

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, DC 20549

FORM 8-K

CURRENT REPORT  
PURSUANT TO SECTION 13 OR 15(d) OF THE  
SECURITIES EXCHANGE ACT OF 1934

Date of Report (Date of earliest event reported):  
April 7, 2023

**VORNADO REALTY TRUST**  
(Exact Name of Registrant as Specified in Charter)

**Maryland**  
(State or Other  
Jurisdiction of Incorporation)

**No. 001-11954**  
(Commission  
File Number)

**No. 22-1657560**  
(IRS Employer  
Identification No.)

**VORNADO REALTY L.P.**  
(Exact Name of Registrant as Specified in Charter)

**Delaware**  
(State or Other  
Jurisdiction of Incorporation)

**No. 001-34482**  
(Commission  
File Number)

**No. 13-3925979**  
(IRS Employer  
Identification No.)

**888 Seventh Avenue**  
**New York, New York**  
(Address of Principal Executive offices)

**10019**  
(Zip Code)

Registrant's telephone number, including area code: (212) 894-7000  
Former name or former address, if changed since last report: N/A

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instructions A.2.):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)  
 Soliciting material pursuant to Rule 144a-12 under the Exchange Act (17 CFR 240.144a-12)  
 Pre-commencement communications pursuant to Rule 144-2(b) under the Exchange Act (17 CFR 240.144-2(b))  
 Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Registrant	Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Vornado Realty Trust	Common Shares of beneficial interest, \$.04 par value per share Cumulative Redeemable Preferred Shares of beneficial interest, liquidation preference \$25.00 per share:	VNO	New York Stock Exchange
Vornado Realty Trust	5.40% Series L	VNO/PL	New York Stock Exchange
Vornado Realty Trust	5.25% Series M	VNO/PM	New York Stock Exchange
Vornado Realty Trust	5.25% Series N	VNO/PN	New York Stock Exchange
Vornado Realty Trust	4.45% Series O	VNO/PO	New York Stock Exchange

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

**Item 7.01. Regulation FD Disclosure.**

On April 10, 2023, Vornado Realty Trust (the "Company"), the general partner of Vornado Realty L.P., issued a press release announcing that the Company released its 2022 Environmental, Social and Governance ("ESG") report. The ESG report was posted on the Company's website on April 7, 2023.

The press release and the ESG report are attached as Exhibit 99.1 and 99.2, respectively, to this Current Report on Form 8-K and are incorporated herein by reference solely for purposes of this Item 7.01 disclosure.

Exhibit 99.1 and 99.2 hereto shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the Exchange Act), or otherwise subject to the liabilities under that Section and shall not be deemed to be incorporated by reference into any filing of Vornado Realty Trust or Vornado Realty L.P. under the Securities Act of 1933, as amended, or the Exchange Act.

**Item 9.01. Financial Statements and Exhibits.**

(d) Exhibits.

The following exhibits are being furnished as part of this Current Report on Form 8-K:

<a href="#">99.1</a>	Vornado Realty Trust press release dated April 10, 2023
<a href="#">99.2</a>	2022 ESG report
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

**SIGNATURE**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

**VORNADO REALTY TRUST**  
(Registrant)

By: /s/ Deirdre Maddock  
Name: Deirdre Maddock  
Title: Chief Accounting Officer (duly authorized officer and principal accounting officer)

Date: April 10, 2023

**SIGNATURE**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

**VORNADO REALTY L.P.**  
(Registrant)

By: VORNADO REALTY TRUST,  
Sole General Partner

By: /s/ Deirdre Maddock  
Name: Deirdre Maddock  
Title: Chief Accounting Officer of Vornado Realty Trust, sole General Partner of Vornado Realty L.P. (duly authorized officer and principal accounting officer)

Date: April 10, 2023

## PRESS RELEASE

# Vornado Releases 2022 Environmental, Social, & Governance Report

New York City | April 10, 2023

NEW YORK.....VORNADO REALTY TRUST (NYSE: VNO) announced today that it released its 2022 Environmental, Social, & Governance ("ESG") report.

This ESG report is Vornado's fourteenth consecutive annual report which highlights the Company's industry-leading accomplishments in sustainability and provides key metrics on the Company's ESG priorities. Key ESG achievements include:

- Procured 100% renewable energy credits (RECs) for electricity directly managed by Vornado in the key markets in which we operate. These RECs include those sourced from hydroelectric, solar and wind facilities located in the States of New York and California.
- Achieved a 28% reduction in overall energy consumption across our in-service office portfolio, since 2009.
- Reached a 64% waste diversion rate this year across our in-service office portfolio against our 75% long-term target.
- Received multiple awards recognizing our continued industry leadership in sustainability including the 12<sup>th</sup> NAREIT Leader in the Light Award; Energy Star Partner of the Year with Sustained Excellence and Global "Sector Leader" for Diversified Office/Retail REITs in the Global Real Estate Sustainability Benchmark (GRESB), ranking #1 in the USA amongst peers. Overall, Vornado placed 3<sup>rd</sup> among 112 responding listed companies within the Americas.
- Launched community programming at THE PENN District through our Worklife program.
- Continued to focus on board refreshment with the appointment of Raymond J. McGuire to the Board of Trustees.

Our report, along with expanded information on Vornado's ESG programs, can be found on the Company's website located at [www.vno.com](http://www.vno.com). Vornado Realty Trust is a fully-integrated equity real estate investment trust.

## Contact

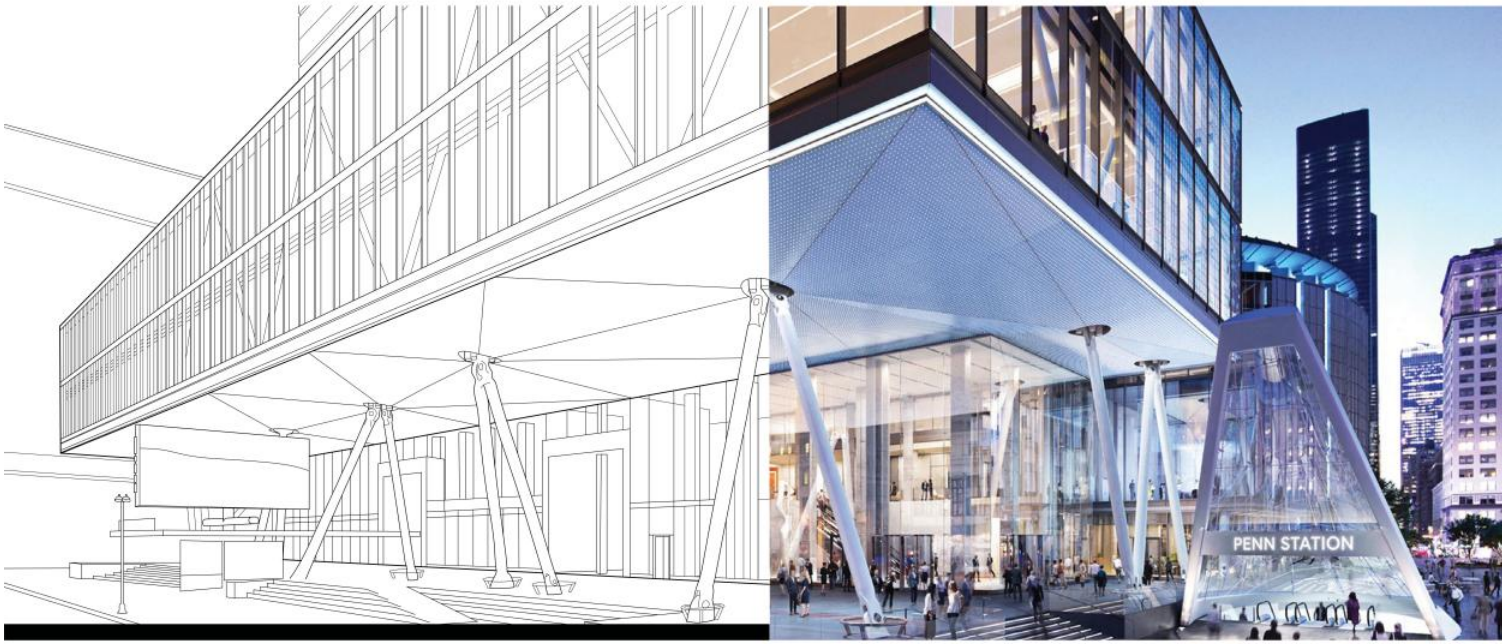
Thomas J. Sanelli

(212) 894-7000

Certain statements contained herein may constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. 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. Our future results, financial condition and business 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 other similar expressions in this press release. We also note the following forward-looking statements: in the case of our development and redevelopment projects, the estimated completion date, estimated project cost, projected incremental cash yield, stabilization date and cost to complete; and estimates of future capital expenditures, dividends to common and preferred shareholders and operating partnership distributions. For a discussion of factors that could materially affect the outcome of our forward-looking statements and our future results and financial condition, see "Risk Factors" in Part I, Item 1A, of our Annual Report on Form 10-K for the year ended December 31, 2022. Currently, some of the factors are the increase in interest rates and inflation and the continuing effect of the COVID-19 pandemic on our business, financial condition, results of operations, cash flows, operating performance and the effect that these factors have had and may continue to have on our tenants, the global, national, regional and local economies and financial markets and the real estate market in general.

NYSE: VNO | [WWW.VNO.COM](http://WWW.VNO.COM)





# Environmental, Social & Governance 2022

April 2023

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## From Our Chairman



Our Board and senior management are proud of Vornado's national leadership in ESG, improving our communities, our buildings, and our tenant experiences. We continue to build upon our Vision 2030 and Science Based Target commitment through our robust ESG program. Our complete plan can be found on our website at [www.vno.com/sustainability](http://www.vno.com/sustainability).

Key achievements include:

- Procured 100% renewable energy credits (RECs) for electricity directly managed by Vornado in the key markets in which we operate. These RECs include those sourced from hydroelectric, solar and wind facilities located in the States of New York and California.
- Achieved a 28% reduction in overall energy consumption across our in-service office portfolio, since 2009
- Reached a 64% waste diversion rate this year across our in-service office portfolio against our 75% long-term target
- Received multiple awards recognizing our continued industry leadership in sustainability including the 12th NAREIT Leader in the Light Award; Energy Star Partner of the Year with Sustained Excellence and Global "Sector Leader" for Diversified Office/Retail REITs in the Global Real Estate Sustainability Benchmark (GRESB), ranking #1 in the USA amongst peers

We use data to measure progress against our goals, align our goals with our tenants, plan for our longer-term projects and engage with our stakeholders in meaningful ways. We use carbon accounting software, energy audits and models and building automation software to:

- Manage our portfolio-wide waste, water and energy reduction strategies
- Create roadmaps for each building to understand how to achieve carbon neutrality
- Provide accurate and actionable data for our measurement, verification and reporting requirements

We have expanded services focused on the health and well-being of our best-in-class employees with continuing education and career development. Through our Vornado Volunteers program, our employees supported local organizations including Habitat for Humanity, Breaking Ground, the Central Park Conservancy and Project Cicero. In THE PENN DISTRICT, we launched WorkLife, Vornado's amenity ecosystem that allows our tenants, employees and communities to focus on work and self-care. We offer regular thought leadership, entertainment and wellness programs focused on supporting our organizations and individuals.

Our Board, and particularly our Nominating and Governance Committee, is assigned with oversight of ESG, which includes climate change risk. In 2023, we continued the assignment of ESG performance metrics as part of our Executive Compensation program. Our discussion on corporate governance is included in our proxy statement, which can be viewed at [www.vno.com/proxy](http://www.vno.com/proxy) and the governance section of our website at [www.vno.com/governance](http://www.vno.com/governance). In 2023, we will continue to monitor developments from the Securities and Exchange Commission on potential rule making for climate disclosures. Our ESG narrative is told with transparency and supported by data. All can be found at [www.vno.com/sustainability](http://www.vno.com/sustainability).

Thanks to Lauren Moss, Samantha Benvenuto and Steven Borenstein who lead our ESG efforts.

Steven Roth  
Chairman of the Board and  
Chief Executive Officer

## Key Achievements in 2022

Vornado Realty Trust is a fully-integrated Real Estate Investment Trust (REIT). Vornado's portfolio is concentrated in the nation's key market — New York City — along with premier assets in both Chicago and San Francisco. Vornado is also the real estate industry leader in sustainability policy.

### GRESB Sector Leader

- Global "Sector Leader" for Diversified Office/Retail REITs in the Global Real Estate Sustainability Benchmark (GRESB), ranking #1 in the USA among peers. Overall, Vornado placed 3rd among 112 responding Listed companies within the Americas.
- "Green Star" distinction for the 10th time and a 5-star rating.
- In GRESB, scored an "A" for its ESG public reporting.



### 12 Time Leader in the Light Award Winner

- National Association of Real Estate Investment Trusts (NAREIT) respected Leader in the Light Award for sustainability for diversified REITs for the 12th time.
- This annual award honors NAREIT member companies that have demonstrated superior and sustained ESG practices.



### Energy Efficiency Target

Vornado continues to progress towards a 50% reduction by 2030 in energy consumption against our 2009 baseline year.

**28%** is our progress on this commitment in 2022

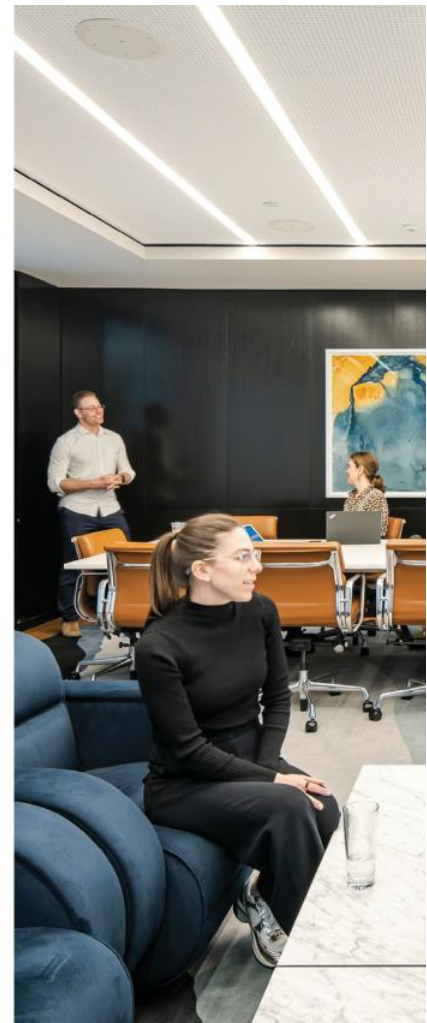
### Live.Work.Do

Vornado launched our successful community programming at THE PENN DISTRICT, including TED talks, health and wellness programming and offerings for our community and expanded this program into San Francisco and Chicago.



### Board Refreshment

In 2022, Mr. Raymond J. McGuire, President of Lazard Ltd, joined our Board of Trustees. He has also joined the Compensation Committee of the Board.





## 2022: Another Year of Excellence

### Carbon Disclosure Project

Vornado maintained a Carbon Disclosure Project (CDP) response score of "B" with improvement in disclosure acumen, progress on our goals, assessment of risk and opportunities, and regulation preparedness.

### S&P Global Corporate Sustainability Assessment (CSA)

Vornado performed in the top quintile for the Real Estate Industry in the S&P Global Corporate Sustainability Assessment (CSA).

### EP100 Member

Vornado is 99% of the way to its EP100 goal, achieving a 50% increase in Energy Productivity in 2022 while continuing to align its energy management at office buildings with the Department of Energy's ISO 50001 Program.

### LEED Certification

Vornado has certified 95% of our office portfolio with 84% at LEED Gold or Platinum.

### ENERGY STAR Partner of the Year with Sustained Excellence

8th time with this distinction, demonstrating our long-term partnership with ENERGY STAR.

### Science Based Targets

As of 2022, we have reduced our Scope 1 & 2 location-based and market-based emissions by 1% and 54% respectively over our 2019 baseline.

### Water Reduction

In 2022, Vornado achieved a 30% water reduction across our portfolio against our 2019 baseline.

### Waste Diversion Progress

In 2022, Vornado achieved a 64% commercial waste diversion against our 2019 baseline.



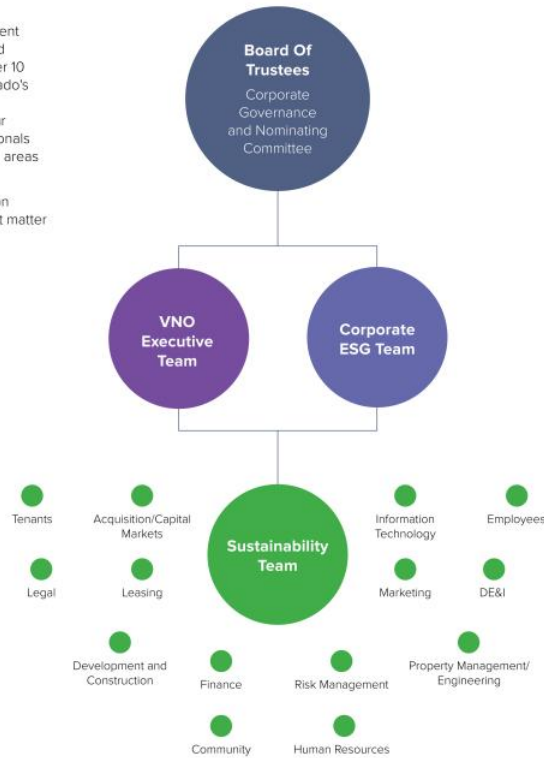
# ESG Governance

GRI 2-6, 2-9, 2-10, 2-12, 2-13, 2-14, 3-1, 3-2, 3-3

Vornado has long believed a focus on sustainability, inclusive of environmental, social and governance tenets, is responsible management of our business and important to our tenants, investors, employees, and communities. It has been central to Vornado's business strategy for over 10 years. The Corporate Governance and Nominating Committee of Vornado's Board of Trustees is assigned the oversight of ESG matters while our Corporate ESG Team oversees our strategy and goal development. Our sustainability initiatives are carried out by a dedicated team of professionals that work directly with our business units to integrate E, S and G into all areas of our company.

Our Corporate ESG Team is comprised of our senior decision makers on corporate strategy as well as our pertinent divisional heads and subject matter experts. The team includes the following roles:

- Lead Trustee
- President and Chief Financial Officer
- EVP, Finance and Chief Administrative Officer
- SVP, Corporation Counsel
- SVP, Chief Sustainability Officer
- SVP, Human Resources



**The Board of Trustees** is tasked with oversight matters including climate change risk, DE&I, and capital management. They receive quarterly reports from VNO's Executive Team on ESG and an annual presentation from the SVP, Chief Sustainability Officer. The Corporate Governance and Nominating Committee oversees our ongoing ESG program and sustainability initiatives.

**The VNO Executive Team** is responsible for execution and goal setting for the organization. ESG metrics are a key component of the Executive Compensation Program and are included in our 2023 Long-term Performance (LTPP), generally raising the required achievement in 2023 ESG metrics versus 2022 when measured against GHG emissions reductions, GRESB score, and other achievements.

**The Corporate ESG Team** is responsible for engagement, investor communication and oversight and execution of ESG strategy. The Team has a schedule of annual investor engagement on a frequent basis and communication among business units.

**The Sustainability Team** is responsible for ESG implementation within respective areas of focus. This includes daily discussions and active collaboration on specific projects as well as operations and management. The Sustainability Team reports to the VNO Executive Team and the Corporate ESG Team.

**ESG strategy** is integrated across the entire organization, including business units and stakeholder groups. There is frequent communication with respective heads of management.

# Environmental

Our objective at Vornado is to reduce the energy, water, and resource intensity of our build through efficient management and informed decision-making. We strive to achieve year-over reductions in utility and resource consumption across our portfolio.

## Energy Reduction Goal

**28%** Is our progress on this commitment in 2022

Energy efficiency is the initial and prioritized step towards achievement of carbon neutrality. Vornado has a longstanding commitment of increasing its energy efficiency 50% by 2030 using a 2009 base year.

## Renewable Procurement

**100%** of directly procured electricity by Vornado

Renewable electricity procured for New York City and San Francisco is from a combination of local hydroelectric, wind, and solar facilities. Chicago renewable power is sourced from national wind facilities.

## Organics Collection

**94%** access to organics collection programs

We have rolled out organics collection programs at 94% of our office portfolio, representing 25.7 million SF. In addition, we have partnered with BMS to conduct training on proper waste handling procedures to ensure tenant waste separation is maintained during collection and storage.

## Embodied Carbon

In 2022 Vornado completed embodied carbon studies for The Farley Building and PENN 1. Although this is a new area of research for the building sector, we are committed to enhancing embodied carbon performance and developing a comprehensive embodied carbon framework for new construction, renovation, and interior fit-out projects.



The Farley Building

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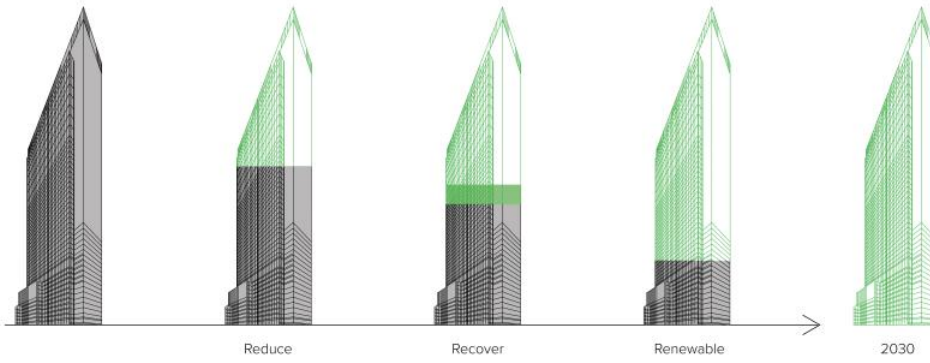
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**Vornado's Commitment To Carbon Neutrality**

Vision 2030 is Vornado's commitment to reach carbon neutrality. We are relying on technology, as well as meaningful stakeholder collaboration with our tenants, our employees, and our communities. In 2021, we made an SBTi commitment to reduce our Scope 1 and 2 emission intensity by 64% per SF by 2030 below a 2019 base year. Our commitment is 1.5°C-aligned, the most ambitious designation offered.



