and 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, 2018.

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

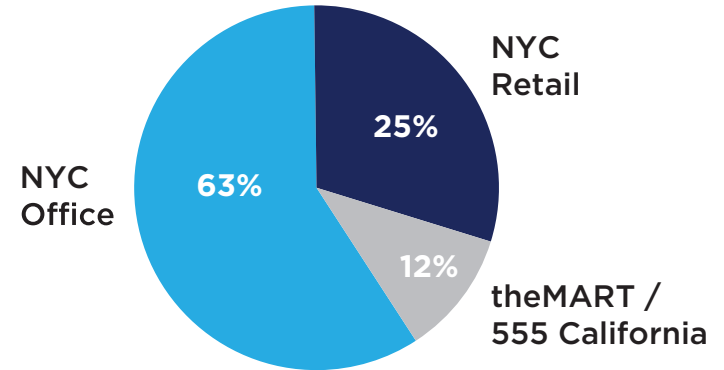
Market data and industry forecasts are used in this presentation, including data obtained from publicly available sources. These sources generally state that the information they provide has been obtained from sources believed to be reliable but the accuracy and completeness of the information are not 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 38MM SF (29.8MM SF at share)
- New York focused company, with an irreplaceable NYC portfolio generating 88% of the Company's NOI
- 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 street retail NOI 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

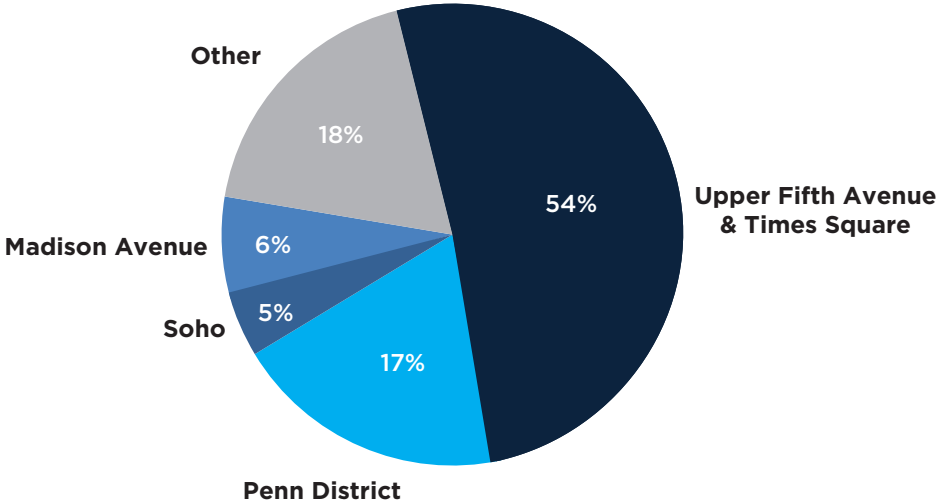
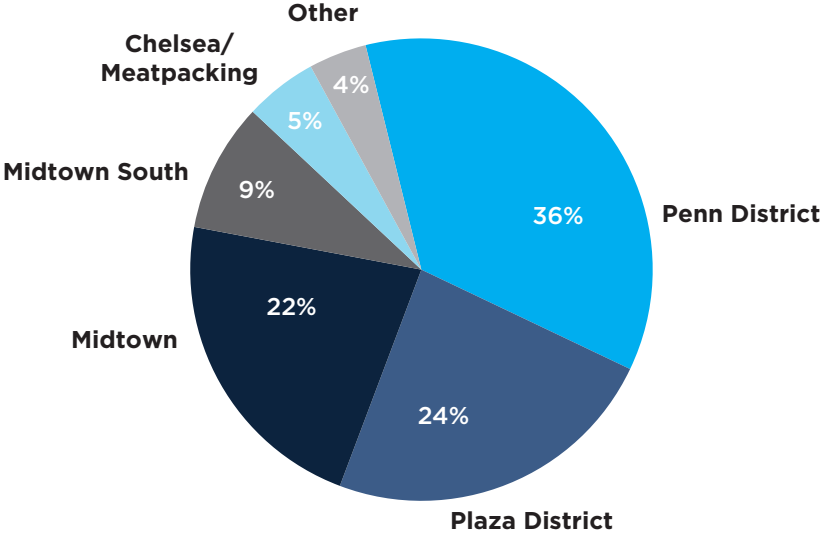
Components of NOI at share - Cash Basis⁽¹⁾



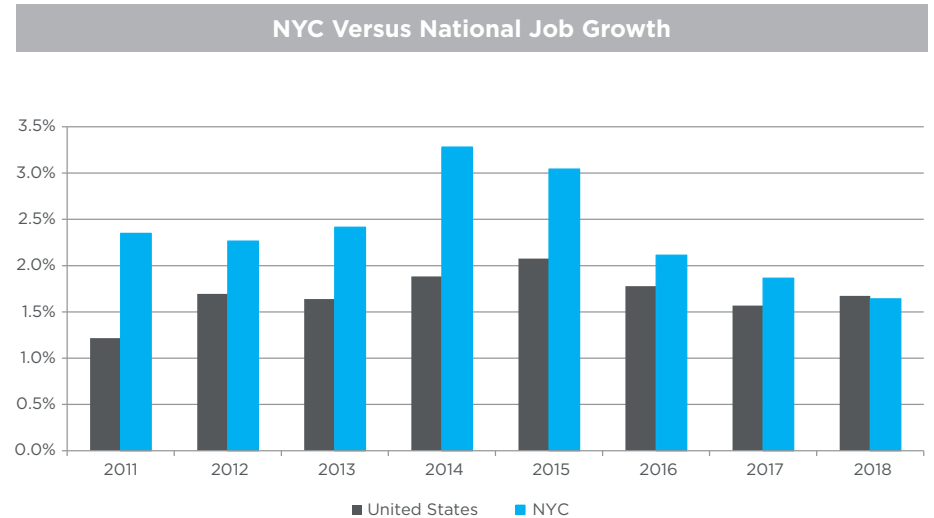
1. For the year ended December 31, 2018 excluding other investments (see page 36 for non-GAAP reconciliation)