Rendering of PENN 1



**Reduce**

We continue to prioritize energy efficiency through building upgrades and retrofits including:

- more efficient equipment and systems,
- operational changes to more effectively manage and permanently reduce peak demands,
- engagement with tenants to implement best practices, high efficiency build outs and align efficiency and sustainability goals, and
- providing high performance guidelines for future build outs.

We continue outreach and engagement with our existing tenants to identify opportunities to reduce energy consumption and tenant metered electricity costs. This yields dual benefits: buildings continue to provide optimal comfort conditions, and these partnerships enable more holistic operating cost and emissions reductions so that Vornado remains best in class.

\*Any information relating to forward-looking statements, targets, goals, and progress against goals was not subject to Deloitte & Touche LLP's review and, accordingly, Deloitte & Touche LLP does not express a conclusion or any form of assurance on such information.

**Recover**

As usage is reduced, we identify opportunities to recover discarded or waste energy. This is accomplished by recapturing heat that would otherwise be ejected from our cooling towers and reintroduced to make hot water. We also replace fossil-fuel based heating and cooling equipment with ultra-high efficiency electric chillers as existing equipment reaches end of useful life. We also monitor refrigerant use, a very high emitter of GHGs, yet typically excluded from emissions calculations.

**Renewable**

Lastly, we focus on integration of renewables and grid modernization of our portfolio through:

- evaluation of all available outdoor spaces for the deployment of solar panels, micro-wind turbines, and battery storage,
- incorporation of renewables into development projects where feasible, and
- purchase of renewable energy credits for all of our electricity.

By reducing usage as much as possible, recovering wasted energy, and deploying onsite renewables while the utility electric and steam go green, we will reduce the amount of purchased electricity RECs and offsets required to meet Vision 2030.

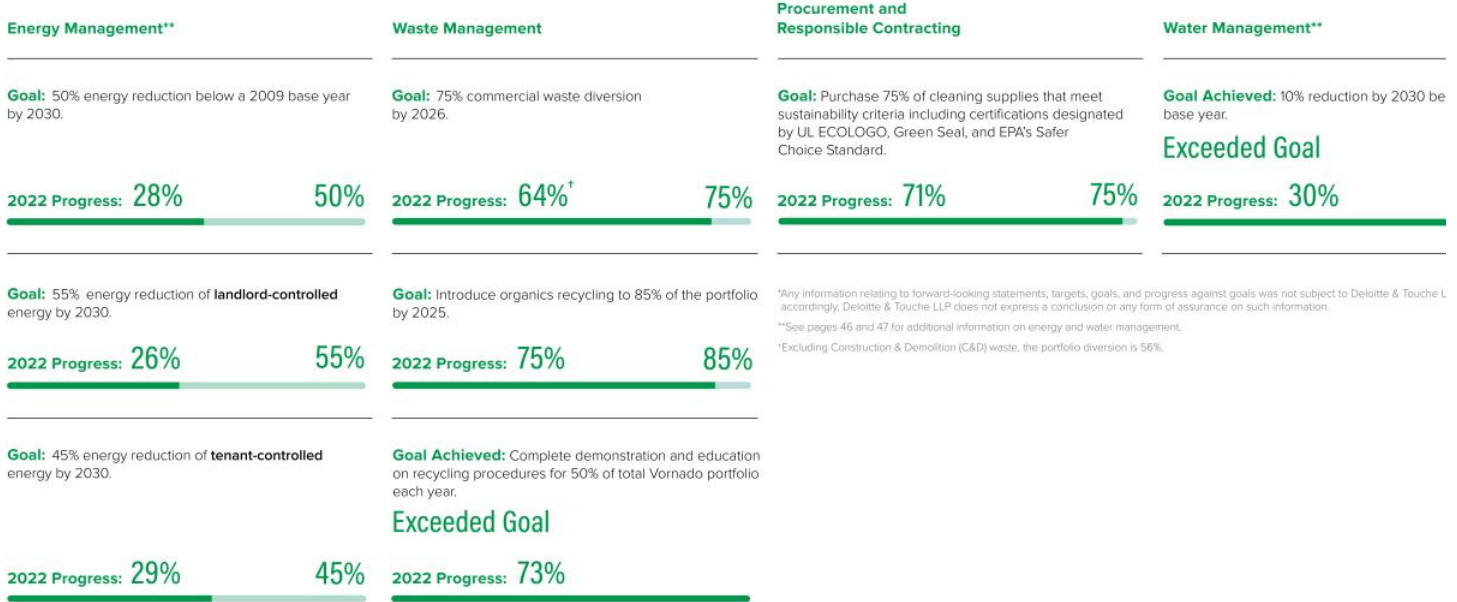


# Environmental Goals & Progress\*

GRI 3-3, 303-1

We interpret performance in 2022 to be a model of how operations and utilities will be used in our buildings going forward. Retailers have re-opened and companies have adopted varying return-to-work policies for their employees. We expect to see continued energy management progress with elimination of fossil fuels, implementation of energy efficiency projects and active tenant engagement. We continue onboarding tenants

into our organics diversion program and have resumed our annual tenant educational programming, incorporating in-person and virtual methods. We expect to see continued water reduction progress with retrofitting plumbing fixtures, HVAC efficiency projects and water re-use efforts, adhering to ongoing best practice maintenance and clean programs.



# Environmental Results 2022

GRI 3-3, 302-3, 303-1, 303-3, 305-4, 306-2, 306-3, 306-4, 306-5

## Cumulative Savings Since 2012

**\$30,537,778**

of Capital Expenditure (Gross)

**\$37,938,574**

in Cumulative Savings

**229,883**

MT CO<sub>2</sub> of CO<sub>2</sub>e reduced

## Certifications and Ratings\*\*

**27+** Million SF of LEED-Certified properties

**23+** Million SF of LEED Gold or higher

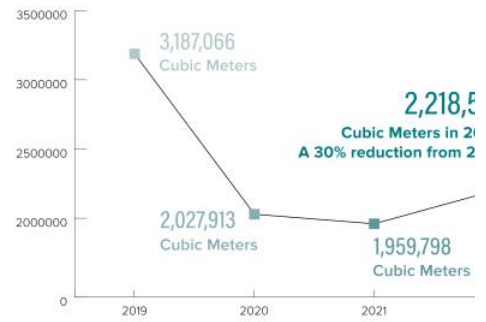
**33+** Million SF of ENERGY STAR rated

**95%** of Vornado Office Portfolio

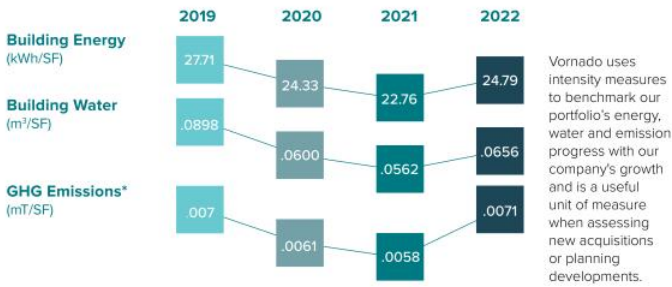
**84%** of Vornado Office Portfolio

**100%** of Vornado Office Portfolio

## Water Withdrawal\*\*



## Intensity Measures†



## Nonhazardous Waste Total\*\*\*\*

	2019	2020	2021	2022
Recycled	11,242	3,403	3,457	4,685
Energy Recovery	6,583	2,761	3,979	3,994
Composting	2,621	935	694	1,692
Landfill	2,123	698	91	1,117
<b>Total</b>	<b>22,569</b>	<b>7,796</b>	<b>8,221</b>	<b>11,488</b>

An additional **89 METRIC TONS** of hazardous waste were recycled in 2022.

\*GHG Emission Intensity includes emissions from Scopes 1, 2, & 3, sharp increase in 2022 emission intensity recently released 2021 eGRID factors specifically relative to Westchester region.

\*\*Includes commercial, retail, and residential waste.

\*\*\*All waste is now reported in Metric Tons.

†For reporting boundaries, see page 11.

\*\*\*\*GRI references apply to noted sections.

# Environmental Results by Region

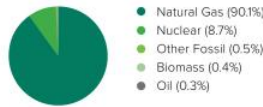
## LEED Certifications

**New York City**  
**95%** of Total Region (including retail)  
 21.3 Million SF; 31 buildings

**Chicago**  
**100%** of Total Region  
 3.7 million SF; 1 building

**San Francisco**  
**100%** of Total Region  
 1.8 million SF; 3 buildings

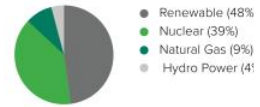
## Grid Electricity Mix



Source: EPA eGRID 2021, NYCW Generation



Source: Con Edison's Environmental Disclosure Report, 12 months ending September 20, 2022



Source: PG&E's, 2021 Power Mix

## Waste By Region (TONS)

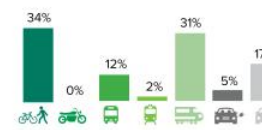
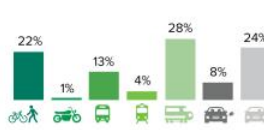
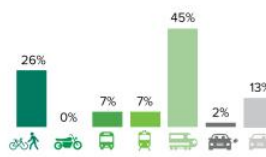
- Non-Hazardous Recycling
- Energy Recovery
- Organic Diversion
- Landfill



## Transportation Survey Results (Mileage)

As surveyed from our tenants in 2022

- Walk/Bike/Telecommute
- Motorcycle/Scooter
- Bus
- Light Rail
- Heavy Rail
- Carpool/Alternative Fuel
- Car: Solo



## 2022 GHG Emissions (MT CO<sub>2</sub>e)

Scope 1	Scope 2	Scope 3
Oil & Natural Gas Heating and Cooling	District Steam	Direct Metered Tenant Utilities
Cogeneration	Base Building Electricity	
	Submetered Tenant Utilities	

Scope 1	25,327
Scope 2	138,132
Scope 3	35,702
Total	199,161

Scope 1	4,575
Scope 2	15,369
Scope 3	46
Total	19,990

Scope 1	
Scope 2	
Scope 3	
Total	

## Energy Efficiency Programs\*

GRI 3-3

### New BAS with Tenant Interface Leads Industry

1290 Avenue of the Americas recently underwent a Building Automation System (BAS) upgrade to incorporate industry best practices for energy efficiency and cybersecurity. As part of the improvement, Vornado piloted the installation of a communication interface to allow our tenants to securely connect their own controls systems into the base building control system. This enabled mutual sharing of data points so tenants can confirm that Vornado is compliant with lease requirements.

With the increased visibility into tenant spaces, the building engineers now deliver optimal comfort conditions; quickly and remotely diagnose hot or cold issues; and reduce excessive heating or cooling energy to collectively benefit from reduced energy expenses, lower our carbon emissions, and meet our ESG goals.

A software layer was added to continuously monitor efficacy of the new BAS, identify deficiencies and opportunities for improvement, and measure savings. The entire system will reduce 1,600 MWh of electricity and 4600 Mlbs of steam, and will result in the removal of 264 Tons of CO2 emissions.

### Benchmark 8760: How Hourly Data Can Improve Building Benchmarking

In 2022, Vornado participated in the Benchmark 8760 initiative, sponsored by the New York State Energy Research & Development Agency (NYSERDA) and administered by Jaros Baum & Bolles (JB&B). It is a proof-of-concept, cloud-based platform that benchmarks building energy usage at hourly intervals. Vornado understands that aggregating building usage into a monthly lump sum ignores the variations in usage patterns that are unique to each building and overlooks highly efficient practices such as peak load shifting. Going a step further to correct or "normalize" building usage by occupant and by weather gives a more accurate portrayal of how a building is performing. We contributed to this initiative by sharing anonymous usage and occupancy data to develop a solution that would benefit our industry in future iterations and adoption.



**"As a commercial real estate owner and operator, we're pleased to partner with this consortium in developing a cutting-edge proof-of-concept benchmarking platform that will provide a more accurate depiction of a building's energy performance. This will be a tremendous new resource that brings enormous value to our industry."**

-Karen Oh, Vice President, Energy Innovation and Strategy

\*Any information relating to goals and progress against goals was not subject to Deloitte & Touche LLP's review and, accordingly, Deloitte & Touche LLP does not express a conclusion, opinion, or any form of assurance on such information.



1290 Avenue of the Americas

## Tenant Improvement Standards

To drive maximum efficiency and performance in our buildings, Vornado recognized the need for stronger engagement with both existing and prospective tenants. To this end, we have implemented a high-performance design guideline, the intent of which is to:

- build above-minimum code standards
- incorporate healthy building materials where possible
- install ENERGY STAR-rated appliances

Tenants with supplemental cooling will be required to implement demand control ventilation, as Vornado has implemented on landlord-controlled air handling units. And plug load management will be required for all noncritical loads so unessential equipment can be safely turned off when the building or tenant office is closed.

This guideline will yield permanent energy cost savings for our tenants.



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## Green Building Certifications



Goal: 100% LEED Certification for in-service Office Portfolio

2022 Progress

95%

## GHG Emissions/SBTi Goals and Progress

Vornado's commitment to carbon neutrality and associated emissions reductions targets have been approved by the Science Based Targets Initiative as consistent with a 1.5°C climate scenario. As of 2022, we have marked reductions of 54% in our market-based emissions and 1% in our location-based emissions.

Vornado evaluates its carbon emissions from both a location and market-based approaches. Location-Based carbon reflects emissions for our properties based on the relative grid average emission factors, while Market-Based reflects emissions that we are responsible for due to our purchasing decisions.

On January 30, 2023, the EPA released the updated 2021 eGRID factors which we have applied to our reported GHG emissions amounts. In all of the regions in which we operate the eGRID coefficient has increased from the 2020 eGRID factors and in New York Zone J (NYC/Westchester) the coefficient increased significantly (29%). This unfavorable change in coefficient value is due to the regional grids becoming more reliant on nonrenewable energy sources. In Zone J, nuclear power has been taken off-line, the grid has increased natural gas consumption to compensate and eGRID coefficients have increased. This impacts our location-based emission progress until the NYS grid brings long-term renewable solutions on line, anticipated to occur in 2027.

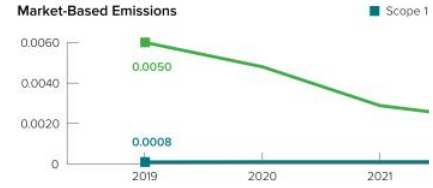
## EP100

As a member of EP100, Vornado has committed to implementing a Management System (EnMS) aligned with ISO 50001 standards at in-service office operations by 2029 and to improving energy productivity by 50% by 2030 relative to a 2009 baseline.

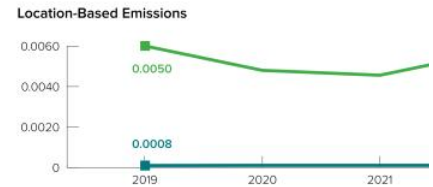
- Current facilities managed by an EnMS - 92%
- Energy Productivity Goal - 50% Improvement



Market-Based Emissions



Location-Based Emissions







**Renewable Energy Procurement**

In June 2021, Vornado contracted to procure RECs to document our commitment to renewable energy and the environment, sourced from hydro energy facilities located throughout New York State. In 2022, we transitioned our San Francisco buildings to 100% clean in-state offsite energy. Vornado selected these products as a localized solution that supports investment in both NY and CA State renewable infrastructure, furthering state-wide goals, and increasing and providing clean energy to all communities. In Chicago, IL, where our largest asset resides, we procured RECs offsetting 100% of its electricity load.

**Green Financing**

Vornado has seen the market continue to evolve and establish a firmer connection between sustainability and access to capital. Vornado has been a leader in this space by executing sustainability-linked transactions in multiple markets. In 2021, we issued \$750 million of green bonds and closed a \$1.25 billion sustainability-linked revolving credit facility that established a Key Performance Indicator (KPI) metrics and a 0.01% interest rate reduction if annual KPI goals are achieved. In 2022, we closed our second \$1.25 billion sustainability-linked revolving credit facility and a \$1.25 billion sustainability-linked term loan that follows a similar structure to our 2021 revolving credit facility. In 2022 we completed the disbursement of the \$1.25 billion of green bond net proceeds and met our GHG emissions targets outlined in our third sustainability-linked corporate credit facilities.

**100%** Renewable Energy Certificates for directly procured electricity by Vornado

**\$750 Million** Green bond

**100%** clean in-state offsite energy in New York and California.

**\$3.3 Billion** comprising of two sustainability-linked Revolving Credit Facilities and a Term Loan

555 California Street is our flagship asset in San Francisco; the three-building complex aggregates 1.8 million square feet.

At Vornado, sustainability and resilience are important lenses through which we view all development projects at any scale. Our strategy focuses on sustainable development inclusive of carbon neutrality, operational efficiencies, human health, minimizing material resources, and climate change adaptation.

## Embodied Carbon

As part of our redevelopment of THE PENN DISTRICT, and our ongoing work to achieve our carbon emissions reduction goals, Vornado performed life cycle assessments of PENN 1, PENN 2, and The Farley Building to evaluate the embodied carbon emissions from the redevelopment projects and determine strategies to decrease embodied carbon. The assessments showed great opportunity to reduce GHG emissions through the adaptive reuse of the existing building foundation, structure and enclosure. By choosing to renovate the existing buildings rather than building new, the projects achieve substantial reductions in the up-front embodied carbon emissions that come from the manufacturing and transportation emissions of new building products. The majority of the embodied carbon reductions are from the reuse of the structural concrete and steel, which are two of the most common and carbon intensive materials used in construction. At a global scale, the emissions from concrete, steel, and aluminum contribute 23% of total GHG emissions according to the Architecture 2030 Challenge. The renovations of PENN 1, PENN 2 and The Farley Building drastically reduce the carbon emissions from these high impact building materials, which is why embodied carbon reductions is a core strategy of Vornado's ESG goals.

The embodied carbon framework that Vornado will develop in 2023 will identify the leading embodied carbon reduction practices for core building materials, such as concrete, steel, timber, insulation, cladding, and interior finishes. The strategies to reduce embodied carbon will be incorporated into the management of the current development portfolio and will be used to inform the overall design process of future projects to provide greater guidance for project teams to reduce the embodied carbon of future projects.

## The Farley Building

Vornado's renovation of the James A. Farley building demonstrated a 64% reduction in embodied carbon emissions compared to a ground-up new development. This adaptive reuse project saved 86,800 tons of CO<sub>2</sub>e, demonstrating the value of renovation and retrofit over new construction. When including operational carbon emissions, the building demonstrates a 28%\* reduction in total carbon emissions over a 60 year period. The operational emissions for the building are based on the LEED energy model that was used to achieve LEED Gold certification for The Farley Building.

## PENN 1

Compared to an equivalent new construction building, the PENN 1 redevelopment achieved an 88%\* reduction in embodied carbon (86,012 tons CO<sub>2</sub>e). For comparison, the emissions reduction is equivalent to the annual operational emissions of roughly 9,800 homes according to the US EPA carbon equivalence calculator. The majority of the embodied carbon reductions came from the reuse of the existing structure, and project researched additional opportunities to reduce embodied carbon through the procurement of low-embodied carbon new construction materials. These impact reduction measures for enclosure and interior materials were researched and identified for future projects under Vornado to further decrease the development portfolio embodied carbon.

## Stages of Whole Life Carbon



\*This disclosure was not subject to Deloitte & Touche LLP's review and, accordingly, Deloitte & Touche LLP does not express a conclusion, opinion, or any form of assurance on such information.

## Task Force on Climate-Related Financial Disclosures (TCFD)\*

Vornado will release a separate TCFD report in 2023.

### Governance

In February 2019, Vornado was among the first American real estate companies to become a signatory of and endorse the TCFD recommendations. Our leadership committed to evaluating and disclosing climate-related risks material to our business.

The leadership, beginning with the Board of Trustees, is part of the top-down strategy for the ongoing assessment and management of climate-related risk, which includes the execution of tasks throughout all levels and divisions of our business and receives quarterly updates on ESG from the Vornado Executive team. Our Board's Lead Trustee, also our Corporate Governance and Nominating Committee Chair, oversees environmental matters, including climate-related risks and opportunities. Vornado now includes critical ESG metrics, and associated progress towards achieving all-term climate targets, within the annual executive compensation package.

A Corporate ESG Team helps to set corporate priorities and serves as the liaison to the Board on climate-related risks and opportunities. While responsibilities are integrated throughout the company, the Chief Sustainability Officer and team oversee the management of climate risks along our properties' acquisition, development, operation, and disposition stages. Through direct interaction within various divisions, the Sustainability team continually evaluates transitional, physical, financial, and legal risks and opportunities.

\*For more information on our climate risk assessment program please reference the subsequent Climate Risk & Adaptation pages including Resilience and Adaptation, ESG Governance, Risk Assessment & Analysis, Environmental Goals and Progress, Energy Progress, Environmental Results 2022, and SASB Disclosure on climate change risk, all within this 2022 ESG report and our 2023 proxy statement.

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### Strategy

Our transitional risks stem from regulatory impacts of both local and federal legislation, market impacts from both workforce behavioral patterns, financial markets, and grid decarbonization. We assess physical risk as acute (event-driven), such as increased severity of extreme weather events or chronic (longer-term) such as shifts in temperature and increased variability in weather patterns.

We evaluate the potential scale and frequency of the identified risks to inform our organization's Enterprise Risk Management (ERM) assessments related to our business, strategic, and financial planning. The impact of such risks guide strategies for our buildings through acquisition, (re) development, or operations for our stabilized assets.

Our transitional risks are summarized and categorized by policy and legal, technology, market or reputational and are described in further detail in the Transitional Risk Assessment. We will forgo disclosure of these costs until compliance requirements for CMA and other climate regulations are more definitively known, although we do not expect these costs to be material within our short-term analysis.

Our physical risks are summarized and characterized as either acute or chronic and are described in further detail in the Physical Risk Assessment.

We have identified physical climate risk based on the IPCC Representative Concentration Pathway (RCP) 8.5, consistent with a worst-case scenario/business-as-usual scenario and assess physical risks and opportunities over the short, medium, and long-term horizon. Transition risk has been assessed based on our SBTi commitment to limit global warming by 1.5°C, and local regulatory controls.

Our mitigation strategy against climate-related risk has been built into how we do business.

Commencing an energy efficiency and sustainability program in the early 2000s, implementing large-scale

resilience and adaptation measures, and conservative financial decisions have resulted in a strong balance sheet; investment in cybersecurity and IT infrastructure, and engaging with the communities in which we operate through leadership positions on local and regional advisory boards, and advocacy groups related to policy adoption and implementation has enabled Vornado to develop and showcase innovative decarbonization strategies.

### Risk Management

Our climate risk assessment informs the risk profiles of our properties and is a component of our ERM assessment during all stages of a building cycle. Understanding climate-related risks enables us to better assess potential acquisitions through the due diligence process, impacts within our (re)development efforts, and exposure of our operational assets. We discuss how environmental and energy risk assessments are incorporated into all building stages, across all properties in the Energy Management Section of our SASB disclosure.

Identifying these risks is an iterative process that annually seeks input and reassessment from leadership within each of Vornado's divisions, and is then tied to our ERM assessment.

Acute physical risk is managed through our energy efficiency measures, technology, and health and wellness programming. Chronic physical risks are primarily managed through our adherence to due diligence, resilience and adaptation measures, and long-term capital planning efforts.

### Metrics And Targets

Meaningful metrics and targets help us to evaluate climate-related risks and opportunities, as defined in our Risk Management assessment, and are reported in the Energy Efficiency Targets, Goals and Progress and Greenhouse gas emissions disclosure in Environmental Results sections provided with annual ESG report. To ensure accuracy, we have a third party firm assure our reported GHG emission International Standard on Assurance Engagements 3410, Assurance Engagements on GHG State

Vision 2030 is Vornado's commitment to carbon neutrality by 2030 through a combination of three overarching principles of energy reduction, recovery, and reuse. To guide Vornado's efforts to achieve its Vision 2030 and assess and manage climate-related risks committed to reducing its Scope 1 and 2 GHG emissions 64% per square foot by 2030 from a 2019 baseline in line with a 1.5°C trajectory per our 1.5-degree aligned Science Based Target (SBTi) commitment. Our methodologies consider various scenarios, in an IEA ETP B2DS scenario, and were modeled using the Sector Decarbonization approach which includes company-specific growth trajectories to historical emissions trends. The target boundary includes emissions and removals from bioenergy feedstocks. Scope 3 emissions account for less than 40% of total emissions, only Scope 1+2 emissions are covered by our targets. This framework provides us with a methodology to determine the appropriate plans of action to achieve emissions reductions, such as energy efficiency measures, renewable energy investments, and potentially mitigating our identified Transition-related financial risks. As we continue to update our climate-related financial risk exposure, we continue to look for meaningful metrics to both affirm progress and inform on potential mitigation strategies.



**Transitional Risks and Opportunities: Scenario Analysis**

Short-Term (Present-2029)	2030 Medium-Term (2030-2049)	Long-Term (2050-2100)
<p><b>Risks</b></p> <p><b>Policy and legal:</b> Capital investment required towards energy efficiency or decarbonization to comply with local regulation, namely the Climate Mobilization Act (CMA).</p> <p><b>Policy and legal:</b> Resources incurred to comply with pending Securities and Exchange Commission (SEC) rules regarding climate-related disclosures.</p> <p><b>Technology:</b> The need for efficient and health-centric innovation.</p> <p><b>Market:</b> Cost of energy, renewables and impact of market economics.</p> <p><b>Market:</b> Access to capital because of high interest rates.</p> <p><b>Market:</b> Global slowdown due to high interest rates limits new leases.</p> <p><b>Market:</b> Remote working behavior and our products' flight to quality to encourage working in offices.</p> <p><b>Market:</b> Manufacturing and supply chain disruption.</p> <p><b>Opportunities</b></p> <p><b>Resilience:</b> Accomplishment of Vision 2030 aligning our carbon footprint to a 1.5-degree climate scenario.</p> <p><b>Products and services:</b> Market demand for sustainable and resilient buildings.</p> <p><b>Market:</b> Proven market resilience through 40+ years of real estate cycles.</p> <p><b>Resource Efficiency:</b> Reduced energy consumption from energy efficiency measures.</p> <p><b>Energy Source:</b> Sourcing energy from renewable grids or onsite renewables.</p> <p><b>Market:</b> Expansion and outreach to our value chain.</p> <p><b>Markets:</b> Leverage of ESG and sustainable financing mechanisms.</p>	<p><b>Risks</b></p> <p><b>Policy and legal:</b> Capital investment required towards energy efficiency or decarbonization in the cities where we do business, namely the CLCPA.</p> <p><b>Technology:</b> Decarbonization of grid-supplied energy could lead to increased energy costs and operating expenses.</p> <p><b>Market:</b> Changing perception of what an office should be – amenitization requirements.</p> <p><b>Opportunities</b></p> <p><b>Resource Efficiency:</b> Our overall energy consumption could decrease, yielding a reduced operating cost.</p> <p><b>Markets:</b> Carbon neutral buildings could be more competitive and could yield higher value to our business.</p> <p><b>Markets:</b> Energy storage, onsite renewable energy, and distributed energy resource deployment could yield additional sources of revenue and attract and retain tenants.</p> <p><b>Markets:</b> Leverage of ESG and sustainable financing mechanisms.</p>	<p><b>Risks</b></p> <p><b>Policy and legal:</b> Capital investment towards energy efficiency or decarbonization.</p> <p><b>Policy and legal:</b> Increased legislation limiting development.</p> <p><b>Technology:</b> Increased energy costs due to full transition of grid-supplied energy to renewable sources.</p> <p><b>Opportunities</b></p> <p><b>Resource Efficiency:</b> Improved air quality could lead to lower HVAC operating and maintenance costs.</p> <p><b>Resilience:</b> Mitigated increases in temperature could lead to reduced costs to adapt our buildings to be resilient to more extreme climate scenarios.</p> <p><b>Energy Source:</b> Renewable energy delivered from the grid will reduce source-generated carbon emissions and potentially reduce exposure to climate regulation.</p> <p><b>Resource Efficiency:</b> Full transition of grid-supplied energy to renewables could lead to decreased offsite renewable product costs.</p> <p><b>Resilience:</b> Increased demand and value for our product because our assets are located in dense urban areas with alternate means of transportation contributing to business continuity.</p> <p><b>Resilience:</b> Increased demand and value for our product because a percentage of our assets are located in flood zones.</p> <p><b>Markets:</b> Leverage of ESG and sustainable financing mechanisms.</p>
<p><b>Vornado's Activation (Examples)</b></p> <p>Biodiversity policy, water efficiency programming and water retention policies.</p> <p>Performance-based risk assessments have been completed on all our properties that will either need to be in compliance with CMA or contribute to Vision 2030.</p> <p>Completed a gap assessment with internal audit on our current voluntary climate reporting and the SEC's proposed Climate-Related Disclosure rulings.</p>	<p>Expanded our Vendor Integrity Program (VIP) to assess a wide range of ESG criteria across our value chain.</p> <p>Completed a \$750 million dual-tranche green bond offering, which generated \$741.6 million of net proceeds. We have \$3.3 billion of sustainability-linked credit facilities comprising an \$800 million Term Loan and two \$1.25 billion Revolving Credit Facilities, which leverage our GHG reduction efforts to provide potential loan pricing reductions.</p>	<p>Savvy and active procurement decisions to mitigate rising energy prices, invest in renewable infrastructure and consider carbon offsetting programs.</p> <p>Continued deployment of energy efficiency projects through capital cycle, engagement with tenant operations and fuel feasibility studies.</p> <p>Existing energy efficiency program and decarbonization efforts.</p> <p>Onsite renewable and battery storage feasibility studies at buildings.</p>

GRI 3-3

**Physical Risks and Opportunities: Scenario Analysis – RCP 8.5**

**Acute Physical Risks (Short-Term)**

Stormwater surge, flood risk in vulnerable areas.  
 Inability to transit to work due to flood or power loss.  
 Localized loss of power due to severe climate-related events (e.g. hurricanes, floods, etc...).

Degradation of air quality and public health due to ongoing dirty grid emitting potential increased temperature, SLR and precipitation.

**Chronic Physical Risks (Long-Term)**

Accelerated increases in land and ocean temperatures could lead to increased climate-related events, including extreme precipitation events, which could yield significantly higher disaster response and flood mitigation costs.

Accelerated increases in sea-level rise could lead to increased damages from coastal urban floods.

Fresh water scarcity.

**Financial Implications:**

**Operating Expense:**

Increase in disaster relief costs as climate-related events become more severe.

Increase in utilities due to increased extreme weather events and temperature conditions.

Increase in equipment maintenance due to increased extreme weather events and temperature conditions.

Increase in instances of business interruption as climate-related events become more frequent and severe.

Increase in insurance premiums as climate events become more frequent and severe.

Change in workplace behavior and related emissions as climate-related events become more frequent and severe.

**Capital Expense:**

Increase in infrastructure and construction costs as both a benefit and preventative measure as climate-related events become more frequent and severe.

Increase in technology, retrofits and capital costs as both a benefit and preventative measure as climate-related events become more frequent and severe.

**Revenue:**

Increased demand and value for our product because our assets are located in dense urban areas with alternate means of transportation contributing to business continuity.

Increased demand and value for our product because a low percentage of our assets are located in flood zones.

Increased demand and value for our product because we are active members, environmental stewards, and investors in the communities we operate, leading to an environmentally sound and resilient market.

**Resilience and Adaptation**



**Mechanical Equipment**

When a new building is in a flood zone or when feasible, we place critical mechanical equipment and electrical switchgear above to avoid flood damage.



**Green Roofs & Stormwater Retention**

Our new roof landscape systems are designed to absorb and retain stormwater and to slow runoff into the urban landscape surrounding infrastructure. Green and white roofs also insulate buildings; reduce current and future demand for heating and cooling and contribute to heat island reduction, which provides local surface temperature.



**Glazing & Envelope**

Our new glazing and envelope systems are designed to withstand heavy wind and ice conditions. They also are designed to reduce solar heat gains and improve insulation values to minimize heating and cooling demand.



**Flood Barriers**

When a new building is located in a flood zone, we anchor temporary walls and venting systems inside our building lobby to accommodate storm surges and floods and their associated wind pressure build-up without damaging the building. At our existing buildings, we install temporary exterior barriers to prevent flooding from touching the building envelope.



**Backup Generation**

We install backup generation to support, at minimum, fire and life safety systems, as well as critical infrastructure.

# Responsible Recycling

GRI 3-3, 306-1, 306-2, 306-3, 306-4, 306-5

Vornado equips our building teams and tenants with the tools, resources, policies, and education necessary for successful waste diversion programs.

## Vornado's Waste Management Policy

Vornado requires tenants to properly dispose of waste to reduce contamination and ensures the proper handling and disposal of e-waste and hazardous universal waste. Our policy increases waste diversion from landfills by implementing comprehensive recycling, organics, and donation programs. Vornado collects detailed data on these efforts, including annual waste audits and monthly diversion reports. These data points lead to targeted programs designed to effect continuous improvement towards our waste reduction goals.

## Tenant Engagement

- Building-wide tenant town hall events focused on zero waste best practices and the expansion of organics programming within tenant spaces representing 20.8 million SF of our office portfolio.
- One-on-one tenant meetings, site visits, and waste diversion demonstrations with over 56 tenants, including key partnerships with Bloomberg, Yext, Meta, IPG and subsidiaries, Neuberger Berman, Wegmans, and Structure Tone.
- Quarterly e-waste recycling program across our New York regional assets that provides direct tenant pickup and diversion metrics.

## Data Tracking\*\*\*

**96%** waste stream audits performed in our office portfolio.

**94%** access to our organics collection program, representing 25.7 million SF of our office port

**14,887** MTCO2e avoided through waste diverted from landfill and incineration, utilizing the EPA WAF Tool Version 15.\*\*

## Roadmap to Zero Waste

Vornado's path to zero waste is multipronged, emphasizing the overall reduction of waste produced in our buildings and material reuse strategies in 2022.

Leveraging its partnership with the dedicated onsite janitorial team, 555 California Street has positioned itself to pursue TRUE Zero Waste certification in 2023 by demonstrating the highest diversion rate in the Vornado portfolio, with 84%\*\*\* diverted in 2022. This milestone was achieved through two simultaneous efforts: extensive training and collaboration to conduct onsite waste sorting at the building, and a targeted education campaign for building tenants focusing on centralized waste collection stations to improve separation upstream. As a result, the amount of correctly sorted organic material increased from 21.95 tons per month to 40.61 tons per month over 15 months, while the amount of trash declined from 14.29 tons per month to only 1.75 tons per month.

\*The information at this link was not subject to Deloitte & Touche LLP's review and, accordingly, Deloitte & Touche LLP does not express a conclusion or any form of assurance on such information.

\*\*Calculations derived from EPA WARM Tool Version 15: <https://www.epa.gov/warm/versions-waste-reduction-model-warm#15>

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Nightly waste sorting conducted by janitorial staff at 555 California Street



# Social

As an employer, building owner, and landlord to thousands of business tenants, we are responsible for maintaining and improving the health of our indoor environments, as well as communicating the benefits of our health and wellness programs with consistency and clarity to our stakeholders. Healthy buildings contribute to a healthy society and continue to be an important criterion for prospective tenants. We believe that consistent health programming and communications protocols create a responsible framework for our employees, our tenants, and our visitors to consider elsewhere in their daily lives.

## Community Building and Volunteer Efforts

Vornado instituted Vornado's Day of Service in 2021 and continued the program in 2022. This day of leave, available to every employee, was utilized throughout our New York, Chicago, and San Francisco regions to involve our employees in our communities.



Employee volunteers planting a tree for Central Park Conservancy in Central Park



WorkLife, an amenity ecosystem for tenants focused on both work and self-care, is ongoing within THE PENN DISTRICT. The ecosystem contains grab and go food options, social stair with bleacher seats and large LED panels, full-service restaurants, WorkLife WellBeing – a fitness and wellness center, WorkLife Meetings – a conference facility, WorkLife Office Suites – adaptable workspace and a full-service medical facility, including physical therapy, creating a world class program focused on the health and wellbeing of tenants and the community.



Plaza 33 Pedestrian Plaza in THE PENN DISTRICT

## Honors and Awards

Vornado is proud to be recognized for various achievements as a company as well as individual honors showcasing our success in real estate.



New York Energy Consumers Council Energy New York Awards

## Employee Wellness and Mental Health

We support employee wellness and mental health by implementing and enhancing programs that will have a meaningful impact across our employee population. This includes offering flexibility, providing our wellness programs, providing health incentives, and hosting events to encourage and adopt healthy behaviors.



TED Talk on the Social Stairs at PENN 1

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# Tenant Engagement\*

GRI 2-6, 2-29, 3-3, 306-1, 401-1, 405-1

Tenant engagement at Vornado is paramount. Our approach with our tenants involves forging relationships and partnerships that lead to transformative projects, improving the health and wellness of our community.

### Our most visible examples of engagement are:

- Tenant Roundtables – Tenants from our regions meet to communicate our goals and work, while understanding and then acting upon what our tenants need to progress with their goals.
- Tenant Outreach – Our Live.Work.Do App and Tenant Portal; in-building outreach via elevator screens, emails and lobby events; monthly submeter reports; and tenant surveys. These efforts provide feedback and updates on an ongoing basis.
- In-Person Campaigns and Programs – We host waste and energy reduction workshops, tenant energy competitions, and building walkthroughs.

Vornado's entire portfolio participates in Earth Hour and Daylight Hour as a part of our biodiversity program. Daylight Hour is a campaign aimed at reducing energy use, improving occupant health, and saving money by encouraging everyone to turn off nonessential lighting and use daylight from 12 to 1pm local time. Earth Hour is to raise awareness about energy consumption and its impact on the environment.



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### Live.Work.Do



Designed exclusively by Vornado for our tenants, the DO. app keeps our tenants up to date with their office building and offers exclusive local retailer deals, special events, transportation alerts, directions, and more. Our tenants use the DO. app to get mobile access to their building, register visitors, submit service requests, and order food.

### Tenant Energy Engagement

In 2022, Vornado hosted its 7th and 8th Tenant Roundtables with tenants. In April, the (virtual) Tenant Roundtable included tenants from New York, San Francisco and Chicago. We received feedback that our tenants wanted to hear more frequently from us, so we launched a second in person roundtable in our newly minted Experience Center at our centrally located PENN 1 building.

Roundtable topics cover Vornado's Vision 2030 pathway to Carbon Neutrality, progress on our commitments, proposed climate reporting disclosures, and most importantly engagement opportunities. The last roundtable highlighted tenants that successfully achieved ENERGY STAR Tenant recognition and used the ENERGY STAR Treasure Hunt as a guide for to identify and implement energy efficiency within their space.

Other engagement accomplishments in 2022 included sharing of BMS data between tenant and landlord, tenant energy competitions to reduce energy consumption, and the development and implementation of tenant energy conservation measures to provide to incoming tenants for newly constructed spaces.



2022 Tenant Sustainability Roundtable hosted by the Vornado Sustainability

### Tenant Energy Engage

11.5 Million SF  
of direct tenant engagem

27%  
of Vornado's tenancy int  
to ENERGY STAR progr

Tenant Outlook  
88%  
of tenants rank their exp  
as positive

6.6 Million SF  
of buildings (23% of our  
portfolio) certified under  
Fitwel's Multi-Tenant Wh  
Building program

GRI 3-3

Vornado focuses on fostering and nurturing the community within our buildings for our tenants, visitors, and employees. Our strategy is to enrich the neighborhoods and communities in which our buildings are located.

### THE PENN DISTRICT – A Connected Campus

Penn Plaza, now known as THE PENN DISTRICT, has undergone a major redevelopment to transform the neighborhood into a vibrant and modern mixed-use campus. The redevelopment will include 10 acres of new paving and landscaped green space, as well as new pedestrian plazas that encourage foot traffic and create a more pedestrian-friendly environment in the heart of Manhattan. Additionally, the project has seen the redevelopment of 6 million square feet of existing office buildings, breathing new life into previously underutilized buildings that have attracted major technology tenants. The development also includes 11 million square feet of all-new retail space that has been curated to bring the best of New York City to one central location. The creation of WorkLife, an amenity ecosystem within the district, provides a diverse set of shared amenities, such as a fitness center, conferencing facility, flexible workspaces and lounges, event spaces, and rooftop parks, further enhancing the sense of community and collaboration within the campus. When completed, the redevelopment will have transformed the area into a thriving neighborhood with a bustling retail scene, thriving businesses, and ample green space, making it a new New York destination.

PENN 2 Tower Floor Office





GRI 3-3

**Creating a Leafier District for Everyone**

The landscape development plan for THE PENN DISTRICT is a significant part of the area’s revitalization, aiming to create an inviting and beautiful environment that can be enjoyed by all New Yorkers. The plan features 10 acres of all-new granite sidewalks and public plazas, along with newly planted trees strategically placed throughout the district to provide ample shade and greenery to the community. Seven new public plazas have been created, each with a unique design and layout, providing ample space for outdoor activities and events or a quiet place to enjoy a book or meet a colleague. The public plazas are open to everyone, and they offer a welcoming and inclusive space where people can come together and enjoy the beauty of the district.



Left Social Stairs at PENN 1  
right PENN DISTRICT's Plaza 33

**WorkLife: Solving for Your Day**

WorkLife is Vornado’s amenity ecosystem that allows tenants to focus on work and self-care. WorkLife is a collection of amenities available to all of Vornado’s tenants, including furnished tenant work lounges, flexible workspace, fitness and wellness spaces and programs, and conferencing, all serviced by multiple food and beverage offerings.



**Connections**

The DO. App seamlessly connects tenants with their office building and local community.

**Mobile Credentials**

Virtual access cards provide tenants with seamless passage through the building turnstiles. Mobile visitor credentials provide contact-less visitor registration, check-in, and access.

**Dining & Retail**

Exclusive retailer perks and pricing, order ahead with contact-less pick-up, and in-app payment options provide endless convenience for tenants.

**Health & Wellness**

On-site and virtual fitness and meditation classes, spa treatments, sustainability programs, and access to green space promote healthy and flexible environments for tenants.

**Special Events**

Exclusive invites, event announcements, and notifications connect tenants to the community surrounding their office building.

GRI 3-3

**THE MART**

THE MART has undergone a major redevelopment. As the largest, publicly owned commercial office building in the United States, the focus is on creating a vibrant and mixed-use campus in one multi-purpose building. WorkLife has been expanded to THE MART and includes meeting rooms, a social stair, full service health club, and restaurant all accessible via the Live, Work.Do App.

**Art on THE MART**

In September 2018, THE MART introduced Art on THE MART to the world with a launch event that attracted over 32,000 people to the Riverwalk and Wacker Drive in downtown Chicago, transforming its urban context. Since the launch, Art on THE MART has provided a public platform for moving image work by renowned local, national and international multi-disciplinary artists.

Art on THE MART is the largest permanent digital art projection in the world, projecting contemporary artwork across the 2.5 acre river-facade of THE MART. The program is a 30-year commitment by Vornado, in close collaboration with the City of Chicago, to provide public access to innovative contemporary artwork for the thousands of visitors traversing the Chicago Riverwalk each day.