NYC Office Submarket by Square Footage
As of 12/31/2018

NYC Retail Submarket by NOI at share - Cash Basis
for the Year Ended 12/31/2018



- New York is a global gateway city with strong 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
 - According to a recent Savills Studley report, New York ranks first as the world's premier tech center, overtaking San Francisco
 - 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 and expansion into Hudson Square
 - Disney purchase of 4 Hudson Square leasehold to build new headquarters



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

- Trading at a significant discount to management's estimate of NAV
- Only significant way to invest publicly in fast growing West Side of Manhattan
- Growth from creative-class new developments (1,260,000 SF at share)
 - 512 West 22nd Street
 - Farley Office and Retail Building
 - 260 Eleventh Avenue
 - 606 Broadway
- Penn District Redevelopment – over 9 million SF existing portfolio with significant NOI upside and value creation
 - 6.8 million SF of office with average in-place rents of \$64 PSF
 - PENN1 redevelopment commenced in 4Q18
 - PENN2 redevelopment (1.8 million rentable SF) to commence in 1Q20
 - Farley Office & Retail Building (850,000 rentable SF) commenced 1Q18
 - 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 immediate liquidity (~\$3.3 billion) to take advantage of market opportunities
 - Sale of \$1 billion of non-core assets and anticipated sellout of 220 Central Park South luxury condominiums will generate significant additional dry powder
 - Completed the sale of 11 condominium units at 220 Central Park South in 4Q18
- Attractive common dividend yield of 3.9% - highest among peers

COMPONENTS OF NET ASSET VALUE (AT SHARE)

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

	For the Year Ended December 31, 2018				
	NOI at Share - Cash Basis	Adjustments	Pro Forma NOI at Share - Cash Basis	Cap Rate	Value ⁽¹⁾
Office:					
New York	\$ 726	\$ (27) ⁽²⁾	\$ 699		
theMART	94	12 ⁽³⁾	106		
555 California Street	53	—	53		
Total Office	873	(15)	858	4.50%	19,067
New York - Retail	324	—	324	4.50%	7,200
New York - Residential	22	—	22	4.00%	550
	<u>\$ 1,219</u>	<u>\$ (15)</u>	<u>\$ 1,204</u>		<u>26,817</u>
Less: Market management fee (28,133,000 square feet in service at share at \$0.50 per square foot) at a 4.50% cap rate					(313)
					<u>\$ 26,504</u>
Other Asset Values:					
220 Central Park South - incremental value after repayment of debt and taxes					\$ 1,000
Cash, restricted cash and marketable securities					869
Alexander's Inc. ("Alexander's") (1,654,068 shares at \$304.74 per share as of December 31, 2018)					504
Hotel Pennsylvania					500
BMS (2018 NOI of \$27 at a 7.0x multiple)					189
Urban Edge Properties ("UE") (5,717,184 shares at \$16.62 per share as of December 31, 2018)					95
Real estate fund investments (VNO's share at fair value)					80
Pennsylvania Real Estate Investment Trust ("PREIT") (6,250,000 shares at \$5.94 per share as of December 31, 2018)					37
Other assets					730
Other construction in progress (at 110% of book value)					566
Total of other asset values					<u>\$ 4,570</u>
Liabilities (see following page)					<u>\$ (11,300)</u>
NAV					<u>\$ 19,774⁽¹⁾</u>
NAV per share (203.5 million shares on an OP basis as of December 31, 2018)					<u>\$ 97⁽¹⁾</u>

See notes on following page

COMPONENTS OF NET ASSET VALUE (AT SHARE)

(unaudited and in millions)

	Liabilities		
	As of December 31, 2018	Adjustments	Net
Consolidated contractual mortgage notes payable, net of noncontrolling interests' share	\$ 7,598	\$ (737) ⁽⁴⁾	\$ 6,861
Non-consolidated real estate debt	2,683	(581) ⁽⁵⁾	2,102
Corporate unsecured debt	850	—	850
Revolver/term loan	830	(750) ⁽⁴⁾	80
Other liabilities	482	—	482
Perpetual preferred (at redemption value)	925	—	925
Total Liabilities	13,368	\$ (2,068)	\$ 11,300

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 financial supplement are based on management's estimates, which are inherently uncertain. 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.