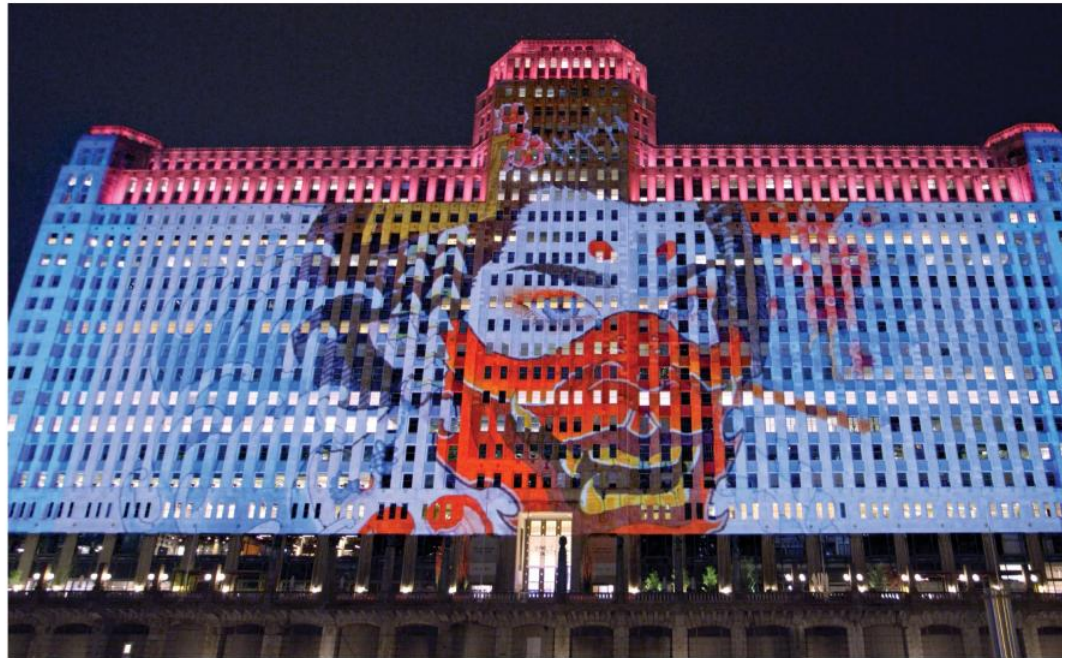
Art on THE MART; THE MART is our flagship Chicago asset with over 3.7 million SF of leasable space

13,000

SF of outdoor space surrounding THE MART, open to the entire community

500+

linear feet of riverfront, covered outdoor workspaces, and private event space





# Human Capital Management

GRI 2-25, 3-3, 401-2

In 2022, we enhanced our wellness program to encourage employees to adopt healthy behaviors and deal with preventable and chronic conditions. Our focus for 2022 was mental health and wellness.

Our employees are the foundation of our business. We provide training and education, promote career and personal development, and encourage innovation and engagement to foster their talent and growth. Vornado upholds strict policies against bribery and corruption, child labor, and forced or compulsory labor. Such policies extend to our Board and management as well as our employees. Any trustee, officer, or employee who becomes aware of any existing or potential violation of Vornado's Code of Ethics is required to notify their Code of Ethics contact person promptly. Violations may be reported anonymously, and all communications will be kept confidential. Our Code of Business Conduct and Ethics is found on our website at [www.vno.com/governance/conduct-and-ethics](http://www.vno.com/governance/conduct-and-ethics). Our policies, including our Grievance policy, are found in our employee handbook, which our employees must review and acknowledge on an annual basis.

## Employee Health & Benefits

### Financial

- 401(k) and Employer Match
- Tuition Reimbursement
- Employee Referral Bonus
- Commuter Benefits
- Cellular Discounts

### Parental Benefits

- Dependent Care Flexible Spending Account
- Maternity and Parental Leave
- Adoption/Surrogacy/IVF Stipend

### Work/Life Balance

- Employee Assistance Program
- Time Off/Paid Holidays
- Summer Fridays
- Vornado Day of Service

- Offered flexibility to encourage employees to find better balance while supporting the critical need for in-person collaboration in the office

### Health and Wellness

- Medical, Dental, and Vision Coverage Including Telemedicine
- Health Savings Account
- Life Insurance
- Short-Term and Long-Term Disability Insurance
- Healthcare Flexible Spending Account
- Subsidized Gym Memberships
- In-Workplace Flu and COVID Vaccination

- CPR Trainings

- Enhanced our wellness program/initiatives to encourage our employees to adopt healthy behaviors

### Employee Training

- Anti-Harassment
- Cybersecurity
- Continuing Education Through Building Owners and Managers Association (BOMA), IUOE Local 94, Local 32BJ, and the NYU Schack School of Real Estate
- Green Professionals (GPRO) Training, Administered by Urban Green Council

### Events

- Corporate Challenge
- Various Employee Ap Gatherings and Events
- Holiday Parties
- Climate Week
- Earth Day

\*The information at this link was not subject to Deloitte & Touche LLP's review and, accordingly, Deloitte & Touche LLP does not express a conclusion or any form of assurance on such information.

Left two images WorkLife Meet World Cup Viewing Party on PEI



## Diversity, Equity, & Inclusion

GRI 3-3

Vornado operates in a diverse and inclusive environment that empowers the individual and enriches the employment experience. As a business leader in one of the most diverse markets in the world, we have a responsibility to improve representation in the real estate industry.

In 2023, we will continue to enhance our goals and objectives through programming, training, and staff-driven initiatives.

### Vornado After Five

Vornado After Five is a group of Assistant Property Managers, Tenant Service Coordinators, and other Vornado staff that came together in October 2021. The goal of this employee group is to share knowledge, make connections, and grow our employee culture. With support from the COO, New York Division, and other property managers, the group has grown from four employees to more than twenty, with a kickball team in the works for 2023!



### Diversity, Equity & Inclusion Committee

In 2022, BMS formed an internal DE&I Committee with broad representation from all office locations and divisions. The Committee's mission is to advance and preserve a culture of diversity and belonging across all levels of the company and supplier base. A diverse culture makes a stronger, more innovative company. Diversity greatly benefits employees, clients, and community. The Committee's 2023 objectives will have an immediate impact in four key areas:

#### Human Resources

BMS is leading the way in hiring, retaining, and promoting talented employees with diverse backgrounds and experiences. Today, 42% of the company's leadership is female, and 37% represent racial or ethnic minorities.

#### Training

BMS wants to ensure a safe and equitable workplace for all employees. The DE&I Committee is tasked with evaluating the company's DE&I training and is developing a program to strengthen organizational understanding at all levels.

#### Supplier Diversity

In its initial phase, BMS's supplier diversity program requires new and existing suppliers to provide data regarding their diversity status and that of their suppliers. This data will help guide BMS employees to consider supplier diversity when purchasing. It also encourages BMS's suppliers to consider diversity within their supply chains, creating a ripple effect. Having diverse suppliers strengthens our supply chain, increases innovation, and benefits our clients.

#### Giving Back

The Committee has begun expanding community engagement and impact through charitable initiatives and volunteerism. The Committee's goal is to align with organizations that support the needs of women, racial and ethnic minorities, LGBTQ+ individuals, and veterans. The Committee has already begun work with Project Cicero in New York and Women Giving Back in Washington, D.C.



Left employee's at a Vornado After Five event, right employees volunteers at The Price George for Breaking Ground COVID-19 Supplies Packaging

GRI 3-3

As part of our DE&I initiatives, interviews with Vornado employees were conducted to better understand where our efforts have made an impact and where we should focus future efforts. Here's what they had to say:



**Deirdre Maddock**  
Senior Vice President, Chief Accounting Officer

Deirdre joined Vornado in 2016 as a Manager, Corporate Investment Accounting and was most recently Vice President of SEC Reporting and Corporate Accounting. Deirdre earned her B.S. from Florida State University and is a Certified Public Accountant.

"Since I began working at Vornado I have found there are always opportunities to learn something new and continually challenge myself. Support from senior management along with a positive corporate culture has enabled me to develop both as a person and in my career."



**Shakia Hill**  
Property Manager, 1290 Avenue of the Americas

Shakia has been a part of Vornado since 2012, beginning as an Assistant Property Manager and is currently the Property Manager at 1290 Avenue of the Americas.

"During my time at Vornado, I've had the opportunity to work with so many people on many different aspects of property management and learned so much from everyone. Whether it's our leasing, construction, financial planning or operations groups, everyone collaborates and makes their best efforts to work towards our common goal of keeping Vornado one of the industry's leaders. Senior management encourages you to operate at a high bar, be your best and fosters an environment for professional growth."



**Bridget M. Cunningham**  
Vice President, Operations Senior Property

Bridget has been a part of Vornado since 2000, starting as a Tenant Service Coordinator, and currently oversees a portfolio of 6 million square feet of PENN DISTRICT buildings. Bridget was the REBNY On-Site Manager of the Year in 2013 and Vornado Realty Trust NY Office Employee of the Year in 2015.

"I am happy to have built my career at Vornado, working for a company that recognizes talent and promotes from within. This has allowed me to grow and progress while operating world-class buildings and spaces for our staff and tenants."



**Juan Francisco**  
Executive Vice President

Juan serves as the Executive Vice President responsible for New York Regional Operations at BMS. Juan been with BMS/VNO for over 30 years beginning with entry-level supervisor and moving on to positions including Night Supervisor, Sales and Account Manager, Operations Manager, and Director of Operations.

"My commitment to being the best I can be is my greatest motivator and I am very pleased to work for an organization that values this commitment and the results it bears to our tenants and clients. I am also fortunate to have a BMS team that takes pride in performing sustainable cleaning services typically taken for granted throughout our industry."



## Vornado Volunteers

GRI 3-3

"Vornado's longstanding commitment to our communities and our employees is demonstrated through our volunteering and participation in the organizations serving all of our stakeholders. We are committed to having a positive impact in our communities."

-Michael Franco, President & CFO

### Breaking Ground

Vornado partnered with Breaking Ground to provide intervention and support services for the homeless population around THE PENN DISTRICT. Michael Franco, Vornado's President and CFO, has been a Breaking Ground Director since 2012 and its Chairman since June 2015.

Breaking Ground professionals work throughout THE PENN DISTRICT to provide those in need with access to benefits, medical care, mental health care, substance abuse support, and other resources to bring them onto a path towards stability.

### Project Cicero

Project Cicero is a non-profit annual book drive to help under-resourced New York City public schools create and enhance classroom and school libraries. Vornado stores the books and our team volunteers at the book fair every year.

### 34th Street Partnership

Vornado is an active member of the 34th Street Partnership. The not-for-profit management company serves as the Business Improvement District for THE PENN DISTRICT, whose mission is to convene business and civic stakeholders to maintain the District's public safety and promote cultural vibrance and economic viability. Gaston Silva, Vornado's Chief Operating Officer, New York Division, is the Partnership's current Chair.

### THE PENN DISTRICT Community

Vornado also directly engages its employee base in THE PENN DISTRICT community. Through our partnership with the New York City Police Department, our employees volunteer to remove graffiti and restore storefronts throughout THE PENN DISTRICT.

### Jersey Cares

We continue to support Jersey Cares, a non-profit that partners with local organizations to address community needs. In 2022, our employees (1) volunteered at a school in Jersey City building plant beds and seating, (2) volunteered at a community food bank packing meal kits for families in need and (3) led a clean up effort at Liberty State Park.

### Fifth Avenue Association

Vornado, as one of the largest property owners on Fifth Avenue, is an active member of the Fifth Avenue Association. The Association's mission is to ensure the legacy of Fifth Avenue as the most iconic street in the world where fashion, art and ideas come together. Edward Hogan, Vornado's EVP, Head of Retail Leasing, has been Chair of the Association since 2018. The Association is working with the City of New York to enact a \$250 MM renovation of the Avenue from 42nd Street to 59th Street. The redesign of the Avenue will incorporate best practices in sustainability introducing water capture and tree canopy to soften the urban environment and enhance accessibility for all.

## FIFTH AVENUE



Above Jersey Cares clean-up and flower bed repairs in Jersey City, below Breaking Ground event at 90 Sands in Brooklyn

GRI 3-3, 413-1

Through employee engagement and social impact assessment, Vornado Volunteers identifies local community organizations focused on economically and socially disadvantaged populations, environmental restoration and protection, and health and wellness. In 2022, Vornado Volunteers returned to in-person volunteer efforts. Some of those efforts were:

- Vornado staff and tenants participate in the American Lung Association (ALA) Fight for Air Stair Climb. The ALA supports lifesaving lung disease research, early detection initiatives, and pandemic defense and prevention through the ALA's COVID-19 Action Initiative.
- Vornado donates to and volunteers with the Central Park Conservancy, which relies on its volunteers to help keep the park beautiful for all to enjoy. Volunteers paint benches, plant ground cover, rake leaves, and clear plant beds.
- We began a partnership with Sharebite, a minority-founded and owned business that acts as meal benefit platform. For each meal purchased, Sharebite donates a meal through organizations such as Feeding America and City Harvest. In 2022, 9,472 meals were donated.



**Charitable Contributions**

In addition to volunteering, Vornado generously supports charities with financial contributions. Our beneficiaries represent a broad range of worthy causes, with an emphasis on community development, education and youth services, cultural institutions, and medical research. Below is a selection of recipients of Vornado's charitable giving in 2022:

- Lustgarten Foundation
- The Architectural
- Regional Plan Association
- Citizens Budget Commission
- Firefighters Awards Dinner
- Bronx Community College
- Partnership for New York City
- The Drawing Center
- Transportation Alternatives
- American Cancer Society
- Salvadori Center
- ABNY Foundation
- RedConnect
- ULI Foundation
- Real Estate Board Political Action Committee (REBPAC)
- WX Inc. (NY Women Executives in RE)
- 92nd Street Y
- Beverly Willis Architecture
- Center for Architecture



Above Habitat for Humanity Build Day in Brooklyn, below Central Park Conservancy Day in the Dirt

# Health & Wellness

GRI 3-3, 303-2

## Mission to Improve Occupant Health

Vornado is committed to the health of all our employees and our occupants. We successfully maintained our Fitwel Viral Response Module for our portfolio in 2022, based on our building management and safety practices, along with the focus on healthy and clean buildings.

## Indoor Air Quality

- Semi-annual indoor air quality testing programs to measure carbon dioxide, carbon monoxide, volatile organic compounds, particulate matter, temperature, and relative humidity
- Air quality protection from MERV13 or higher filtration systems, entryway control systems, and walk-off mats
- Installation of ongoing Indoor Air Quality (IAQ) monitoring in select locations
- Green cleaning with nonhazardous disinfectants and cleaners
- Smoke-free, tobacco-free company across all our properties

## Water Quality

- Annual legionella and domestic water quality testing
- Comprehensive Water Management Plan

## Mobility and Physical Activity

- Transit-oriented locations
- Subsidized memberships to fitness centers at select locations
- Accessible stairwells and active design strategies

## Safety & Emergency Preparedness

- Emergency Action Plans
- Emergency supplies, Automated External Defibrillators (AEDs), and first-aid kits
- Certified First Responder and CPR training for tenants and staff

## Office Portfolio Accessibility Metrics

**71%**  
Of in-service office portfolio provides on-site bicycle

**98**  
Average walk score

**85**  
Average bike score

**100**  
Transit score



TED Conversation on the PENN 1 Social Stair





## Partnerships & Participation

GRI 2-28, 3-3

Our employees serve as members of and hold board positions in organizations where we make meaningful contributions to ESG issues in real estate. Our partnerships strategically address topics that include energy and water efficiency, climate policy, green building certifications, building electrification, zero waste strategies and recycling, DE&I, ESG reporting frameworks, and sustainable operations and maintenance.

### National

- EPA ENERGY STAR Partner
- U.S. Green Building Council Corporate Member, Greenbuild Program Working Group (Co-Chair)
- Urban Land Institute, Greenprint Center for Building Performance
- NAREIT Real Estate Sustainability Council
- Real Estate Roundtable; Sustainability Policy Advisory Committee; Equity, Diversity & Inclusion Policy Advisory Committee

### Regional

- Northeast Sustainable Energy Association (Board)
- New York Energy Consumer Council (Vice-Chair of the Board of Directors)
- Real Estate Board of New York (REBNY) Sustainability Committee
- Building Energy Exchange
- Urban Green Council
- Retrofit Chicago
- Building Owners and Managers Association (BOMA) New York, Chicago, and San Francisco
- BOMA-New York Pinnacle Each Award Sub-Committee (Chair)
- AIA Committee on the Environment (COTE) Zero Waste Design Guidelines Advisory Board
- Regional Plan Association (Board)
- Young Men's/Women's Real Estate Association (Board)



New York Energy Consumers Council En  
York Awards hosted at PENN 1. Clockwise  
Gaston Silva and Diana Sweeney; top La  
Skaleski, Diana Sweeney, Luis Rios, Ben  
Karen Oh and Mike Fallon.

GRI 3-3

Vornado is proud to support our employees and building teams to achieve our organizational goals, support career development, and honor the work accomplished throughout their careers. Vornado celebrates the achievements of all of our employees, who have shown deep involvement in building projects, engagement with tenants, commitment to serving our communities, and leadership in helping our buildings advance our goals. Some specific highlights from the past year include:



### 2022 Energy New York Awards (NYECC) Gaston Silva, Chief Operating Officer

Gaston Silva received a leadership award for the development of Vornado's sustainability program, which is on track to meet its goal of carbon neutrality by 2030 and for his years in various NYC government positions, positively influencing NY real estate.

"It is truly an honor to be recognized for energy leadership in our great city by the New York Energy Consumers Council, but it is humbling to know that the recognition is the result of the long-standing hard work and steadfast contributions of our very talented industry-leading sustainability team."



### 2022 BEVY Leadership Awards – for Innovation Excellence Judy Kessler

Judy Kessler, a highly accomplished real estate development executive known for leading large-scale building projects as well as supporting housing for low- and moderate-income residents, including the formerly homeless, received the award for innovation excellence.

"It is so moving to be recognized by the Beverly Willis Architecture Foundation for 'Innovative excellence' and humbling to be placed in a long line of talented and extraordinary women in our field. It is a testament to the opportunities that Vornado affords to work on and lead some of the most innovative and impactful projects of our time."



### Commercial Observer's Top Young Professionals Class of 2022 Anthony Cugini

Anthony Cugini is Director on our Leasing team and was recognized for his success in working with the brokerage community and our tenants to find the best solutions, supporting their organizational goals.

"It is an honor to be recognized for the hard work in supporting our tenants to achieve their goals."



### 2022 Best in Building Health Award for Highest Score

Multi-Tenant Whole Building (Built, Recertification) – THE MART is also the largest building in the US to achieve Fitwel certification.

"Vornado is pleased to be recognized by Fitwel for THE MART's achievement in its 2nd Multi-Tenant Whole Building certification. We are able to quantify and qualify our operations and communicate them to our tenants. Fitwel supports our ESG program and the impact that social programming and positive health practices in our buildings can have on occupants and employees."

-Lauren Moss, Senior Vice President and Chief Sustainability Officer, Vornado Realty Tr



# BMS & Green Cleaning\*

GRI 2-6, 3-3, 303-1, 404-1, 413-1, 416-1

Led by BMS, at Vornado, we ensure a healthy indoor environment through our industry-leading green cleaning program. BMS is Vornado's janitorial division and comprises our essential workers who play critical roles in our health and wellness programs. In 2022, BMS achieved **71%** sustainable purchases. (GRI 416-1)

## 2022 Highlights

- BMS ensures its products and cleaning methods meet internal and external sustainability goals and improve building occupants' health and wellness while achieving optimal performance. We have maintained CIMS-GB with honors and GS-42 certifications since 2014.
- In 2022, BMS launched a new virtual training platform onboarding all active janitorial and Dock Parking staff in the New York region. With over 750 OSHA and in-service safety topics, this platform has allowed us to provide standardized, high-quality training more frequently. By the end of 2022, we had 799 course completions on the platform.
- BMS follows enhanced cleaning, disinfection, and maintenance protocols while prioritizing wellness by utilizing disinfectants with Green Seal preferred safer active ingredients like hydrogen peroxide and through the use of vacuums equipped with HEPA filtration.



## 2022 Supply Purchase Impact

### Chemical Use Reduction

**2,294 Gal**  
from chemical-free floor scrubbers

### Water Use Reduction

**567,105 Gal**  
from chemical-free floor scrubbers

### Packaging Reduction

**92.6 Tons**  
from chemical concentrates

### Janitorial Products

**100%**  
are assessed for health and safety improvement

Purchased 50,124 cases of paper products, including 819,416 pounds of recycled paper products, which represents

**1,352 Cubic Yards**  
of landfill space saved

By purchasing liners with postconsumer recycled content, BMS reduced emissions by

**89.3 Tons**  
of CO<sub>2</sub>e in 2022

BMS employee utilizing a CRI-certified (Carpet and Rug Institute) vacuum cleaner at 90 Park Avenue.

## Employee Health & Safety, Employee Health & Safety Training

**70**

BMS supervisors and senior level staff trained in GS-4 green cleaning standard

**100%**

of active BMS employees trained monthly in compliance with training requirements OSHA standards.

**12 Hours**

of training, per employee

**265 Hours**

of safety checks in 2022

\*Any information relating to forward-looking statements, targets, goals, and progress against goals was not subject to Deloitte & Touche LLP's review and, accordingly, Deloitte & Touche LLP does not express a conclusion or any form of assurance on such information.