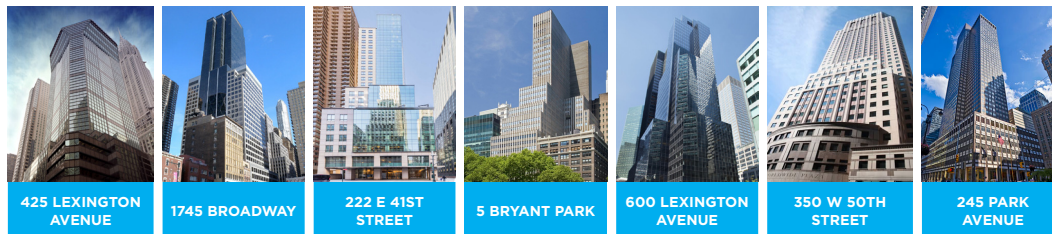
2. Adjustment to deduct BMS NOI for the year ended December 31, 2018.

3. Adjustment to reflect the annual real estate tax increase which will be billed to tenants in 2019.

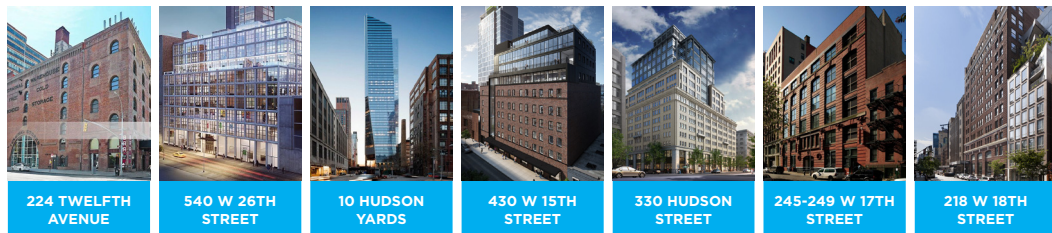
4. Debt related to 220 Central Park South.

5. Excludes our share of debt of Alexander's, UE, and PREIT as they are presented on an equity basis in other asset values.

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	10/2018	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	10/2018	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 \$67.31 (2/28/19), our NYC Office implied Price per Square Foot is \$522, with a Cap Rate of 8.0%.⁽¹⁾

1. Based on NOI and Cap Rates for other holdings per 12/31/2018 NAV Analysis

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

FORTRESS BALANCE SHEET

(Amounts in millions)

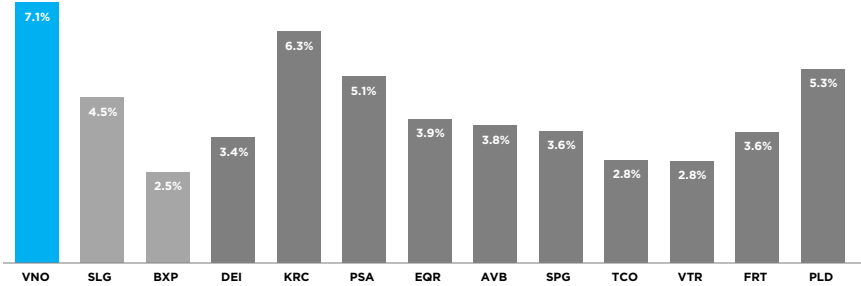
	AT 12/31/18
Secured debt	\$ 8,216
Unsecured debt	1,680
Pro rata share of non-consolidated debt	2,683
Less: noncontrolling interests' share of consolidated debt	(618)
Total debt	11,961
220 CPS (mortgage + term loan)	(1,487)
Projected cash proceeds from 220 Central Park South in excess of the \$1,487 debt repaid	(1,044)
Cash, restricted cash and marketable securities	(974)
Net Debt	\$ 8,456
EBITDA, as adjusted⁽¹⁾	\$ 1,263
Net Debt/EBITDA, as adjusted	6.7x

- Investment grade — Baa2/BBB
- \$2.4 BN in revolver capacity
- \$0.9 BN in cash
- Weighted average debt maturity — 3.8 years
- ~\$10 BN of unencumbered assets

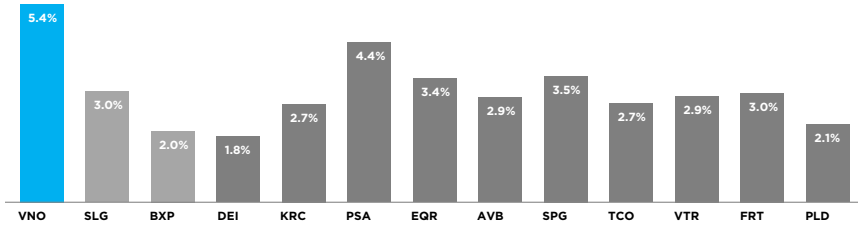
1. See page 37 for non-GAAP reconciliation

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 (2013-2018)



10-Year Same-Store NOI - Cash Basis CAGR (2008-2018)



1. Per reports published by Green Street Advisors for all companies other than Vornado. Vornado NOI (after corporate G&A) includes New York office, New York retail, ALX, 555 California Street, and theMART. Excludes investment income, the Real Estate Fund, and Hotel Pennsylvania.

LEADER IN REPOSITIONING AND MODERNIZING PROPERTIES

SELECT CASE STUDIES

(Amounts in thousands, except per share)



1290 AVENUE OF THE AMERICAS
2,113,000 SF



770 BROADWAY
1,183,000 SF



330 WEST 34TH STREET
722,000 SF



7 WEST 34TH STREET
477,000 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
Yield		17.4%		15.5%		14.9%		20.3%
Value Created⁽¹⁾	\$	444,000⁽²⁾	\$	588,900	\$	328,400	\$	271,700⁽³⁾
Value Created Per Share	\$	2.18	\$	2.90	\$	1.62	\$	1.34

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



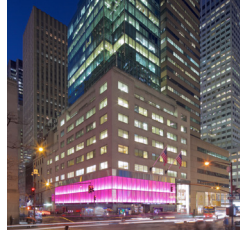
888 SEVENTH AVENUE



650 MADISON AVENUE



595 MADISON AVENUE



640 FIFTH AVENUE



689 FIFTH AVENUE

GRAND CENTRAL



330 MADISON AVENUE



90 PARK AVENUE

PENN DISTRICT



7 WEST 34TH STREET



PENN11



330 WEST 34TH STREET

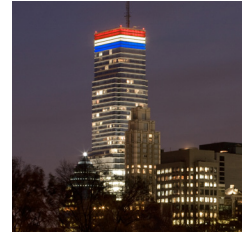


PENN1/PENN2



FARLEY OFFICE & RETAIL 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

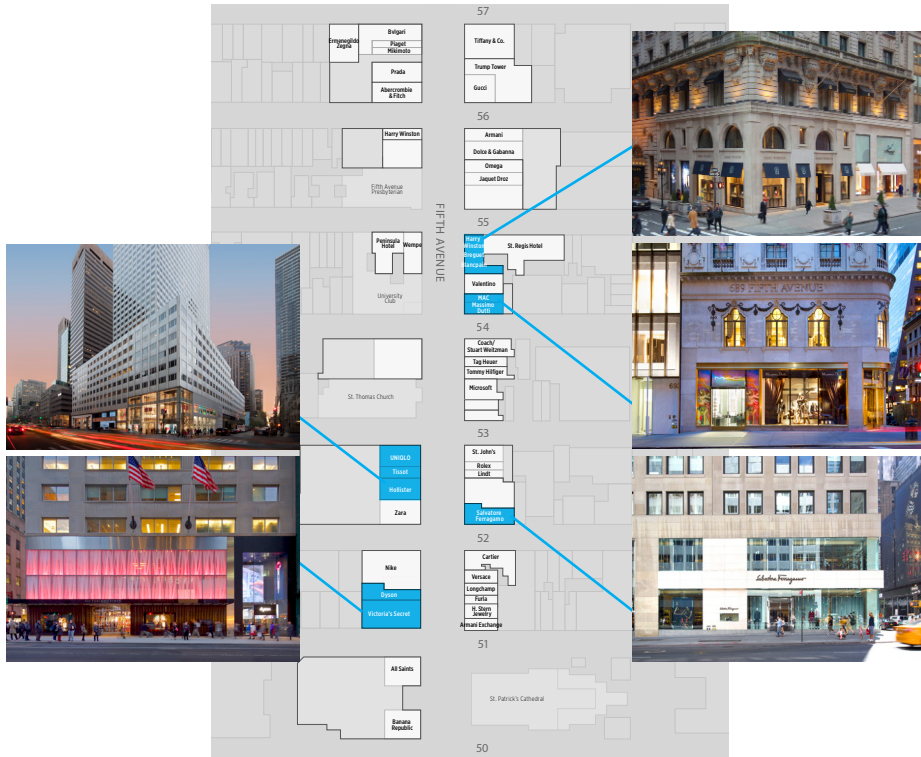


478-486 BROADWAY



435 SEVENTH AVENUE

Upper Fifth Avenue Own 23% of Frontage⁽¹⁾



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

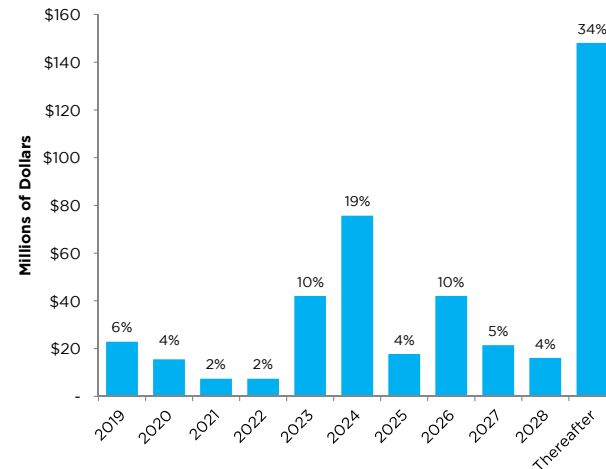
UPPER FIFTH AVENUE

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

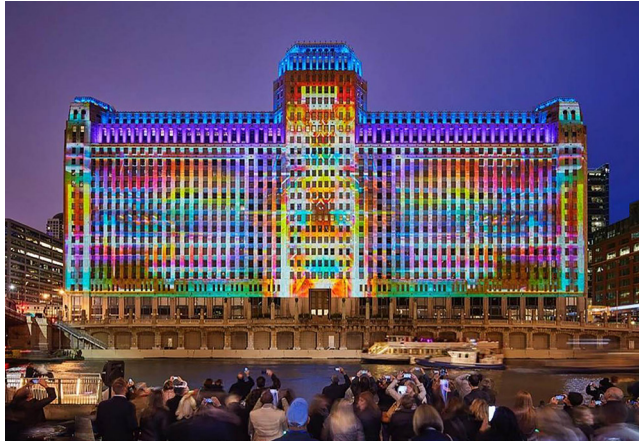
TIMES SQUARE

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 ⁽²⁾
Forever 21	2031
Nederlander Theater	2050

New York Retail Expirations by Revenue as of 12/31/2018
Weighted Average Lease Term: 7.6 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