# Governance

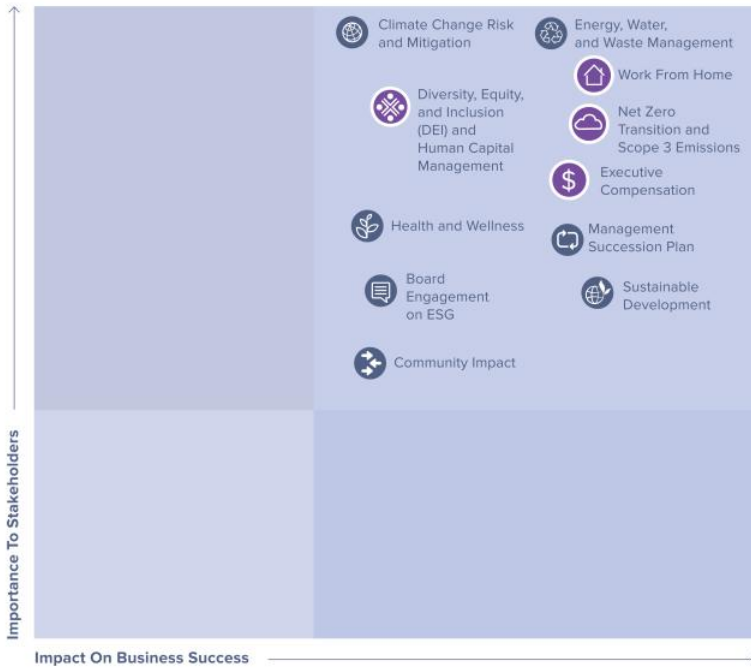
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# ESG Materiality Assessment

GRI 2-6, 2-29, 3-1, 3-2, 3-3



Stakeholder Group	Nature of Engagement	Frequency of Engagement	Key Topics and Concerns in 2022	2023 Plans
<b>Our Tenants</b>	Active relationship through our property management teams; meetings and discussions on tenant environmental performance; Climate Week and Earth Day campaigns; sustainability roundtables and on-site waste training and webinars.	Daily (property management); as-needed (in-person meetings, trainings, and engagement for climate events); semi-annually (roundtable/webinar).	Work from Home Impact; Energy, Water, and Waste Management; Net Zero Transition; Community Impact; Health and Wellness	Continue to engage regularly with roundtables; PENN DISTRICT engagement increased on tenant engagement align ESG goals
<b>Our Investors</b>	Conference calls to discuss corporate governance and ESG issues. Discussions include Vornado's Lead Trustee, President and Chief Financial Officer, Corporation Counsel, and heads of Investor Relations, Human Resources, and Sustainability. Conducted calls with investors representing ownership of at least 40% of all outstanding shares.	Annually, or more frequently as requested. Total investors reached represent over 40% of all Vornado's outstanding shares.	Work from Home Impact; Executive Compensation; Management Succession; Diversity, Equity, & Inclusion and Human Capital Management; Net Zero Transition	Respond to investor and concerns comprehensive program, develop long-term net inclusive of a carbon frame
<b>Our Board</b>	ESG updates to the Board by the President and Chief Financial Officer; presentation from the Chief Sustainability Officer.	Quarterly (from Chief Financial Officer); annually (from Chief Sustainability Officer).	Work from Home Impact; Financial Performance; Executive Compensation; Human Capital Management; Diversity, Equity, & Inclusion; Net Zero Transition	Continue to report progress and Board to ensure are met.
<b>Our Employees</b>	Informal and frequent check-ins on environmental performance; in-person or virtual meetings; support for community involvement and volunteering; employee surveys.	Weekly (informal engagement); annually (in-person meetings, Virtual Town Hall meeting).	Work from Home Impact; Human Capital Management; Health & Wellness; Energy, Water, and Waste Management; Net Zero Transition; Sustainable Development	Develop comprehensive DEI and employee and continue sustainable and net zero development
<b>Our Communities</b>	Active membership and partnerships in community and government organizations focused on civic and environmental issues.	Monthly or more frequently (per meeting schedule).	Work from Home Impact; Net Zero Transition; Energy, Water, and Waste Management; Community Impact; Biodiversity, Climate Change Risk and Mitigation; Sustainable Development	Develop sustainability program for F DISTRICT to include throughout V program focus biodiversity, climate change risk.

\*Any information relating to forward-looking statements, targets, goals, and progress against goals was not subject to Deloitte & Touche LLP's review and, accordingly, Deloitte & Touche LLP does not express a conclusion or any form of assurance on such information.

# Risk Assessment & Analysis

GRI 3-1, 3-2, 3-3

Vornado undergoes a risk assessment and analysis to understand the impact of our activities, the state of the industry and our stakeholder concerns to determine our strategy. Our internal auditor works with our Management and the Audit Committee to determine auditable risks. These are determined by Vornado specific business units, processes, systems, services and/or key identified risk areas.

In 2022, Vornado performed an ESG SEC Diagnostic and Controls Assessment to evaluate the robustness of the ESG internal control environment and the current state of compliance with the SEC proposed climate rule.



PENN 2 Roof Pavilion





## Supply Chain

GRI 2-6, 2-23, 2-24, 3-3, 306-1, 306-2, 306-3, 306-4, 306-5

We recognize that much of our environmental footprint is intertwined with our supply chain. Because of that, we put in place supply chain management strategies to identify risk and perform regular due diligence.

### Vendor Code of Conduct

We require that our suppliers comply with Vornado's Vendor Code of Conduct. In addition to conveying our requirements on business ethics, integrity, and anti-bribery, we require our suppliers to comply with applicable laws and regulations. Our full Code of Conduct can be found at [www.vno.com/sustainability](http://www.vno.com/sustainability).

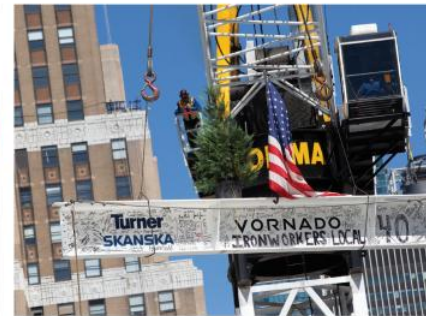
### Vendor Integrity Program

We actively monitor our suppliers' compliance with our Code of Conduct and perform audits of our supply chain through our Vendor Integrity Program (VIP). Vendors are subject to review every three years. More information can be found at [www.vno.com/sustainability](http://www.vno.com/sustainability).

### Responsible Supply Chain Program

In 2022, we expanded our VIP and performed an assessment of the suppliers who comprise 60% of our annual spend and are critical to our ability to accomplish our goals. This evaluation allowed us to understand our suppliers' sustainability performance with ratings on four themes (Environment, Labor & Human Rights, Ethics, and Sustainable Procurement). The suppliers surveyed averaged above 54 and none were deemed to be high risk, or below 24.

PENN 2 Topping Out celebration for all trades involved in the project

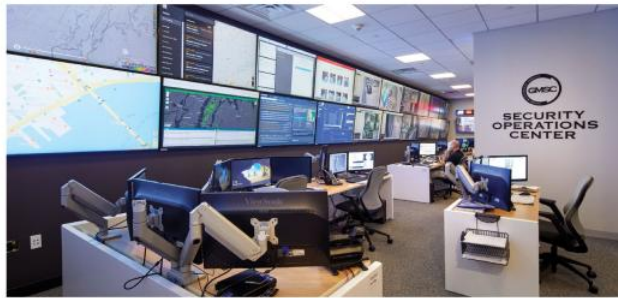


# Technology & Cybersecurity

GRI 3-3

Vornado's Integrated Technology Services Team is the only such group to exist among U.S. REITs. As New York State licensed providers, the team is certified by many of the largest building technology companies.

Our mission is to introduce technological innovation across our portfolio and deliver tangible benefits to our tenants, visitors, and staff. Through integration of advanced electronics and software applications we enable and support Vornado's efficient "smart" buildings.



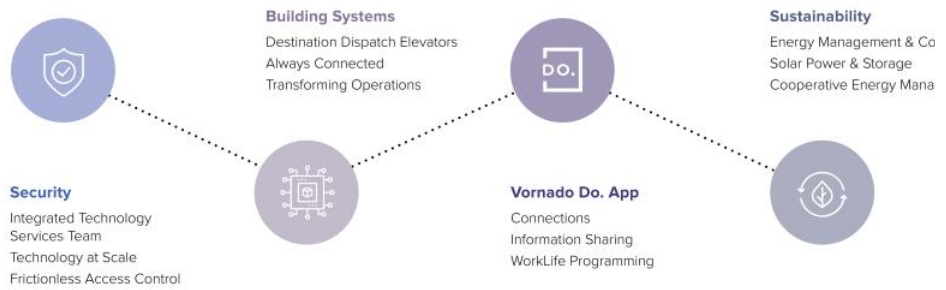
GMSC Security and Operations Center at PENN II.

Our focus on cybersecurity is first and foremost in all our network activities. In 2022, the following activities occurred:

- Conducted intensive penetration test on both external and internal portions of the network
- Performed extensive tabletop exercises to ensure readiness
- Completed a data security audit measuring approximately 25 controls utilized by KPMG as their data security audit
- Reviewed all business continuity plans and readiness assessments
- Conducted multiple phishing exercises within the organization
- Mandatory cyber training for employees
- Audited all backup systems to ensure both that no gaps in backups exist and that all are immutable

In 2023 we will implement Zero Trust Networking technology and passwordless tokenized authentication to the network.

## Technology & Innovation At Vornado



GRI 3-3

**Base Building Security & Networks:**

- Turnstiles and building access
- Exterior and interior cameras and recording
- Vornado's own Internet of Things (IoT) on the converged network
- Building management systems, elevators, submeters
- Advanced visitor management
- Cybersecurity initiatives

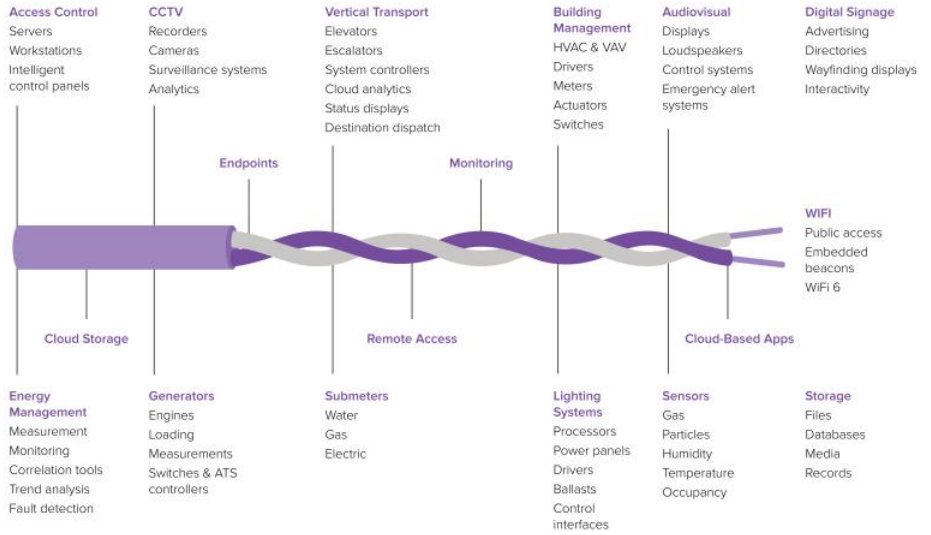
More information can be found here:  
<https://books.vno.com/books/jpkq/#p=1>



90 Park Avenue Lobby

**Security Installations, Service & Maintenance, Supporting Base Building and Tenant Safety:**

- Main Entries: card readers, video intercoms, cameras, facial recognition, mobile access
  - Interiors: panic buttons, cameras, access control on critical doors
  - Programming and Software: access card configuration, software integrations, visitor management platforms
- Vornado has partnered with the New York City Police Department to provide several hundred camera feeds to a central monitoring facility, contributing to higher levels of safety and security throughout NYC.



# Board Planning

GRI 3-3

Our Board is committed to sound governance practices designed to promote the long-term interests of shareholders and to strengthen Board and management accountability. Many of these governance practices were influenced by and responsive to shareholder feedback over the years. Over the last six years, we have added four new independent Trustees, comprising 40% of our board.

We value independent board oversight as an essential component of strong corporate performance to enhance shareholder value. All of our Trustees are independent, except our current and former Chief Executive Officers. In addition, all of the members of our Board's committees, except the Executive Committee, are independent.

The Board annually reviews its leadership structure. Our Proxy Statement can be viewed at <https://investors.vno.com/sec-filings-other-reports/sec-filings/>.

Board Gender Diversity



● Female (30%)  
● Male (70%)

Board Racial/Ethnic Diversity



● Racially/Ethnically Diverse (30%)  
● White (70%)

## Vornado's Newest Board Members



### Beatrice Hamza Bassey

Ms. Beatrice Hamza Bassey joined our Board in 2020. She has served as the Group General Counsel, Chief Compliance Officer, and Corporate Secretary of Atlas Mara Ltd., an African-focused banking group, since February 2015. She has brought legal, investment, financial and international experience. She has since joined the Audit and Compensation Committees of the Board.



### Raymond J. McGuire

Mr. Raymond J. McGuire is President of Lazard Ltd and joined our Board in 2022. He was previously Vice Chairman of Citigroup and Chairman of Citi's Banking, Capital Markets, and Advisory business and brings investment, financial, capital markets, and strategic experience. He has since joined the Compensation Committee of the Board.

	Steven Roth	Candace K. Bernecke*	Michael D. Fascioli	Beatrice Hamza Bassey	William W. Helman IV	David Mandelbaum	Raymond J. McGuire	Mandakini Prui	Daniel R. Tisc
<b>Competency/Attribute</b>									
Operational	●	●	●	●		●	●		●
Public Company Experience	●	●	●	●	●	●	●	●	●
Industry Expertise	●		●			●	●		●
Financial Literacy	●	●	●	●	●	●	●	●	●
Experience Over Several Business Cycles	●	●	●	●	●	●	●	●	●
Capital Markets Expertise	●	●	●	●	●	●	●	●	●
Investment Management	●	●	●	●	●	●	●	●	●
Risk/Crisis Management	●	●	●	●	●	●	●	●	●
Accounting Expertise	●								●
Government/Business Conduct/Legal	●	●	●	●		●	●	●	
Environmental, Social, and Governance	●	●	●	●	●		●		



# Appendix

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# Environmental Results 2022

GRI 302-1, GRI 302-2, GRI 305-1, GRI 305-2, GRI 305-3

Financial Control Method <sup>1</sup> GHG emissions MTCO <sub>2</sub> e	Location-based					Market-based		
	2019	2020	2021	2022	% change 2021-2022	2021	2022	% Change 2021-2022
Scope 1	28,577	29,190	29,864	31,311	4.8%	29,864	31,311	4.8%
Scope 2	177,977	133,997	131,405	166,129	26.4%	83,295	61,472	-26.2%
Scope 1 + 2 Total	206,554	163,187	161,269	197,441	22.4%	113,159	92,784	-18.0%
Scope 3	49,760	42,997	39,633	43,871	10.7%	39,633	43,871	10.7%
Grand Total	256,314	206,184	200,902	241,311	20.1%	152,792	136,654	-10.6%

Energy Consumption (MWh)	2019	2020	2021	2022
Chilled Water	12,702	9,220	11,540	10,384
District Steam	259,472	186,163	178,230	191,294
Electricity	556,572	440,095	416,020	435,101
Fuels	182,586	186,127	187,256	201,890
Cogenerated Fuels <sup>2</sup>	38,894	55,391	54,337	61,907
<b>Total</b>	<b>1,011,332</b>	<b>821,605</b>	<b>793,046</b>	<b>838,669</b>

The consumption and emissions data on this page are presented absolute basis.

In 2022, our location-based Scope 2 emissions differentiated significantly our market-based Scope 2 emissions due to our investment in renewable energy certificates in 2022 in addition to the increased eGRID factor. We continue to report our Scope 2 emissions on both a location and market-based basis.

Because the market-based approach reflects progress on our Vision 2030 carbon neutrality commitment, we will rely on the market-based approach for reporting on our emissions-related goals and targets, including the green debt instruments and executive compensation.

Our Scope 2 emissions inventory includes emissions from tenant electricity that is submetered downstream from our building electricity accounts. We consider these emissions to be within our financial control. If the electricity from submeter tenant electricity were instead to be considered Scope 1 emissions (an approach that is followed by other real estate companies), we estimate our Scope 2 emissions for 2022 to be 90,554 MTCO<sub>2</sub>e. Our Scope 1 + 2 emissions intensity to be 0.0031 MTCO<sub>2</sub>e/SF.

### SCOPE 1: 167,573 MWh

Oil & Natural Gas Heating and Cooling

Cogenerated Fuels

### SCOPE 2: 529,791 MWh

District Steam

Base Building Electricity

Submetered Tenant Utilities

TOTAL: 697,365 MWh

### SCOPE 3: 141,304 MWh

Direct Metered Tenant Utilities

<sup>1</sup>We have chosen to report our emissions based on financial control from the World Resources Institute's Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, 2004 Edition. We report 100% of emissions from properties both wholly owned and with a 20% ownership, not properties listed in development. Location-Based reflects emissions from properties based on the grid average emission factor, while Market-Based reflects emissions from properties based on our purchasing decisions. Our Scope 1 emissions include combustion from oil and natural gas. Scope 2 emissions include our district steam and electricity consumption, including electricity consumed by our submeter tenants. Scope 3 includes other utility consumption within the direct control of our tenants.

<sup>2</sup>Fuel consumption is inclusive of cogenerated fuels.

# Diversity, Equity, & Inclusion

GRI 2-7, GRI 2-9, GRI 401-1

## Social Demographics: Vornado 2022

Our VNO employees are: **53% Female**  
**31% Racial Minorities**

### Key Findings

Gender		Total Employees	% All Employees	Permanent	Temporary	Full-Time	Part-Time	Racial Minorities* (%)
All Employees	Male	260	47%	248	12	257	3	28.46%
All Employees	Female	293	53%	278	15	287	6	34.13%
AVP or Above	Male	76	14%	76	0	76	0	15.79%
AVP or Above	Female	44	8%	44	0	44	0	22.73%
Age		Total Employees	% All Employees	Permanent	Temporary	Full-Time	Part-Time	Racial Minorities* (%)
All Employees	< 30 Years Old	117	21%	91	26	111	6	22.22%
All Employees	30-50 Years Old	259	47%	258	1	256	3	39.38%
All Employees	> 50 Years Old	177	32%	177	0	177	0	25.99%
AVP or Above	< 30 Years Old	0	0%	0	0	0	0	0.00%
AVP or Above	30-50 Years Old	73	13%	73	0	73	0	21.92%
AVP or Above	> 50 Years Old	47	8%	47	0	47	0	12.77%
Region		Total Employees	% All Employees	Permanent	Temporary	Full-Time	Part-Time	Racial Minorities* (%)
New York		260	47%	244	16	252	8	25.77%
New Jersey		232	42%	221	11	231	1	39.66%
Chicago		56	10%	56	0	56	0	19.64%
San Francisco		5	1%	5	0	5	0	80%

Tenure***	0-4 Years	5-9 Years	10-19 Years	20+ Years	Total	Average Tenure for Vornado Employees:
# Of Employees	197	147	104	95	543	<b>10.68 yrs</b>
% All Employees	36.28%	27.07%	19.15%	17.50%	100.00%	

Vornado 2022 Number Of New Hires						2022 Employee Turnover Rate**	15.68%	
2022 Number Of New Hires						71		
By Age	By Gender		By Region			Total		
< 30 Years Old	38	54%	Male	30	42%	New York	40	56%
30-50 Years Old	25	35%	Female	41	58%	New Jersey	25	35%
> 50 Years Old	8	11%				Chicago	4	6%
						San Francisco	2	3%
Total	71	100%	Total	71	100%	Total	71	100%

## Social Demographics: BMS 2022

Our BMS employees are: **36% Female**  
**76% Racial**

### Key Findings

Gender		Total Employees	% All Employees	Permanent	Temporary	Full-Time	Part-Time	Racial Minorities* (%)
All Employees	Male	2400	64.99%	2054	346	1936	464	
All Employees	Female	1293	35.01%	1145	148	957	336	
Age		Total Employees	% All Employees	Permanent	Temporary	Full-Time	Part-Time	Racial Minorities* (%)
All Employees	< 30 Years Old	517	14.00%	365	152	353	164	
All Employees	30-50 Years Old	1592	43.11%	1378	214	1235	357	
All Employees	> 50 Years Old	1584	42.89%	1456	128	1305	279	
Region		Total Employees	% All Employees	Permanent	Temporary	Full-Time	Part-Time	Racial Minorities* (%)
New York		2335	63.23%	2116	219	2291	44	
New Jersey		37	1.00%	31	6	10	27	
Chicago		453	12.27%	185	268	182	271	
San Francisco		5	0.14%	5	0	5	0	
Mid-Atlantic		860	23.29%	860	0	402	458	
Other		3	0.08%	3	0	3	0	

2022 Employee Turnover Rate	32.00%
New Hires In 2022	958

BMS 2022 Number of New Hires							
By Age	By Gender		By Region			Total	
< 30 Years Old	292	30.48%	Male	620	64.72%	New York	549
30-50 Years Old	443	46.24%	Female	338	35.28%	New Jersey	10
> 50 Years Old	223	23.28%				Chicago	208
						San Francisco	5
						Mid-Atlantic	183
						Other	3
Total	958	100.00%	Total	958	100.00%	Total	958

\* These figures represent the diversity of our organization and are inclusive of the following racial minority groups: Black American, Hispanic/Latino/Latina, Asian/Pacific Islander, and American Indian/Alaskan Native.  
\*\* Demographics were not collected for employees who left employment in 2022.  
\*\*\* Any information relating to employee tenure was not subject to Deloitte & Touche LLP's review and, accordingly, De LLP does not express a conclusion, opinion, or any form of assurance on such information.

Management of Vornado Realty Trust is responsible for the completeness, accuracy, and validity of the disclosures in the GRI Index included within the Environmental, Social & Governance Report of Vornado Realty Trust as of and for the year ended December 31, 2022. Management is responsible for the collection, quantification, and presentation of the disclosures and for the selection of the criteria, which management believes provide an objective basis for measuring and reporting on the disclosures. Measurement of certain disclosures includes estimates and assumptions that are subject to substantial inherent measurement uncertainty resulting, for example, from accuracy and precision of GHG conversion factors or estimation methodologies used by management.

The selection by management of different but acceptable measurement methods, input data, or assumptions may have resulted in materially different amounts or disclosures being reported. Management asserts that the disclosures in the GRI Index included within the Environmental, Social & Governance 2022 Report of Vornado Realty Trust as of and for the year ended December 31, 2022 are presented in accordance with the GRI Sustainability Reporting Standards.

GRI Content Index	Response
Statement of Use	Vornado Realty Trust has reported the information cited in this GRI content index for the period January 2022 - December 2022 with reference to the GRI Standards.
GRI 1 used	GRI 1: Foundation 2021

GRI 2: General Disclosures

Disclosure	Description	Response
<b>The organization and its reporting practices</b>		
2-1	Organizational details	<p>Vornado Realty Trust</p> <p>Fully-integrated REIT and conducts its business through, and substantially all of its interests in properties are held by Vornado Realty L.P., the "Operating Partnership", a Delaware limited partnership. Accordingly, VNO's ability to pay dividends to its shareholders are dependent upon the cash flow of the Operating Partnership and the ability of its direct and indirect subsidiaries to first satisfy their obligations to creditors. VNO is the sole general partner of and owned approximately 92% of the common limited partnership interest in the Operating Partnership as of December 31, 2022.</p> <p>888 Seventh Avenue, New York, NY</p> <p>United States of America</p>
2-2	Entities included in the organization's sustainability reporting	The entities included in this ESG 2022 report include, Vornado Realty Trust (VNO); BMS; Alexander's, Inc. Vornado's ESG reporting includes 100% of in-service properties, not listed as under development, with VNO ownership.
2-3	Reporting period, frequency and contact point	<p>January 1, 2022 - December 31, 2022 is for both the ESG 2022 Report and financial reporting.</p> <p>Annual</p> <p>April 7, 2023</p> <p>Steven Borenstein, SVP &amp; Corporation Counsel, sborenstein@vno.com</p>
2-4	Restatements of information	No Restatements.
2-5	External Assurance	Our Board is committed to sound governance practices designed to promote the long-term interests of shareholders and to strengthen Board and management accountability. The Board and the Corporate ESG Team includes the Lead Trustee of the Board, are the highest positions that seek external assurance for the organization's ESG report. The Corporate ESG team authorizes the external assurance engagement, is involved in the messaging of the report, and reviews the ESG report before issuance. Board Planning p. 38, The Independent Accountants' Review Report can be found on p. 48 of this report, available online at <a href="http://www.vno.com">www.vno.com</a>



GRI 2: General Disclosures

Disclosure	Description	Response
<b>Activities and workers</b>		
2-6	Activities, value chain and other business relationships	<p>Our primary property types are office and retail with geographic locations in New York, Chicago, and San Francisco. Also see Materiality Assessment p. 33, and Tenant Engagement p. 19 of this report.</p> <p>We currently own all or portions of: New York; 19.9 million square feet of Manhattan office in 30 properties; 2.6 million square feet of Manhattan street retail space in 56 properties; 1,664 units in 6 residential proper development sites, including 350 Park Avenue and the Hotel Pennsylvania site; A 32.4% interest in Alexander's, Inc. ("Alexander's") (NYSE: ALX), which owns six properties in the greater New York metropolitan area Lexington Avenue, the 11 million square foot Bloomberg, L.P. headquarters building, and The Alexander, a 312-unit apartment tower in Queens; Signage throughout THE PENN DISTRICT and Times Square. Other re investments: The 3.7 million square foot THE MART in Chicago; A 70% controlling interest in 555 California Street, a three-building office complex in San Francisco's financial district aggregating 1.8 million square fe real estate and investments.</p> <p>30+ office properties in New York, Chicago, and San Francisco; 56+ retail properties in New York and surrounding regions and Annapolis, Maryland; 1,664 residential apartments in New York City; \$1,800 billion total ESG Governance, p. 4.</p> <p>Vornado engages BMS LLC as a supplier of janitorial supplies and equipment for our properties, Supply Chain p. 35, and BMS/Green Cleaning p. 31.</p> <p>No significant changes to the organization's sector, the entire value chain, and other relevant business relationships.</p>
2-7	Employees	<p>In 2022, Vornado in conjunction with BMS employed 4,246 employees, 553 of which are employed by Vornado, and 3,693 of which are employed by BMS. Vornado employees are responsible for operations, man development, cash flow and ownership of its real estate assets and fiduciary duty to its stakeholders. Vornado does not employ non-guaranteed hours employees. There are no significant variations in the number during the reporting period or between reporting periods. Vornado uses FTE methodology to track its employee counts and tracks all employees during the GRI reporting period. Diversity, Equity, &amp; Inclusion, p. 41.</p>
2-8	Workers who are not employees	<p>The significant portion of Vornado's activities are performed by workers employed by Vornado. Vornado hired approximately 20 interns in 2022. Vornado considers BMS workers who are not employees and whos trolled by the organization, the number of workers is approximately 3,693 in 2022. There are not any significant fluctuations in the number of workers during or between work periods. The information included in It has been supplied and created by Vornado's &amp; BMS's Human Resources departments, respectively. Vornado uses FTE methodology to track its employee counts for anyone who was employed at any point during BMS &amp; Green Cleaning p. 31 and Diversity, Equity, &amp; Inclusion, p. 41.</p>
<b>Governance</b>		
2-9	Governance Structure and composition	<p>ESG Governance, p. 4 and Board Planning p. 38 of this report.</p>
2-10	Nomination and selection of the highest governance body	<p>Our Board believes that the Board should be comprised of members who encompass a broad range of skills, expertise, industry knowledge, and diversity of opinion, experience, perspective and contacts relevant ness. Our Board is deeply involved in the business and strategy of our Company and the great depth of experience and insight that our Board members bring to meetings continues to be invaluable. The Corporati and Nominating Committee and the Board believe that considering a Board candidate involves various objective and subjective assessments, many of which are difficult to quantify or categorize. However, the Cor ESG Governance, p. 4 and Board Planning p. 38 of this report.</p> <p>See pp. 13-20 of 2022 Proxy issued April 8, 2022.  <a href="https://materials.proxyvote.com/Approved/929042/20220321/NPS_497984/INDEX.HTML?page=27">https://materials.proxyvote.com/Approved/929042/20220321/NPS_497984/INDEX.HTML?page=27</a></p>
2-11	Chair of the highest governance body	<p>Mr. Roth has been the Chairman of our Board of Trustees since May 1989 and Chairman of the Executive Committee of the Board since April 1980. From May 1989 until May 2009, Mr. Roth served as our Chief Execo Since April 15, 2013, Mr. Roth has again been serving in that position. Since 1968, he has been a general partner of Interstate Properties (an owner of shopping centers and investor in securities and partnerships, "Iri he currently serves as its Managing General Partner. He is the Chairman of the Board of Directors and Chief Executive Officer of our affiliate, Alexander's, Inc. Since January 15, 2015, Mr. Roth has been a member of Trustees of Urban Edge Properties (a New York Stock Exchange-listed real estate investment trust that we spun-off and which holds the Company's former shopping center business, "Urban Edge"). Mr. Roth will be the Urban Edge board effective as of its 2023 annual meeting. From July 18, 2017 until May 15, 2021, Mr. Roth was the Chairman of the Board of Trustees of JBG SMITH Properties (a New York Stock Exchange-listed investment trust and the spun-off successor to our former Washington D.C. business, "JBG SMITH"). Each of these other Boards upon which Mr. Roth serves is either a current affiliate of the Company or a company Vornado. Our board believes the presence of Mr. Roth on each of these Boards is beneficial to the Company and/or the broadly overlapping shareholder base of the Company, Urban Edge, and Alexander's.</p> <p>Also, refer to GRI 2-15 regarding Conflicts of Interest.                  See p. 6 of 2022 Proxy issued April 8, 2022.  <a href="https://materials.proxyvote.com/Approved/929042/20220321/NPS_497984/INDEX.HTML?page=19">https://materials.proxyvote.com/Approved/929042/20220321/NPS_497984/INDEX.HTML?page=19</a></p>

GRI 2: General Disclosures

Disclosure	Description	Response
<b>Governance (continued)</b>		
2-12	Role of the highest governance body in overseeing the management of impacts	While day-to-day risk management is primarily the responsibility of the Company's senior management team, the Board is responsible for the overall supervision of the Company's risk management activities. The oversight of the material risks faced by our Company occurs at both the full Board level and at the committee level. The Board's role in the Company's risk oversight process includes receiving reports from members of senior management on areas of material risk to the Company, including operational, financial, legal and regulatory, reputational, cybersecurity, environmental, social, governance and climate change risks. The full Board (or the appropriate committee in the case of risks that are under the purview of a particular committee) receives these reports from the appropriate "risk owner" within our organization or in connection with other management-prepared presentations of risk to enable the Board (or committee, as applicable) to understand a risk, its materiality, risk management and risk mitigation strategies. By "risk owner," we mean that person or group of persons who is or are primarily responsible for overseeing a particular risk. As part of its charter, the Board discusses our guidelines and policies with respect to which our management assesses and manages the Company's exposure to risk and reports to the full Board its conclusions as a partial basis for further discussion with the full Board. This enables the Board and the applicable committees to coordinate the risk oversight role, particularly with respect to risk interrelationships. In addition to the Board's review of risks applicable to the Company generally, the Board conducts regular strategic and personnel reviews. ESG Governance, p. 4 and Board Planning p. 38 of this report. See p. 20 of 2022 Proxy Statement issued April 8, 2022. <a href="https://materials.proxyvote.com/Approved/929042/20220321/NPS_497984/INDEX.HTML?page=34">https://materials.proxyvote.com/Approved/929042/20220321/NPS_497984/INDEX.HTML?page=34</a>
2-13	Delegation of responsibility for managing impacts	Responsibilities of managing the organization's impacts on the economy are appointed to the Corporate ESG team, including the Lead Trustee, President & CFO, the Chief Administrative Officer, Corporation Counsel, Human Resources and Chief Sustainability Officer. These executives meet on a regular basis for ESG strategy implementation and report back to the Board on a quarterly frequency and to investors on an annual frequency. ESG Governance, p. 4 of this report.
2-14	Role of the highest governance body in sustainability reporting	Board of Trustees - Corporate Governance and Nominating Committee is the highest position in the governance structure. The Lead Trustee is part of the Corporate ESG Team, which is responsible for initiating and approving the reported information, including the organization's material topics. ESG Governance, p. 4 of this report.
2-15	Conflicts of Interest	Conflicts of interest should, wherever possible, be avoided. However, the Company recognizes that its corporate structure and business investments do not make it practicable or desirable to avoid all relationships that give rise to conflicts of interest. Accordingly, conflicts of interest, potential conflicts of interest, or relationships which are identified as giving rise to potential conflicts of interest that are approved by, or at the direction of, the Board of Trustees or the Corporate Governance and Nominating Committee or that have been previously disclosed in the Trust's Annual Report on Form 10-K are permitted. Any material transaction or relationship reasonably be expected to give rise to a conflict of interest should be discussed with the appropriate Code of Ethics Contact Person if not previously approved by, or at the direction of, the Board of Trustees or the Corporate Governance and Nominating Committee or previously disclosed in the Trust's Annual Report on Form 10-K. See VNO website, <a href="https://www.vno.com/governance/conduct-and-ethics">https://www.vno.com/governance/conduct-and-ethics</a>
2-19	Remuneration Policies	See p. 28-63 of 2022 Proxy Statement issued April 8, 2022.
<b>Strategy, policies and practices</b>		
2-22	Statement on sustainable development	From Our Chairman, p. 1 of this report.
2-23	Policy commitments	Policy commitment is approved at the board level and are implemented by the VNO executive team, VNO Corporate ESG team and Sustainability team. Policies are found on VNO's website and within this ESG Report. Code of Business Conduct and Ethics promotes honest and ethical conduct, including fair dealing and the ethical handling of conflicts of interest; promotes full, fair, accurate, timely, and understandable disclosure; ensures compliance with applicable laws and governmental rules and regulations; ensures the protection of the Trust's legitimate business interests, including corporate opportunities, assets, and confidential information; and prohibits wrongdoing. Our expanded policy can be found on our Conduct and Ethics VNO Web page, found at <a href="https://www.vno.com/governance/conduct-and-ethics">https://www.vno.com/governance/conduct-and-ethics</a> . While Vornado has not formally adopted the Precautionary Principle, we apply a precautionary approach in our operational planning or when introducing new products to our buildings. GHG emissions and indoor air quality are among many of the environmental risks that we seek to avoid and mitigate. Our policies regarding Vornado's commitment to Human Rights and to conduct Due Diligence can be found in further detail in Vornado's Vendor Code of Conduct, Vendor Integrity Program and Responsible Supply Chain Program policy documentation, Supply Chain, p. 35 & Climate Risk & Adaptation pp. 14-16.
2-24	Embedding policy commitments	ESG strategy implementation within respective areas of focus. Daily discussions and active collaboration on specific projects as well as ongoing operations and maintenance. Integration of ESG strategy across all business units and stakeholder groups. Frequent communication with respective heads of management. Our policies regarding Vornado's commitment to Human Rights can be found in further detail in Vornado's Vendor Code of Conduct, Vendor Integrity Program and Responsible Supply Chain Program policy documentation, Supply Chain, p. 35 & Climate Risk & Adaptation pp. 14-16. Environmental Goals & Progress, p. 7, Energy Efficiency Programs, p. 10, Sustainable Development, p. 13, Climate Risk & Adaptation pp. 14-16, Responsible Recycling p. 17, DEI p.24, Human Capital Management, p. 28, Tenant Engagement, p. 19, BMS & Green Cleaning, p. 31, Tenant & Community Development, p. 20-22, Partnership & Participation, p. 29, Honors & Recognition, p. 30, ESG Governance, p. 4, Risk Management, p. 34, Technology & Cybersecurity, pp. 36-37, and Supply Chain, p. 35.
2-25	Processes to remediate negative impacts	Human Capital Management, p. 23. Vornado offers a number of trainings through third party service providers that educate employees on the appropriate steps to report grievances. Incidents are tracked by Human Resources and are followed up on.

GRI 2: General Disclosures

Disclosure	Description	Response
Strategy, policies and practices (continued)		
2-27	Compliance with laws and regulations	No significant instances of non-compliance. We consider 'significant instances of non-compliance with laws and regulation' as those listed in Vornado Form 10-K for the fiscal year ended December 31, 2022, 'Note 21: Contingencies' on pp. 113-114.
2-28	Membership associations	Our Partnerships & Participation, p. 29 of this report.
Stakeholder Engagement		
2-29	Approach to stakeholder engagement	The corporate Stakeholder Engagement strategy is applied consistently across all operations. We have a robust and ongoing shareholder engagement program and demonstrated responsiveness to feedback. We renew our ESG Materiality Assessment each year with our stakeholders in preparation of our overall ESG strategy and the annual ESG report, reconfirming and expanding our topics of materiality. Stakeholders were identified and selected through our materiality assessment & stakeholder engagement efforts that were formed back in 2017, aligning stakeholders with key ESG topics of concern and an approach to address these topics. We renew this process each year with our stakeholders, reconfirming and expanding our topics of materiality. This engagement was considered and incorporated into the 2022 report as appropriate Tenant Engagement, p. 19 & ESG Materiality Assessment, p. 33.
2-30	Collective bargaining agreements	84% or a total of 3,574 employees are covered by collective bargaining agreements. For employees not covered by collective bargaining agreements, the working conditions and terms of employment of these employees influenced or determined based on other collective bargaining agreements.

GRI 3: Material Topics

Disclosure	Description	Response			
3-1	Process to determine material topics	Our material topics are identified through a robust Governance structure and processes and annual risk assessment, including identification, prioritization, monitoring, and engagement discussions with stakeholders. ESG Governance, p. 4, Risk Assessment & Analysis p. 34, and ESG Materiality Assessment, p. 33 of this report. Pages 20-24 of the 2022 Proxy issued April 8, 2022.			
3-2	List of Material Topics	Board Structure, Tenure, and Refreshment; Board Engagement on ESG; Energy, Water, and Waste Management; Climate Change Risk and Mitigation; Human Capital Management; Diversity, Equity, & Inclusion; Carbon Emissions and Carbon Footprint Reporting; Net Zero Transition and Scope 3 Emissions; Local Communities; Management Succession Plan; Executive Compensation; Health and Wellness; W Home Impact; Sustainable Development; Community Impact. No significant changes in reporting, all topics found on ESG Materiality Assessment p. 33.			
3-3	Management of material topics	Our approach to management of materials topics is through an Internal Audit Risk Assessment ("Risk Assessment") that is updated as needed to incorporate any future changes in the risk profile of the business, and at minimum annually. The first step is to conduct a Risk Workshop with the Risk Committee to discuss the risk landscape of the business and how it relates to strategic initiatives, emerging risks and corresponding mitigating activities. All risks during the workshop and survey are collated into a single risk universe document and gathered additional data points by: Reviewing results from prior year internal audit reports; Researching peer organizations; Applying internal institutional knowledge, Considering industry hot topics. Based on the results of the risk assessment, a proposed FYE internal audit plan is developed to address the most significant risks.			
		Once the Internal Audit Plan of risk assessment is developed, each identified risk is assigned a high, medium or low score across various risk factors, and risk topics per category are identified and prioritized based on the risk scores along with the impact and likelihood of occurrence. Internal Audit Risk Assessment is presented to the Board/Audit Committee in the beginning of the year. The audit plan is approved by the Board/Audit Committee and then executed, risks monitored, and assessments are performed at the direction of the Risk Committee.			
		While Vornado has not formally adopted the Precautionary Principle, we apply a precautionary approach in our operational planning or when introducing new products to our buildings. GHG emissions and indoor air pollutants many of the environmental risks that we seek to avoid and mitigate.			
		Material Topics	Ref # (s)	Material Topics	Ref # (s)
		Energy, Water, and Waste Management	Environmental Goals & Progress p. 7, Environmental Results 2022 p. 8, Energy Efficiency Programs p. 10, Energy Progress pp. 11-12, Responsible Recycling p. 17	Executive Compensation	See pp. 28-63 of 2022 Proxy issued April 8
		Climate Change Risk and Mitigation	Climate Risk & Adaptation pp. 14-16	Health and Wellness	Health & Wellness p. 28, BMS & Green Clea
		Diversity, Equity, & Inclusion (DEI) and Human Capital Management	Diversity, Equity, & Inclusion pp. 24-25, Human Capital Management p. 23, Honors & Recognition p. 30	Work from Home Impact	Climate Risk & Adaptation pp. 14-16, Health p. 28, BMS & Green Cleaning p. 31, Technol Cybersecurity pp. 36-37
Net Zero Transition and Scope 3 Emissions	Climate Risk & Adaptation pp. 14-16, Supply Chain p. 35	Sustainable Development	Sustainable Development p. 13, Climate Risk pp. 14-16		
Board Engagement on ESG	ESG Governance p. 4, Risk Assessment & Analysis p. 34, ESG Materiality Assessment p. 33, Board Planning p. 38	Community Impact	Vornado Volunteers pp. 26-27, Tenant Enga p. 19, Tenant & Community Development pp Partnerships & Participation p. 29		
Management Succession Plan	See p. 13 of 2022 Proxy issued April 8, 2022				

GRI 200-400: Topic-Specific Disclosures

GRI Topics	Disclosure	Description	Response
<b>Economic</b>			
GRI 201: Economic Performance 2016	201-2	Financial implications and other risks and opportunities due to climate change	Vornado has begun to assess the financial implications and the other risks and opportunities due to climate change and intends to report this in the future. Vornado's approach is stated in Climate Risk & A pp. 14-16 of this report, Tenant Engagement p. 19 and SASB Disclosure on Climate Change Adaptation, p. 53 of this report.
<b>Environmental</b>			
GRI 302: Energy 2016	302-1	Energy consumption within the organization	Environmental Results 2022, p. 40 of this report. We utilized the Thermal Energy Conversion factors from ENERGY STAR Portfolio Manager Technical Reference Guide published by EPA. Our energy is con using generic conversion factors. Our total energy reported within the organization is 37,382 GJ of chilled water, 681,241 GJ of district steam, 1188,548 GJ of electricity, and 603,239 GJ of fuels. The total en the organization is 2,510,409 GJ. The majority of Vornado's heating consumption is from district steam sources, which are reported on p. 8. Vornado does not sell electricity, heating, cooling, or steam. All f tion reported is non-renewable.
	302-2	Energy consumption outside of the organization	Environmental Results 2022, p. 40 of this report. We utilized the Thermal Energy Conversion factors from ENERGY STAR Portfolio Manager Technical Reference Guide published by EPA. Total energy outsi organization is 508,675 GJ.
	302-3	Building energy intensity	Environmental Results 2022, p. 8 of this report. Our denominator is the square footage as outlined in the boundaries found in the endnotes of this report. Building energy intensity reported includes all en in 302-1 & 302-2 reported amounts. We utilized the latest available emission factors for each energy type and Global Warming Potential factors from the Fifth Assessment Report (SAR) published by Interg Panel on Climate Change and EPA ENERGY STAR Portfolio Manager GHG Technical Reference to calculate our GHG inventory. No significant recalculations occurred. Consolidation approach as defined in boundary endnoted in this report. Biogenic emissions of CO2 that occur in the life cycle of biomass other than from combustion or biodegradation are not applicable.
GRI 303: Water 2018	303-1	Interactions with water as a shared resource	Environmental Results 2022, p. 8 of this report. All water listed is municipal water supply. No other sources of consumed water are of material quantities. Water converted from source unit of measure meters. BMS/Green Cleaning, p. 26; SASB Disclosure on Water Management, p. 53 of this report.
	303-3	Water withdrawal	Environmental Results 2022, p. 8, SASB Disclosure on Water Management p. 51 of this report. All water listed is municipal water supply converted from source unit of measure to cubic meters or 2,218.52 r No other sources of consumed water are of material quantities. Water listed is municipal and is converted fresh water. Our baseline water stress is 275.07 megaliters. Data regarding third-party water sour stress areas is not available.
GRI 305: Emissions 2016	305-1	Scope 1 GHG emissions	2022 & base year 2019 Results, p. 40 of this report. Gases included are CO2, CH4, and N2O. We utilized the latest available emission factors for each energy type and Global Warming Potential factors fro Assessment Report (SAR) published by Intergovernmental Panel on Climate Change and EPA ENERGY STAR Portfolio Manager GHG Technical Reference to calculate our GHG inventory. No significant rec occurred. Consolidation approach as defined in the reporting boundary endnoted in this report. All GHG emission Scopes have base years of 2019, which is aligned with our SBTI commitment, as well as ) 2030 Carbon Neutrality plan. Biogenic emissions of CO2 that occur in the life cycle of biomass other than from combustion or biodegradation are not applicable.
	305-2	Scope 2 GHG emissions	2022 & base year 2019 Results, p. 40 of this report. Gases included are CO2, CH4, and N2O. We utilized the latest available emission factors for each energy type and Global Warming Potential factors fro Assessment Report (SAR) published by Intergovernmental Panel on Climate Change and the eGRID 2021 to calculate our GHG inventory. Market-based Scope 2 emissions are calculated per the GHG Prot hierarchy, applying purchased and retired Renewable Energy Certificates (RECs), then applying 2022 Green-e residual mix emissions rates (based on 2020 eGRID data) to the remaining MWh not covered significant recalculations occurred. Consolidation approach as defined in the reporting boundary endnoted in this report. All GHG emission Scopes have base years of 2019, which is aligned with our SBTI as well as our Vision 2030 Carbon Neutrality plan.
	305-3	Scope 3 GHG emissions	2022 & base year 2019 Results, p. 40 of this report. Gases included are CO2, CH4, and N2O. We utilized the latest available emission factors for each energy type and Global Warming Potential factors fro Assessment Report (SAR) published by Intergovernmental Panel on Climate Change, EPA ENERGY STAR Portfolio Manager GHG Technical Reference guide, and the eGRID 2021 to calculate our GHG inve nificant recalculations occurred. Consolidation approach as defined in the reporting boundary endnoted in this report. All GHG emission Scopes have base years of 2019, which is aligned with our Vision 2 Neutrality plan. Biogenic emissions of CO2 that occur in the life cycle of biomass other than from combustion or biodegradation are not applicable.
	305-4	GHG emissions intensity	Environmental Results 2022, p. 8 of this report. Our numerator includes Scope 1, 2, & 3 emissions, and our denominator is the square footage as outlined in the boundaries found in the endnotes of this re
GRI 306: Effluents and Waste 2020	306-1	Waste generation and significant waste-related impacts	Reported amounts represent waste impact within the organization, its activities and its tenants activities. Waste disposal method has been directly confirmed by the organization through annual on-site visi off-site facilities. Information is provided by waste disposal contractor on a monthly basis. Responsible Recycling, p. 17, Tenant Engagement, p. 19, Supply Chain, p. 35.