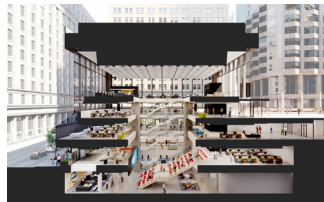
- 3,675,000 SF building - 94.8% Occupancy at 12/31/2018
- Located in River North, the hottest submarket in Chicago
- Between 2011 and 4Q18, converted over 950,000 SF in the building from showroom/trade show space to creative office space
- 3.1 million SF of total space leased since 2012
- 12/31/2018 Cash NOI (non-GAAP)⁽¹⁾ of \$103.6 million⁽²⁾ versus 2011 Cash NOI (non-GAAP)⁽¹⁾ of \$54.3 million
- In-place escalated rents average \$48.18 PSF as of 12/31/2018 (office \$43.71, showroom \$53.44 and retail \$54.87)
- In conjunction with the City of Chicago, theMART debuted *Art on theMART* on September 29, 2018. This curated series of digital artworks projects the work of renowned artists across the 2.5 acre exterior river-façade of theMART, creating the largest permanent digital art projection in the world.

Major Tenants:

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

1. See page 38 for non-GAAP reconciliation

2. The year ended December 31, 2018 Cash NOI includes the add back of (i) free rent and (ii) the estimated 80% tenant reimbursement of the \$15.1 million additional real estate tax expense accrual due to an increase in the tax-assessed value of theMART



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

- 1,821,000 SF building – 99.4% Occupancy at 12/31/2018
- 1.7 million SF of office space leased since 2012
- 12/31/2018 Cash NOI (non-GAAP)⁽¹⁾ of \$57.6 million at share (not including Cash NOI from approximately 78,000 SF of space under redevelopment, which is leased to Regus Spaces) versus 2012 Cash NOI (non-GAAP)⁽¹⁾ of \$38.2 million at share
- In-place escalated rents average \$75.60 PSF as of 12/31/2018

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. |
| - Sidley Austin | |



VORNADO

REALTY TRUST

GROWTH FROM DEVELOPMENT

WELL-POSITIONED WITH EXISTING ASSETS AND NEW DEVELOPMENTS CONCENTRATED IN THE FAST GROWING WEST SIDE



512 WEST 22ND STREET (55.0%)

173,000 SF
1Q19



606 BROADWAY (50.0%)

34,000 SF
Delivered



260 ELEVENTH AVENUE

340,000 SF
TBD



FARLEY OFFICE & RETAIL BUILDING (95.0%)

850,000 SF
3Q20



PENN1

2,545,000 SF
TBD



PENN2

1,800,000 SF
TBD



HUDSON YARDS

MANHATTAN WEST

PENN DISTRICT

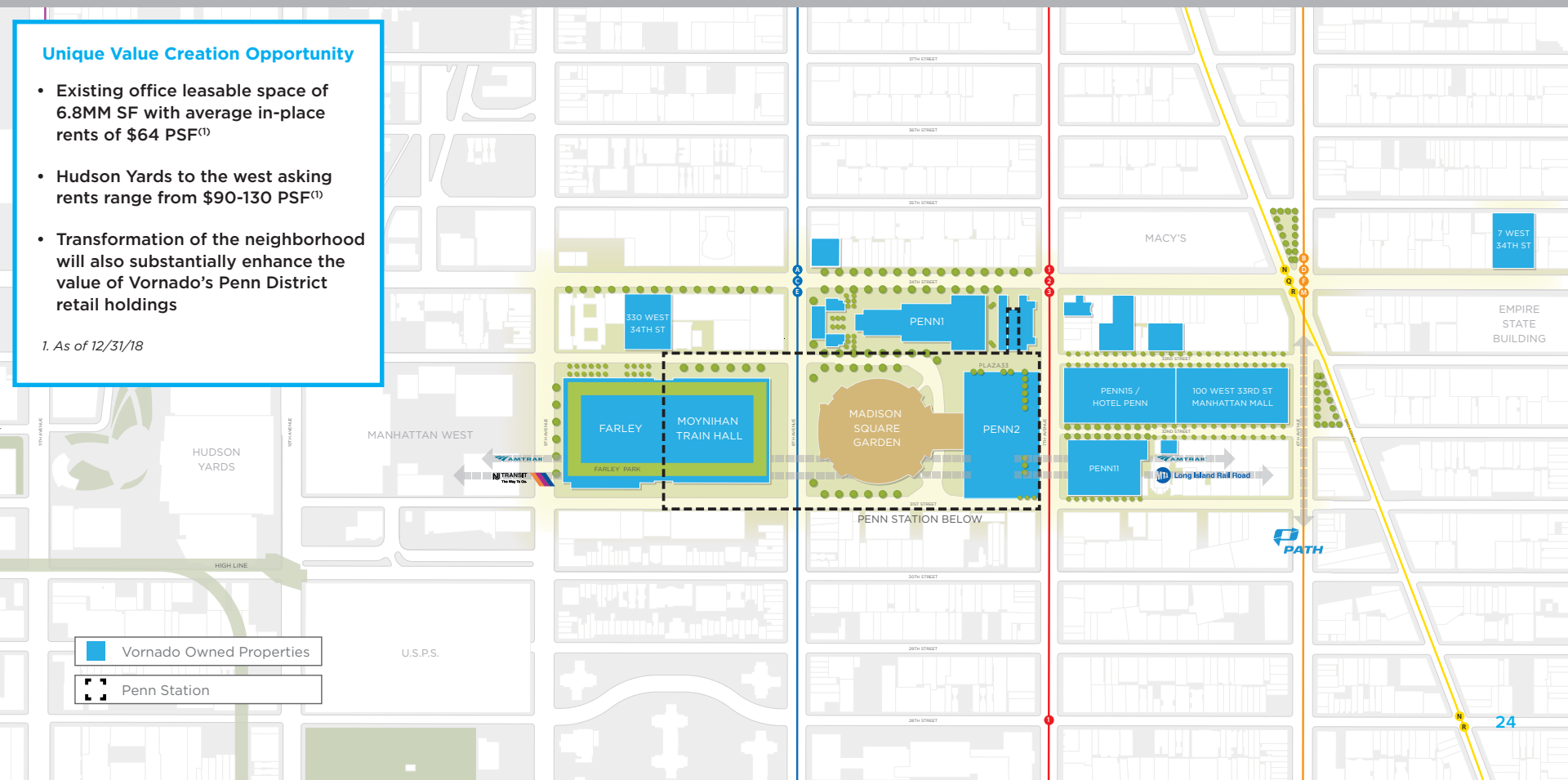


PENN DISTRICT | AN UNPRECEDENTED OPPORTUNITY

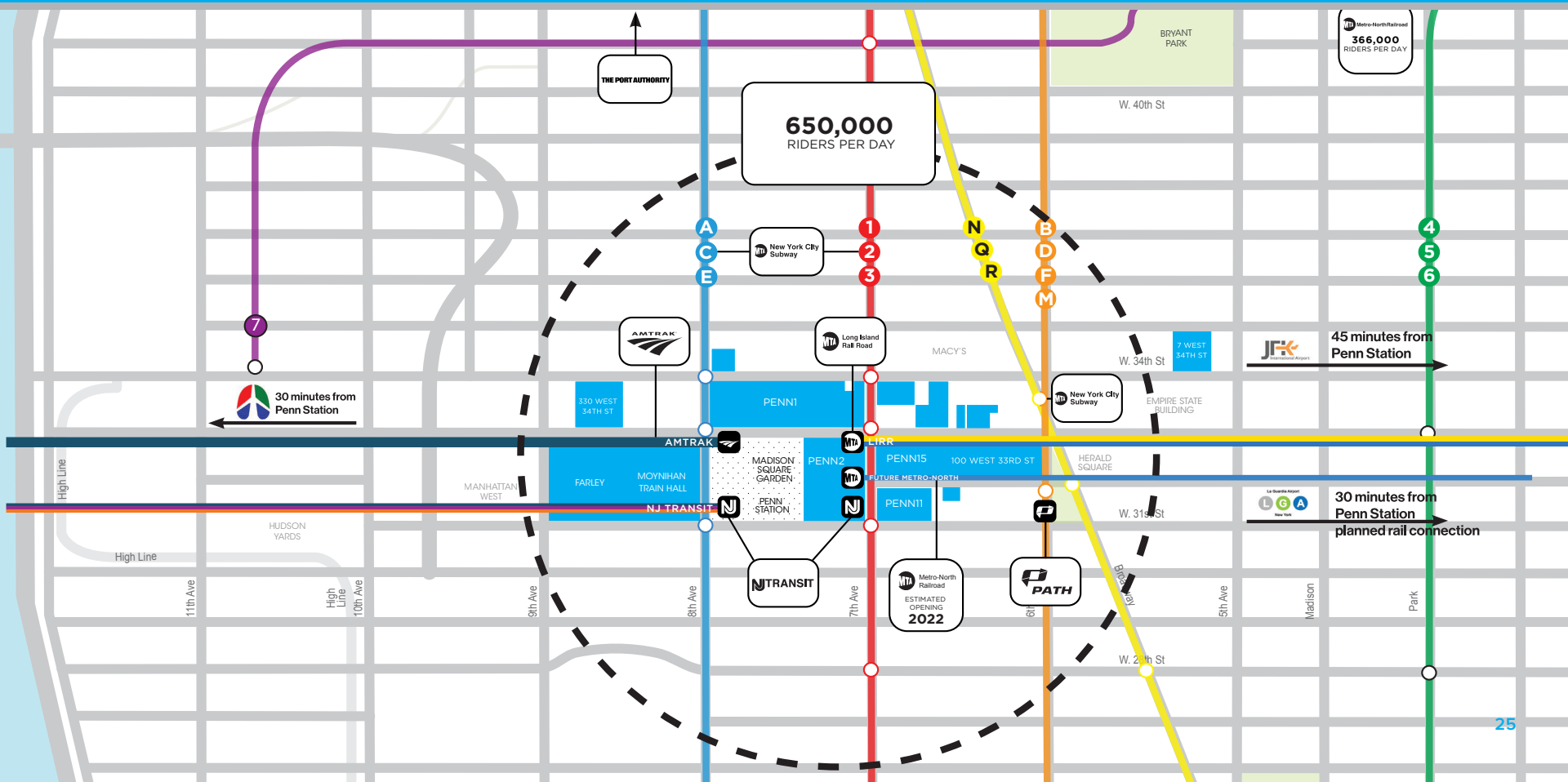
Unique Value Creation Opportunity

- Existing office leasable space of 6.8MM SF with average in-place rents of \$64 PSF⁽¹⁾
- Hudson Yards to the west asking rents range from \$90-130 PSF⁽¹⁾
- Transformation of the neighborhood will also substantially enhance the value of Vornado's Penn District retail holdings