GRI 200-400: Topic-Specific Disclosures

GRI Topics	Disclosure	Description	Response
<b>Environmental (continued)</b>			
GRI 306: Effluents and Waste 2020	306-2	Waste by type and disposal method	Waste disposal method and waste management practices have been directly confirmed by the organization through annual on-site visits to the off-site facilities. Information is provided by waste disposal a monthly basis. The only diversion methods applicable to our operations are recycling and composting. We track C&D waste and amounts fluctuate significantly, therefore, we report it separately. C&D for 2022 was 3,165 metric tons, of which 2,971 tons were recycled and 194 tons were landfilled. All C&D waste was nonhazardous. In 2022, we generated 11,577 metric tons of waste, 6,377 metric tons were diverted from disposal and 5,111 metric tons were directed to disposal. No disposal of hazardous waste outside of diversion methods. See Environmental Results 2022, p. 8; Responsible Recycling p. 17; Supply Chain, p. 35.
	306-3	Waste generated	
	306-4	Waste diverted from disposal	
	306-5	Waste directed to disposal	
<b>Social</b>			
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	Tenant Engagement p. 19, Diversity, Equity, and Inclusion p. 41 of this report.
	401-2	Full-time benefits not provided to temporary/part-time employees	These benefits are provided to employees across all property subsectors of operation, including New York, NY; Chicago, IL; San Francisco, CA; and other regions Vornado operates in. Benefits listed are full-time employees, and certain benefits are extended to part-time and temporary employees. Human Capital Management, p. 23. <ul style="list-style-type: none"> <li>• Medical and prescription plan at low employee cost</li> <li>• Dental plan at no employee cost</li> <li>• Tax deferred 401(k) plan</li> <li>• Flexible spending accounts for medical and dependant care</li> <li>• Life insurance at two times an employee's annual compensation and at no employee cost</li> <li>• Paid time off for vacations, holidays, and personal days</li> <li>• Employee Assistance Program</li> <li>• Tuition reimbursement and professional reimbursement development plan</li> </ul>
GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee	BMS & Green Cleaning, pp. 31 of this report. Training information is not currently tracked to report on average hours of training per employee reported by gender and by employee category (level), report.
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	Tenant Engagement, p. 19, Diversity, Equity, and Inclusion p. 41 of this report. As of December 31, 2022, our Board consisted of 30% women, 0% under age 30, 10% between ages 30 and 50, and 90% over 50 years old, and was composed of 30% minorities.
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs.	Our locations of operations are defined in GRI 2-6, and include New York, Chicago, San Francisco, and Annapolis, Maryland. We have implemented local community engagement, impact assessments or programs across 95% of our total operations. We calculate this percentage by identifying regional locations that participate in community events, sum each region's total and apply as the numerator, and total portfolio's square footage as of year end December 31, 2022. Vornado Volunteers, pp. 26-27 of this report.
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	BMS & Green Cleaning, p. 31 of this report. We consider our properties and maintenance of the buildings to be our services provided to customers. The products purchased to maintain and clean the properties are purchased by Building Maintenance (BMS). The responsible purchasing agent, BMS, reviews monthly supply reports from all vendors and identifies areas of improvement to address health and safety across products' life cycle. Therefore, products purchased by our janitorial company are evaluated monthly for health and safety impacts. 71% of the annual purchasing adheres to third-party certifications for janitorial supplies, while the remainder is evaluated for product replacement and improvement when feasible. The applicable third-party certifications are as follows: ECOLOGO, Green Seal, EPA Safer Choice Standard, USDA Certified Biobased, for Environment, and EPA's Comprehensive Procurement Guidelines.

**\*Reporting boundaries:**

Intensities: 2022 intensities were calculated by dividing the energy consumption, water consumption, and GHG emissions from the properties owned by Vornado at December 31, 2022, by the total square footage of that same list of properties.

Energy and Water: 100% of all in-service square footage, energy and water as of 12/31/2022, not listed as under development, with more than 20% VNO ownership. Q4 2022 energy and water data was estimated at properties where actual consumption data was not available in time for the publication of this report. Due to observed fluctuations related to remote working, followed by a

partial return to work in 2021-2022, energy and water were estimated by applying the weighted average monthly consumption variance from prior year beginning with January 2021 through the most recent available month of actual data. Energy consumption was also adjusted for weather and leased occupancy normalization. Approximately 8% of total energy consumption and 1% of total water consumption was estimated. Four properties have full-year estimations for energy and water. The estimation consumption for these properties account for an additional 3% of total energy consumption and 3% of total water consumption.

Waste: Approximately 80% of all in-service square footage as of 12/31/2022, not listed as under development, with more than 20% VNO ownership. Waste generation in 2021 and 2022 represented by actual data from waste haulers. Excluded from waste data are properties where waste hauling is not directly managed by Vornado, such as high street retail and residential properties. Construction & Demolition (C&D) waste is excluded from the reporting but considered extraordinary waste, which is in line with industry standards.

**Independent Accountant's Review Report****Board of Trustees  
Vornado Realty Trust****Deloitte & Touche LLP**  
30 Rockefeller Plaza 41<sup>st</sup> Floor  
New York, NY 10012  
USATel: +1 212 492 4000  
Fax: +1 212 489 1687  
www.deloitte.com

We have reviewed management of Vornado Realty Trust's (the "Company") assertion that the disclosures in the Global Reporting Initiative (GRI) Index included within the accompanying Environmental, Social & Governance 2022 Report of Vornado Realty Trust as of and for the year ended December 31, 2022 are presented in accordance with the Global Reporting Initiative Sustainability Reporting Standards (the "GRI Standards"). The Company's management is responsible for its assertion. Our responsibility is to express a conclusion on management's assertion based on our review.

Our review was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants (AICPA) in AT-C Section 105, *Concepts Common to All Attestation Engagements*, and AT-C Section 210, *Review Engagements*. Those standards require that we plan and perform the review to obtain limited assurance about whether any material modifications should be made to management's assertion in order for it to be fairly stated. The procedures performed in a review vary in nature and timing from, and are substantially less in extent than, an examination, the objective of which is to obtain reasonable assurance about whether management's assertion is fairly stated, in all material respects, in order to express an opinion. Accordingly, we do not express such an opinion. Because of the limited nature of the engagement, the level of assurance obtained in a review is substantially lower than the assurance that would have been obtained had an examination been performed. We believe that the review evidence obtained is sufficient and appropriate to provide a reasonable basis for our conclusion.

We are required to be independent and to meet our other ethical responsibilities in accordance with the *Code of Professional Conduct* issued by the AICPA. We applied the *Statements on Quality Control Standards* established by the AICPA and, accordingly, maintain a comprehensive system of quality control.

The procedures we performed were based on our professional judgment. In performing our review, we performed analytical procedures and inquiries. For a selection of the disclosures in the GRI Index, we performed tests of mathematical accuracy of computations, compared the disclosures to underlying records, or observed the data collection process.

The preparation of the disclosures in the GRI Index included within the Environmental, Social & Governance 2022 Report requires management to interpret the criteria, make determinations as to the relevancy of information to be included, and make estimates and assumptions that affect the reported information. Measurement of certain disclosures in the GRI Index includes estimates and assumptions that are subject to substantial inherent measurement uncertainty resulting, for example, from the accuracy and precision of greenhouse gas emission conversion factors, or estimation methodologies used by management. Obtaining sufficient, appropriate review evidence to support our conclusion does not reduce the inherent uncertainty in the disclosures in the GRI Index. The selection by management of different but acceptable measurement methods, input data, or assumptions, may have resulted in materially different amounts or disclosures being reported.

Our review was limited to the disclosures in the GRI Index. All other information presented within the Environmental, Social & Governance 2022 Report including information relating to forward looking statements, targets, goals, progress against goals, and linked information, were not subject to our review and, accordingly, we do not express a conclusion or any form of assurance on such information.

Based on our review, we are not aware of any material modifications that should be made to management of Vornado Realty Trust's assertion that the disclosures in the GRI Index included within the accompanying Environmental, Social & Governance 2022 Report of the Company as of and for the year ended December 31, 2022 are presented in accordance with the GRI Standards, in order for it to be fairly stated.

April 7, 2023

Management of Vornado Realty Trust is responsible for the completeness, accuracy, and validity of the metrics in the SASB Index included within the Appendix of the Environmental, Social, & Governance 2022 Report of Vornado Realty Trust as of and for the year ended December 31, 2022. Management is responsible for the collection, quantification, and presentation of the metrics and for the selection of the criteria, which management believes provide an objective basis for measuring and reporting on the metrics. Measurement of certain metrics includes estimates and assumptions that are subject to substantial inherent measurement uncertainty resulting, for example, from the accuracy and precision of conversion factors or estimation methodologies used by management. The selection by management of different but acceptable measurement methods, input data, or assumptions may have resulted in materially different amounts or metrics being reported. Management asserts that the metrics in the SASB

Index included within Appendix of the Environmental, Social, & Governance 2022 Report of Vornado Realty Trust and for the year ended December 31, 2022 are presented in accordance with the Sustainability Accounting Standards Board (SASB) Real Estate Sustainability Accounting Standard.

Number of assets includes the number of distinct building assets. In the SASB disclosures, each asset is counted as a single asset, even in cases where portions of an asset are classified into separate subsectors that are all within the FTSE NAREIT Classification Structure. The SASB disclosure instead categorizes assets into the four categories of "New York," "theMART," "555 California," and "Other," which aligns with the entity's financial reporting. All disclosures are representative of the Whole building approach defined on page 51.

## Activity Metrics

Code	Activity Metric	Total	New York	THE MART	555 California	Other	Unit of Measure
IF-RE-000.A <sup>1</sup>	Number of assets, by property subsector	83	70	3	3	7	Number
IF-RE-000.B <sup>2</sup>	Leasable floor area, by property subsector	33,827,000	26,685,000	3,691,000	1,819,000	1,632,000	Square Feet
IF-RE-000.C <sup>3</sup>	Percentage of Indirectly managed assets, by property subsector	0.00%	0.00%	0.00%	0.00%	0.00%	Percentage (%) by Floor Area
IF-RE-000.D <sup>4</sup>	Average occupancy rate, by property subsector	91.75%	92.47%	86.60%	94.57%	88.46%	Percentage (%)

<sup>1</sup>Number of assets includes the number of distinct building assets. In this SASB disclosure, each asset is counted as a single asset, even in cases where portions of an asset are classified into separate subsectors that are aligned with the FTSE NAREIT Classification Structure. This SASB disclosure categorizes assets into the four categories of "New York," "THE MART," "555 California," and "Other," which aligns with the entity's financial reporting.

<sup>2</sup>Leasable floor area is disclosed separately into the four categories of "New York," "THE MART," "555 California," and "Other," which aligns with the entity's financial reporting.

<sup>3</sup>The definition of "indirectly managed assets" is solely based on the landlord/tenant relationship and is aligned with the 2023 GRESB Real Estate Assessment Reference Guide: "Where a single tenant has the sole authority to introduce and implement operating and/or environmental policies and the tenant should be assumed to have operational control, the asset should be considered to be an Indirectly Managed Asset." In 2020, this concept was replaced by "Landlord Controlled" and "Tenant Controlled" areas, where the same notion of operational control applies to differentiate one from the other. However, while the rationale remains unchanged compared to previous years, if both the landlord and tenant have the authority to introduce and implement any or all of the policies mentioned above, the area should be reported as landlord controlled. Percentage of indirectly managed assets is disclosed separately into the four categories of "New York," "THE MART," "555 California," and "Other," which aligns with the entity's financial reporting.

<sup>4</sup>Average occupancy rate is an average of the reported occupancy for each of the four quarters in the reporting period, and is disclosed separately for each portion of the entity's portfolio into the four categories of "New York," "THE MART," "555 California," and "Other," which aligns with the entity's financial reporting.

Energy Management

Code	Accounting Metric	Total	New York	THE MART	555 California	Other	Unit of Measure
IF-RE-130a.1	Energy consumption data coverage as a percentage of floor area, by property subsector.	100%	100%	100%	100%	100%	Percentage (%) by floor area
IF-RE-130a.2	Total energy consumed by portfolio area with data coverage.	3,019,084	2,467,566	230,916	145,973	174,629	Gigajoules (GJ)
IF-RE-130a.2	Percentage of total energy that is grid electricity, by property subsector.	51.88%	51.36%	44.11%	57.62%	64.74%	Percentage (%)
IF-RE-130a.2	Percentage of total energy that is renewable, by property subsector.	32.15%	33.60%	40.06%	33.59%	0.00%	Percentage (%)
IF-RE-130a.3 <sup>3</sup>	Like-for-like change in energy consumption of portfolio area with data coverage, by property subsector (see p. 53 for normalization note).	-5.06%	-4.55%	-2.28%	-11.02%	-10.22%	Percentage (%)
IF-RE-130a.4	Percentage of eligible portfolio that has obtained an energy rating.	99.94%	100.00%	99.49%	100.00%	100.00%	Percentage (%) by floor area
IF-RE-130a.4	Percentage of eligible portfolio that is certified to ENERGY STAR, by property subsector.	15.77%	18.95%	0.00%	0.00%	17.03%	Percentage (%) by floor area
IF-RE-130a.5	Description of how building energy management considerations are integrated into property investment analysis and operational strategy.						

Vornado's Scope 1 and Scope 2 emissions come entirely from the operation of our buildings, including our submeter tenants. Energy costs are often among the largest controllable expenses on a property's balance sheet. For these reasons, we consider energy management to be an environmental and fiscal priority.

In 2019, Vornado committed to making its buildings carbon neutral by the year 2030. This plan, known as Vision 2030, will combine various methods to reduce or offset all Scope 1 and Scope 2 emissions. Energy efficiency is the prioritized component of Vision 2030 with a goal of reducing 50% below a 2009 base year by the year 2030. Further information on this plan can be found in the Vision 2030 section of this report. Our energy reduction measured 28% at the end of 2022. The COVID pandemic resulted in accelerated energy reductions from our buildings starting in 2020 that are due to our office tenants working from home, and some interruptions to our retail tenants' businesses. As business activity returns to our buildings it is likely that progress towards our energy efficiency will first retract before advancing again. We will continue to measure our energy consumption and evaluate our targets and goals.

We incorporate energy management into our acquisition due diligence process across all our property subsectors. We tour properties and review capital and operating budgets, as well as utility bills, to determine opportunities to reduce energy consumption and demand. We assess energy performance through quantifiable methods of consumption and cost on a per square foot basis, and we consider energy labels and benchmark values provided through ENERGY STAR. We gain an understanding of the building's energy inventory and current energy initiatives implemented at the property.

Climate risk and resilience are important lenses through which we view all development projects at any scale. Our strategy focuses on sustainable development inclusive of carbon neutrality, operational efficiencies, human health, minimizing material resources, and climate change adaptation. More information on sustainable development can be found on pages 13 and 16 of this report.

Our building managers and operators in all our property subsectors are trained and supported by our centralized energy management team to employ sound and responsible energy management across the portfolio. Our engineers perform in-house technical assessments, akin to a walkthrough energy audit, per guidance from the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), as part of their ongoing preventative maintenance. We employ third party engineering firms to complete technical assessments such as ASHRAE Level II Energy Audits and Retro-commissioning at all NYC, Chicago, and San Francisco properties over 50,000 square feet, and aim to update these assessments at least once every five years. In our NYC market, the Audits and Retro-commissioning reports are part of Local Law 87 and are subject to City review to ensure that all landlord-controlled inventory is included in the scope, all low- and no-cost recommended repairs are included, and that the assessments were completed by licensed professionals. Such technical assessments are the basis for our energy efficiency capital work. Vornado completes or seriously considers all low- and no-cost repairs and recommended measures, and considers more capital-intensive measures, in each annual budget cycle, if they help us to achieve our carbon neutrality goals or coincide with a building need to replace equipment that has reached the end of its useful life. Some of the most relevant measures implemented that further our energy efficiency goal are Building Management Systems, high-efficiency equipment, engagement and smart technologies. Vornado uses Environmental Management Systems (EMS), which are aligned to ISO 14001 standards, and Data Management Systems as part of our strategy.

We uphold energy ratings, benchmarking, and certifications as an important recognition tool and performance indicator. We understand and prefer buildings that have earned green building certifications and demonstrate competitive energy ratings such as a high ENERGY STAR. We believe the benefits of such ratings and certifications outweigh the costs or resources associated with obtaining them. Because our core maintenance and operation of existing assets, we believe that certifications based on ongoing performance are more relevant to us than performance-modeled design objectives. These efforts are further demonstrated through our commitment of 100% LEED certification for office properties by 2024 with marked progress 95% towards that achievement, and recognition of being a ENERGY STAR Partner of the Year 2013, with the prestigious Sustained Excellence designation for seven years.

Vornado regularly evaluates opportunities to invest in renewable energy. We believe that onsite renewable energy is the most impactful carbon emissions, but we are limited in this opportunity by the lack of physical space and high construction costs that are typical for the markets where we are located. The local grids in which we operate have decarbonization goals that will, in turn, enable our electricity operations to be carbon free. For example, New York State has committed to have its grid supplied electricity be 70% carbon free by 2024. As a supplemental strategy until grids meet their goals, off-site renewable energy can provide a virtual carbon offset to our Scope 2 emissions. Vornado procures Renewable Energy Credits (RECs) to document our commitment to renewable energy and the environment hydro energy facilities located in the State of New York. With an annualized balance of over 200,000 megawatt hours, we lead by example largest customers to invest in home-grown renewable energy in New York. In 2022, we transitioned our San Francisco buildings to 100% energy by opting into a supplier program that allows Vornado to purchase all of the buildings' electricity from in-state renewable resource selected these products as a localized solution that supports investment in both NY and CA State renewable infrastructure, furthering site increasing and providing clean energy to all communities, and in both instances, before our own. In Chicago, IL, where our largest asset also procured RECs for 100% of its electricity load. As our electricity consumption decreases through efficiency efforts, we anticipate that will over time become cleaner, and our procurement of RECs will decrease. However, it is imperative that we continue to procure offsets through RECs or if onsite renewables are not feasible, with eGRID factors changing in recent years it is clear that locational based emissions intensify before renewable sources are added to respective regional electricity grids. In 2022, our renewable energy purchases were 23.33.60% of our New York energy, 13,620 MWh or 33.59% of our California energy, and 25,697 MWh or 40.06% of our MART energy, or company's total energy consumption. We also plan to purchase carbon offsets between 2025 and 2030 to reduce our Scope 1 emission Scope 2 emissions generated from district steam, as well as support meeting our Local Law 97 thresholds in NYC. This will be the balance that has not been reduced by energy efficiency, energy demand optimization, or renewable energy procurement. Carbon offsets, like RECs, should bear localized benefit and wherever possible should align with those which are defined in the Climate Leadership and Community Reinvestment Act (CLCPA) passed in New York State in 2019.

<sup>1</sup> Any information relating to forward-looking statements, goals and progress against goals, was not subject to Deloitte & Touche LLP's examination and, accordingly, Deloitte & Touche LLP does not express a conclusion or any form of assurance on such information.

<sup>2</sup> S.3 Whole Building is defined as "Energy used by tenants and Base Building services to lettable/leasable and common spaces. This should include all energy supplied to the building for the operation of the building and the tenant space."

<sup>3</sup> While considering our like-for-like boundary for SASB reporting, we include properties that are in-service for the entire current and prior year, consistent with our financial statement approach to like-for-like. We omit energy from buildings that are out of service or under development during any part of the current or prior year, as well as any building with ownership less than 20% interest. Percentage changes without applying normalization adjustments are 5.69% at New York, 3.97% at The Mart, 1.99% at 555 California, -0.10% at Other, or 4.98% for our total portfolio.



Water Management

Code	Accounting Metric	Total		New York		THE MART		555 California		Other		Unit of Measure
IF-RE-140a.1	Water withdrawal data coverage as a percentage of total floor area, by property subsector.	100%		100%		100%		100%		100%		Percentage (%) by fl
IF-RE-140a.1	Percentage of floor area in regions with High or Extremely High Baseline Water Stress, each by property subsector.	6.10%		5.15%		0.00%		0.00%		42.28%		Percentage (%) by fl
IF-RE-140a.2	Total water withdrawn in 2022, (1) by portfolio area with data coverage and (2) percentage in regions with High or Extremely High Baseline Water Stress, each by property subsector (see p. 53 for normalization note).	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	Thousand Cubic Me
		2,218.52	12.40%	1,978.80	10.78%	61.33	0%	45.66	0%	132.73	46.48%	Percentage (%)
IF-RE-140a.3 <sup>3</sup>	Like-for-like change in water withdrawn for portfolio area with data coverage, by property subsector.	-0.10%		0.17%		-5.54%		8.32%		-3.53%		Percentage (%)
IF-RE-140a.4 Description of water management risks and discussion of strategies and practices to mitigate those risks.												