1. As of 12/31/18

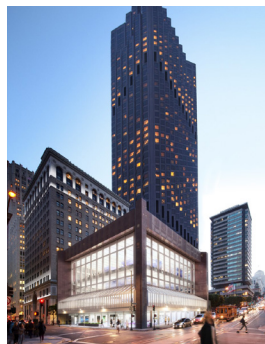


PENN DISTRICT | BEST POSITIONED FROM TRANSIT STANDPOINT



OUR CURRENT DEVELOPMENT PIPELINE IS EXPECTED TO INCREASE CASH NOI BY **-\$130MM (AT SHARE)** UPON STABILIZATION

(Amounts in thousands)



	PENN1	512 WEST 22ND STREET	606 BROADWAY	345 MONTGOMERY STREET	FARLEY OFFICE & RETAIL BUILDING⁽³⁾	TOTAL CURRENT PROJECTS
	2,545,000 SF	173,000 SF	34,000 SF	78,000 SF	850,000 SF	3,680,000 SF
Full Quarter Stabilized Operations	N/A	Q3 2020	Q2 2020	Q3 2020	Q2 2022	
VNO Share	100.0%	55.0%	50.0%	70.0%	95.0%	
Development Budget (at Share) ⁽²⁾						
Amount Expended	\$ 9,725	\$ 52,505	\$ 25,601	\$ 15,284	\$ 137,267 ⁽⁴⁾	\$ 240,382
Remaining	\$ 190,275	\$ 19,495	\$ 4,399	\$ 16,716	\$ 622,733	\$ 853,618
Total Incremental Budget	\$ 200,000 ⁽⁵⁾	\$ 72,000	\$ 30,000	\$ 32,000	\$ 760,000	\$ 1,094,000

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

2. Excludes land and acquisition costs

3. Farley Office & Retail Building figures reflect increase in ownership from 50.1% to 95% post-September 30, 2018

4. Excludes our share of the upfront contribution of \$230,000 and net of anticipated historic tax credits

5. We expect the final budget will exceed \$200,000 after anticipated scope changes

FUTURE REDEVELOPMENT OPPORTUNITIES PROVIDE BUILT-IN SOURCE OF ADDITIONAL GROWTH



PENN2
1,800,000 SF



HOTEL PENNSYLVANIA
2,800,000 SF



260 ELEVENTH AVENUE
340,000 SF

Note: Shown at estimated rentable SF, subject to change

FARLEY OFFICE & RETAIL BUILDING DEVELOPMENT BEGINNING THE TRANSFORMATION OF PENN DISTRICT

- Recently acquired an additional 44.9% from the Related Companies, increasing Vornado's ownership interest to 95%, in the joint venture that has a 99-year lease for the commercial space at the historic Farley Post Office and Retail Building
- The joint venture is developing the Farley Office and Retail Building, which will include approximately 850,000 rentable square feet of commercial space, comprised of approximately 730,000 square feet of office space and approximately 120,000 square feet of retail space
- Total budget of \$760 million at share
- Expected delivery 3Q 2020





34TH STREET LOBBY ENTRY



34TH STREET LOBBY



34TH STREET LOBBY RECEPTION DESK



SOCIAL STAIR



SECOND FLOOR LOUNGE



33RD STREET LOBBY LIBRARY



34TH STREET LOBBY

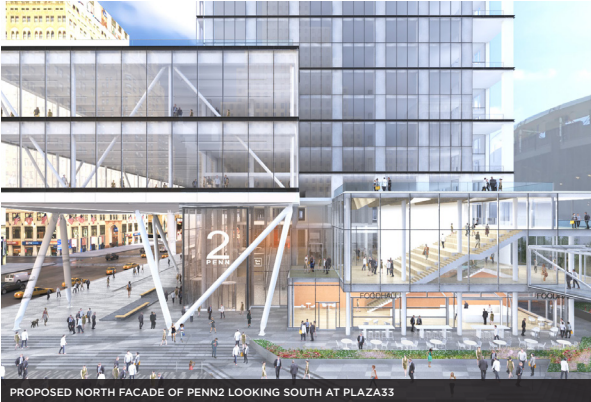
1. We expect the final budget will exceed \$200,000 after anticipated scope changes
2. Incremental NOI valued at 4.5% cap rate, less development costs excluding recurring TI/LCs that would have been incurred on re-tenanting the building irrespective of this capital project

PENN1

2.54MM SF

Development Cost	\$	200MM ⁽¹⁾
In-Place Office Rent	\$	67 PSF
Average Market Rent After Development	\$	87 PSF
Incremental Rent	\$	20 PSF
Incremental NOI	\$	48MM
Yield on Capital		24%
Value Created ⁽²⁾	\$	867MM
Value Created Per Share	\$	4.25

Average remaining office lease term is 5.4 years

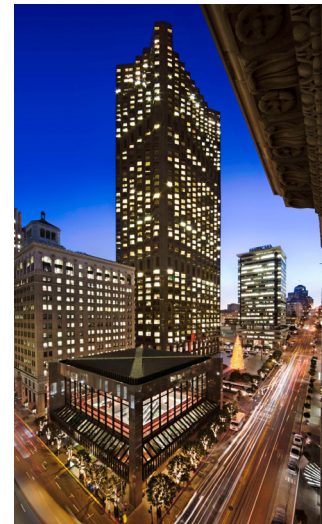




NATIONALLY RECOGNIZED, INDUSTRY-LEADING SUSTAINABILITY PROGRAM

- 5-time Energy Star Partner of the Year, Sustained Excellence recipient 2018
- 26 million square feet of owned and managed LEED certified buildings
- Largest landlord of LEED certified buildings in New York City with over 20 million SF. All new commercial developments will be, at minimum, LEED Gold certified
- NAREIT Leader in the Light award 2018, 9th year in a row
- Global Real Estate Sustainability Benchmark (GRESB) “Green Star” since 2013; #3 among all listed US Real Estate companies, 2018
- 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 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.

(Amounts in millions)

Reconciliation of Vornado Realty Trust Net income to NOI at share - Cash Basis for the year ended December 31, 2018

	For the Year Ended December 31, 2018
Net income	\$ 423
Deduct:	
Income from partially owned entities	(9)
Loss from real estate fund investments	89
Interest and other investment income, net	(17)
Net gains on disposition of wholly owned and partially owned assets	(246)
Purchase price fair value adjustment	(44)
Income from discontinued operations	(1)
NOI attributable to noncontrolling interests in consolidated subsidiaries	(71)
Add:	
Depreciation and amortization expense	447
General and administrative expense	142
Transaction related costs, impairment and other	31
NOI from partially owned entities	253
Interest and debt expense	348
Income tax expense	38
NOI at share	<u>1,383</u>
Non cash adjustments for straight-line rents, amortization of acquired below-market leases, net and other	(45)
NOI at share - Cash Basis	<u>\$ 1,338</u>

NOI at share - Cash Basis by segment:

	For the Year Ended December 31, 2018
New York:	
Office (includes \$27MM of BMS NOI)	\$ 726
Retail	324
Residential	22
Alexander's	48
Hotel Pennsylvania	12
	<u>1,132</u>
Other:	
theMART (including trade shows)	94
555 California Street	53
Other investments	59
	<u>206</u>
NOI at share - Cash Basis	<u>\$ 1,338</u>

(Amounts in millions)

Reconciliation of Net income attributable to the Operating Partnership to EBITDA and EBITDA, as adjusted for the year ended December 31, 2018

	For the Year Ended December 31, 2018
Net income attributable to the Operating Partnership	\$ 476
Interest and debt expense	448
Depreciation and amortization	521
Income tax expense	38
EBITDA	<u>1,483</u>
Adjustments, net ⁽¹⁾	(220)
EBITDA, as adjusted	<u>\$ 1,263</u>

1. Includes income from our sold properties, our Real Estate Fund, gains on sale of real estate, impairment losses, change in fair value of marketable securities, gains on sale of 220 Central Park South condominium units and other adjustments

(Amounts in millions)

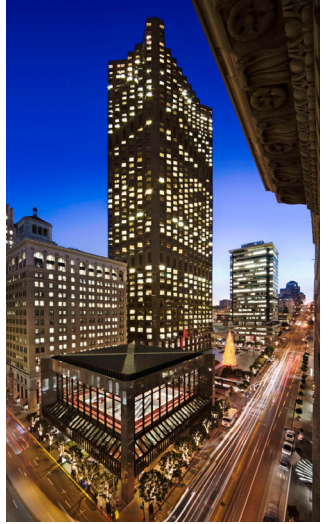
Reconciliation of theMART Net income to EBITDA, NOI - Cash Basis and NOI - Cash Basis adding back free rent for the year ended December 31, 2011 and for the year ended December 31, 2018

	For the Year Ended December 31, 2018	For the Year Ended December 31, 2011
Net income (loss)	\$ 22.6	\$ (4.5)
Interest and debt expense	18.7	31.2
Depreciation and amortization	39.3	21.6
Income tax expense	—	—
EBITDA	<u>80.6</u>	<u>48.3</u>
Non-cash adjustments and other	2.5	3.1
NOI - Cash Basis	<u>83.1</u>	<u>51.4</u>
Adding back real estate tax expense adjustment	12.1	—
Adding back free rent	<u>8.4</u>	<u>2.9</u>
NOI - Cash Basis adding back free rent and real estate tax expense adjustment ⁽¹⁾	<u>\$ 103.6</u>	<u>\$ 54.3</u>

Reconciliation of 555 California Street Net income to EBITDA, NOI at share - Cash Basis and NOI at share - Cash Basis adding back free rent for the year ended December 31, 2012

	For the Year Ended December 31, 2018 at share	For the Year Ended December 31, 2012 at share
Net income (loss)	\$ 11.0	\$ (4.6)
Interest and debt expense	18.1	22.0
Depreciation and amortization	25.9	28.5
Income tax expense	0.5	0.3
EBITDA	<u>55.5</u>	<u>46.2</u>
Non-cash adjustments and other	(2.0)	(9.1)
NOI at share - Cash Basis	<u>53.5</u>	<u>37.1</u>
Adding back free rent	4.1	1.1
NOI at share - Cash Basis adding back free rent	<u>\$ 57.6</u>	<u>\$ 38.2</u>

1. The year ended December 31, 2018 Cash NOI includes the add back of (i) free rent and (ii) the estimated 80% tenant reimbursement of the \$15.1 million additional real estate tax expense accrual due to an increase in the tax-assessed value of theMART



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MARCH 2019