Vornado's portfolio is concentrated in the dense urban cores of New York City, Chicago, and San Francisco. As such, Vornado's primary water consumption includes potable water consumption for drinking across our portfolio; plumbing use; water used for specific business purposes, such as food service or showers in exercise facilities; and water use attributed to Heating, Ventilation, and Air-Conditioning (HVAC). We do not consider water consumption used for agricultural purposes to be significant and therefore do not include this consumption in our reporting boundary. Our sources for water are exclusively municipal water systems, and our discharge destinations are exclusively municipal sewer systems.

We face water-related environmental constraints and risks that are characteristic of urban places, and use publicly available maps, resources, and tools to gain insights into the risks inherent to our properties, including FEMA's Flood Map Service Center and WRIs Aqueduct Water Risk Atlas. Approximately 6% of our total properties operate in some regions with high or extremely high baseline water stress. As referenced in the SASB Real Estate Sustainability Accounting Standard, the World Resource Institute categorizes high and extremely high stress based on the level of available water withdrawn annually to support agricultural, domestic, and industrial users. Our New York and San Francisco regions experience medium to high levels of interannual variability. Our San Francisco locations are subject to medium to high seasonal variability.

We also face water-related regulatory constraints. Our water costs increase regularly to pay for developing and maintaining the infrastructure that supports our municipal water and sewer systems. We incur sewer costs to pay for the treatment of water that is discharged from our buildings. We incur additional costs to reduce the temperature of the water we discharge into the sewer system. We may incur additional costs to comply with future stormwater management regulation in our regions. We expect costs for water to continue to rise into the foreseeable future, which will increase our operating costs.

Our primary method of mitigating water risk is to reduce our water withdrawals and consumption. We reduce our water consumption through retrofitting our plumbing fixtures, modernizing our HVAC systems, and refining our cleaning policies. Our restroom plumbing fixtures are retrofit as part of renovation efforts, which occur annually as part of our recurring capital improvement process. Our HVAC water efficiency program includes water reduction and

water re-use efforts such as re-directing excess steam condensate to our cooling towers, to reduce sewer discharge; retrofitting our cool with more efficient mechanical systems; and ensuring our chiller systems are serviced and maintained on an ongoing basis. Our janitorial cleans our buildings with water conservation efforts, including gray water re-use for washing and cleaning, and purchase and use of water equipment. In new construction or redevelopment projects, we also mitigate our stormwater runoff with stormwater retention tanks that re water for irrigation and cooling tower use, and green roofs and terraces to capture stormwater. In 2020, Vornado set a corporate goal to water consumption 10% below a 2019 base year by 2030, to be achieved through advancing these efficiency efforts. For year ending 2020, we measured a 30% reduction below 2019 base year. The COVID pandemic resulted in accelerated water reductions from our buildings that are due in part to our office tenants working from home, and some interruptions to our retail tenants' businesses. As business activity buildings it is apparent that water progress towards our goal will first retract before advancing again. We will continue to measure our wat and evaluate our targets and goals.

Our primary risk of achieving our water consumption reduction target is our lack of control over end users. Our tenants are the main drive consumption. Increases in occupancy, operating hours, or densification of existing spaces will cause consumption to increase. Diversity o such as retail uses in food service or health and exercise facilities – could also cause an increase in consumption, despite our efforts to r consumption.

We collaborate with our water and sewer authorities, city governments, and community boards when issues arise in water management c sewer infrastructure concerns. We observe that our water conservation efforts have achieved tradeoffs in energy reduction but have not these tradeoffs. We continue to consider these tradeoffs and evaluate additional lifecycle impacts and tradeoffs, such as GHG emissions potential future opportunities to be realized.

<sup>1</sup> 5.1 Base Building is defined as "Energy consumed in supplying central building services to lettable/leasable areas and common areas."

<sup>2</sup> 5.2 Tenant Space is defined as "Lettable floor area (both vacant and let/leased areas) that is or can be occupied by tenants."

<sup>3</sup> 5.3 Whole Building is defined as "Energy used by tenants and Base Building services to lettable/leasable and common spaces. This should include all energy supplied to the building for the operation of the building and the tenant space."

<sup>4</sup> No divergences between the scope of assets and/or floor area used in financial reporting and its like-for-like change in water withdrawn.

<sup>5</sup> While considering our like-for-like boundary for SASB reporting, we include properties that are in-service for the entire current and prior year, consistent with our financial statement approach to like-for-like. We omit energy from buildings that are out of service or under development during any part of the current or prior year, as well as any building with ownership less than 20% interest. Percentage changes without applying normalization adjustments are 12.39% at New York, 3.36% at The Mart, 30.77% at 555 California, 4.51% at Other, or 11.92% for our total portfolio.

Management of Tenant Sustainability Impacts

Code	Accounting Metric	Total		New York		THE MART		555 California		Other		Unit of Measure
		(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	
IF-RE-410a.1	Percentage of new leases that contain a cost recovery clause for resource efficiency-related capital improvements and associated leased floor area, by property subsector.	56.37%	898	63.04%	744	59.48%	84	28.61%	63	12.30%	6	Percentage (%) by thousands of SF
IF-RE-410a.2	Percentage of tenants that are separately metered or submetered for grid electricity consumption, by property subsector.	95.70%		97.06%		100%		98.78%		60.19%		Percentage (%) by thousands of SF
IF-RE-410a.2	Percentage of tenants that are separately metered or submetered for water withdrawals, by property subsector.	16.76%		17.67%		3.67%		0.00%		50.12%		Percentage (%) by thousands of SF
IF-RE-410a.3	Discussion of approach to measuring, incentivizing, and improving sustainability impacts of tenants.											

At Vornado, tenants consume the majority of the electricity consumed in our properties, as is evidenced by the submetered or separately metered electricity we record throughout our portfolio. Because so much of our energy consumption is under tenant control, it is essential to engage with them as a partner in reducing our carbon footprint. There is clear value to be realized in communicating to our tenants their energy and water consumption, when known, and to encourage their participation in best practices in resource conservation.

While Vornado does not explicitly endorse third-party initiatives concerning green leases, our standard lease agreement includes several components that encourage tenant energy conservation. Across our office portfolio, we require submetered or separately metered electricity consumption for all tenants over 5,000 square feet and promote submeters in smaller spaces. We also require submetered or separately metered water consumption for all tenants whose predicted use is expected to exceed normal business practice. The submetered arrangement enables Vornado to share energy and water consumption with our tenants on a monthly basis through the generation of the submeter bill. Tenants are billed transparently based on their actual and exclusive consumption as recorded on the submeter. Included on the submeter bill are Vornado's energy reduction targets and links to Vornado's corporate sustainability page, where our broader strategy on energy and water management is found. Elsewhere in the lease, we include a clause to recover capital costs that reduce operating expenses – whether utility costs or another cost reduction benefit – and we may amortize that recovery over the useful life of the project. Because we have been applying this practice for several years and now have an extensive coverage of this clause across our entire leased portfolio, we have chosen to also report on percentage of total leases containing this cost recovery clause, as opposed to new leases only. In 2022, leases containing a cost recovery clause for energy efficiency improvements are 60.88% of our New York leases, 62.89% of THE MART leases, 87.47% of our California leases, and 1.37% of our Other leases, or 59.66% of our company's total leases in place.

Where there is an economic or environmental benefit, our company will prioritize sustainability requirements in a tenant fit-out. Our revised tenant fit-out guidelines include enhanced requirements for energy efficient lighting and controls and HVAC equipment and water efficient plumbing fixtures. These high-performance design requirements are also included in our rules and regulations which are also referenced in the lease. We believe that our lease fosters a sustainably designed tenant space, and an ongoing environment that encourages the tenant to both to actively manage and measure their own carbon footprint.

Beyond the lease, we distinguish ourselves with one-on-one and group, in-person and virtual engagement with our tenants on sustainability. We hosted one virtual sustainability roundtable, one in-person roundtable, and other virtual town halls concentrated on waste diversion and energy and water. During these roundtables we discussed broader corporate ESG trends and regulatory updates, in addition to best practices. We collect information from our tenants that contribute to mandatory energy rating schemes, such as the ENERGY STAR Portfolio Manager profiles we submit for compliance with local laws in New York, San Francisco, and Chicago. We encourage tenants to consider ENERGY STAR Tenant Space recognition, and level 3 STAR Treasure Hunt programs to identify low- and no-cost measures to reduce consumption. We meet with tenants onsite to survey opportunities for energy and water. We train our tenants on recycling programs. We host energy reduction competitions with tenants to promote awareness and their participation. Our tenants have also expressed support for renewable energy procurement, which we completed on their behalf in New York, San Francisco, and Chicago properties where tenants are submetered and Vornado has purchased Renewable Energy Certificates.

The COVID pandemic continued to pose challenges, however, it also brought new opportunities to our tenant engagement. Vornado is committed to providing a comfortable, efficient, and technologically advanced work environment for each of its tenants, constantly striving to add value through responsive services and programs. To that end, Vornado developed an App (LiveWorkDo) for all of our tenants that allows building announcements, building events and information, provides benefits and promotions to tenants. In 2022, Vornado also updated the entire Sustainability of the App and tenant portal to provide guidance to all of our tenants about our sustainability initiatives in each building. The Sustainability of the App has been incorporated into each building's section of the App and explains to the user our goals, our progress towards our ESG goals, and link information, as well as provides detailed guidance on how to become more involved in Vornado's sustainability programming, including EH Week for participation and engagement. Our App usage has increased substantially with the return-to-work and ability to enter buildings and functionality provided. This in turn has increased engagement with our tenants who now know where to look for information on events, initiatives, and contacts. We also publicize our events, challenges, and initiatives through the Captivate elevator screens in each building.

We hold ourselves accountable and measure the success of our engagement. Success is measured in the observed reduction of energy and water in tenant spaces, the integration of organics throughout our portfolio, the waste diversion rate, and the square footage of space that our tenants have engaged through our engagement program.

Climate Change Adaptation

Code	Accounting Metric	Total	New York	THE MART	555 California	Other	Unit of Measure
IF-RE-450a.1	Area of properties located in FEMA Special Flood Hazard Areas or foreign equivalent, by property subsector.	1,518,000	828,000	0	0	690,000	Square Feet

IF-RE-450a.2 Description of climate change risk exposure analysis, degree of systematic portfolio exposure, and strategies for mitigating risks.

We identify and assess our exposure to climate change risk based on the 1.5° and business-as-usual scenarios discussed in the October 2018 Special Report by the Intergovernmental Panel on Climate Change (IPCC). We find these scenarios to be relevant to our properties for two reasons. The first is that they provide potential future states on the physical risks each scenario presents between the present time and the year 2100. The second is that they provide a shorter-term view of transitional risks related to climate-related policy change that our properties could be subject to. Each of our principal markets of New York, Chicago and San Francisco have existing or pending legislation that would limit carbon emissions to align with a 1.5° scenario. We consider the costs for compliance with such legislation to be a financial impact attributable to the transition to a lower-carbon environment. The risks and opportunities for Vornado do not differ substantially across subsectors and regions, and our approach described below takes all risks and opportunities in each subsector and region into consideration.

Our buildings are located in regions that have had recent history of physical risks, such as extreme weather events, including but not limited to hurricanes and superstorms, nor'easters and ice storms, tornadoes, wildfires, temperature extremes, and heavy precipitation events. Under the business-as-usual scenario, there may be an increase in the frequency and severity of these events between now and 2100. Such events may impact our buildings individually, depending on a building's specific use, design, and location characteristics, or regionally, depending on the magnitude of the event. We are also aware that while less than 5% of our property square footage is in areas designated as flood zones by FEMA, our coastal locations are susceptible to sea level rise (SLR). Various global warming scenarios could bring about differing amounts of SLR between now and the year 2100. Financial impacts under various warming scenarios include but are not limited to: increases in capital and operating costs, increases in insurance premiums, increases in energy costs, and increases in overall utility costs.

Our properties are located in urban areas, which means the vitality of our properties is reliant on sound transportation and utility infrastructure. If that infrastructure is compromised in any way by an extreme weather event, such a compromise could have an adverse impact on our local economies and populations, as well as on our tenants' ability to do business in our buildings. This risk is not unique to Vornado but is endemic to our regions.

Our strategies for mitigating physical risks require a combination of adaptive and preventative measures with a proactive reduction of carbon emissions. Adaptive and preventative measures are executed at both the property level and regional level. We adapt our properties to be resilient against the impact of climate change, with details of our resilience measures found in the Resilience and Adaptation section of this report. We train our operators in disaster risk management and emergency operating procedures. At the regional level, our cities and utilities adapt by creating programs that improve resilience against climate-related impacts. Examples of such programs include New York City's AdaptNYC plan and Consolidated Edison's Storm Hardening Protection Plan in New York; Resilient Chicago and ComEd's Resilient Electric Grid system in Chicago; and Resilient SF and PG&E's Company Emergency Response Plan in San Francisco.

We have disclosed our Scope 3 carbon emissions that are attributed to certain fuel and energy related activities that are not included in Scope 1 or 2. These emissions are from energy that is delivered directly from the utilities to our tenants and consumed by our tenants. We plan to expand our

inventory of Scope 3 emissions to include additional categories relevant to our business, in preparation for anticipated future regulatory requirements and a net zero goal.

All carbon emission reduction strategies, whether property-specific or regional, present different risks and opportunities. Risks include our investment in new technologies; costs to transition to lower emissions technology; achievement of regional utilities' decarbonization; impact on GHG emissions; reputational loss; and uncertainty in market signals such as utility costs or carbon taxes. Financial impacts of such risk include increased capital and operating costs, increased or unexpected shifts in energy costs, and decreased asset value. Opportunities, on the other hand, include reduction of energy and resource consumption; use of public-sector incentives, such as utility rebates; diversification of energy mix including renewables; adaptation of new technologies; and access to new capital. Financial impacts of such opportunities include reduced and/or operating costs; favorable ROI analysis; increased value of fixed assets; reduced exposure to fossil fuel price increases; reduction costs for our tenants; various benefits to workforce management and planning; lower cost of capital; and ability to take advantage of incentive and tax incentive programs. Additional opportunities also include the reduction or elimination of burden from emerging carbon pricing or mechanisms, as well as the reduction or avoidance of carbon emissions-related penalties.

All three of our regions also have emissions-reporting obligations, which require us to publicly disclose our properties' carbon emissions to STAR Portfolio Manager. We consider this requirement as an opportunity to measure the carbon emissions from our properties and manage reduction of those emissions on an ongoing basis. These programs combine strategies of absolute energy reduction, through efficiency, as well as fossil fuel intensity reduction of utility-delivered energy. We discuss the intent and requirements of these programs with our property owners and engineers, as well as our tenants. They provide important framework to the GHG reduction goals we set with our properties.

In 2019, New York City passed the Climate Mobilization Act (CMA), which contained several local laws to transition New York City to reduce emissions 40 percent by the year 2030 and 80 percent by the year 2050, below 2005 levels. Included in the CMA was Local Law 97, which carbon intensity for buildings on a per square foot basis and assigns limits to intensity beginning in 2024, with reporting in 2025. The law imposes penalties of \$268 per ton of carbon calculated in excess of the limits. We are planning energy efficiency strategies to avoid penalties on properties and consider the cost for energy efficiency to be part of our transition costs to a low-carbon environment. We also consider the value stack of energy efficiency projects, and the penalty amount of \$268 per ton of carbon to be considered when making capital decisions.

Vornado Realty Trust has signed on as a supporter of the framework recommended by The Financial Stability Board's Task Force on Climate-Related Financial Disclosures (TCFD). We believe this framework will guide the real estate industry towards well-informed disclosure of climate change opportunities. As our internal and external discussions on climate risk and disclosure evolve, we plan to provide expanded public disclosures with regulatory requirements.

<sup>1</sup>Any information relating to forward-looking statements, goals and progress against goals, was not subject to Deloitte & Touche LLP's examination and, accordingly, Deloitte & Touche LLP does not express a conclusion or any form of assurance on such information.

Normalization Note:

2021 and 2022 like-for-like energy consumption data has been normalized to adjust for fluctuations in weather and occupancy, while water consumption data has been normalized to adjust for fluctuations in occupancy only. Weather normalization uses inputs of total degree days (TDD), a fixed portion of energy consumption, known as a Base Load, and a variable portion of energy consumption, known as a Seasonal Load. Occupancy is normalized based on the following methodology:

1) An Occupancy Normalization Adjustment was calculated as most of Vornado's large commercial office buildings have ingested full-year physical occupancy counts in both 2021 and 2022. Therefore, we are using the portfolio's average monthly physical occupancy percentage changes on an

annual basis year over year to normalize for occupancy and applying that methodology to the buildings that do not have occupancy sensor data. For buildings with sensors, their building-specific occupancy percentage change will be applied. For buildings that management knows did not have occupancy changes, a note will be added and the occupancy normalization calculation will not be applied.

2) Weather Normalized Energy's Seasonal Load is subject to Occupancy Normalization Adjustment based on field research that demonstrates the seasonal load is occupancy dependent.

**Independent Accountant's Report****Board of Trustees  
Vornado Realty Trust****Deloitte & Touche LLP**  
30 Rockefeller Plaza 41<sup>st</sup> Floor  
New York, NY 10012  
USATel: +1 212 492 4000  
Fax: +1 212 489 1687  
www.deloitte.com

We have examined management of Vornado Realty Trust's (the "Company") assertion that the metrics in the Sustainability Accounting Standards Board (SASB) Index included within the Appendix of the accompanying Environmental, Social & Governance 2022 Report of Vornado Realty Trust as of and for the year ended December 31, 2022 are presented in accordance with the Sustainability Accounting Standards Board Real Estate Sustainability Accounting Standard.

The Company's management is responsible for its assertion. Our responsibility is to express an opinion on management's assertion based on our examination.

Our examination was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants (AICPA) in AT-C Section 105, *Concepts Common to All Attestation Engagements*, and AT-C Section 205, *Examination Engagements*. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether management's assertion is fairly stated, in all material respects. An examination involves performing procedures to obtain evidence about management's assertion. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risks of material misstatement of management's assertion, whether due to fraud or error. We believe that the evidence obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

We are required to be independent and to meet our other ethical responsibilities in accordance with the *Code of Professional Conduct* issued by the AICPA. We applied the *Statements on Quality Control Standards* established by the AICPA and, accordingly, maintain a comprehensive system of quality control.

The preparation of the SASB Index requires management to interpret the criteria, make determinations as to the relevancy of information to be included, and make estimates and assumptions that affect reported information. Measurement of certain metrics includes estimates and assumptions that are subject to substantial inherent measurement uncertainty resulting, for example, from the accuracy and precision of conversion factors or estimation methodologies used by management. Obtaining sufficient, appropriate evidence to support our opinion does not reduce the inherent uncertainty in the metrics. The selection by management of different but acceptable measurement methods, input data, or assumptions may have resulted in materially different amounts or metrics being reported.

Our examination was limited to the SASB Index as of and for the year ended December 31, 2022. All other information presented within the Environmental, Social & Governance 2022 Report, including information relating to forward looking statements, goals, and progress against goals and denoted by an asterisk (\*) in the Appendix of the Environmental, Social & Governance 2022 Report was not subject to our examination and, accordingly, we do not express an opinion or any form of assurance on such information.

In our opinion, management's assertion that the metrics in the SASB Index included within the Appendix of the accompanying Environmental, Social & Governance 2022 Report as of and for the year ended December 31, 2022 are presented in accordance with SASB Real Estate Sustainability Accounting Standard is fairly stated, in all material respects.

April 7, 2023



Vornado supports the United Nations Sustainable Development Goals (UNSDGs) as a global framework to achieve a more sustainable future for the planet, and improve quality of life for all. As a corporate citizen we uphold and contribute to each of the 17 goals through the environmentally and socially responsible manner in which we run our

business and our properties. Below is a selection of metrics and programs where Vornado responds direct identified through the UNSDG 2030 Agenda for Sustainable Development. We will expand upon these dis when new metrics and programs develop within the recommended SDG framework.



UN Goal Target	UN Goal Indicator	VNO Response
3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.	3.5.1 Coverage of treatment interventions (pharmacological, psychosocial, and rehabilitation and aftercare services) for substance abuse disorders	Vornado's Employee Assistance Program (EAP) and other wellness programs, referenced in the "Human Capital Management" section of this report. Our EAP is available to all Vornado employees, which represents our coverage.
3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	3.8.1 Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn, and child health; infectious diseases; non-communicable diseases; and service capacity and access, among the general and most disadvantaged population)	Vornado offers all employees universal health coverage through our employee benefits program. Health care services include medical, dental, health and wellness, telemedicine services, seasonal flu shots and preventative screenings. More information can be found in the "Human Capital Management" section of this report.
3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate	3.a.1 Age-standardized prevalence of current tobacco use among persons aged 15 years and older	To protect the health of the occupants, employees, and visitors to our building, Vornado transitioned all properties to tobacco-free and smoke-free environments in 2020. While the use of tobacco products and all smoking devices including electronic cigarettes and vaporizers had already been prohibited for all interior spaces, this policy now extends to all exterior property under Vornado's control.
3.d Strengthen the capacity for all countries, for early warning, risk reduction and management of national and global health risks	3.d.1 International Health regulations (IHR) capacity and health emergency preparedness	Considered throughout Vornado's business activity, starting with our materiality and risk assessments, development and deployment through our programs and practices described in the Health & Wellness and BMS & Clean Cleaning sections of this report.



UN Goal Target	UN Goal Indicator	VNO Response
5.1 End all forms of discrimination against all women and girls everywhere	5.1.1 Whether or not legal frameworks are in place to promote, enforce, and monitor equality and non-discrimination on the basis of sex	Vornado Realty Trust is an equal opportunity employer, and strictly prohibits discrimination of all forms on the basis of race, ethnicity, religion, color, sex, gender, gender identity, sexual orientation, age, status as a protected veteran, or status as a qualified individual with a disability.
5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	5.5.2 Proportion of women in managerial positions	37% of Vornado's managerial positions are held by female. More information can be found in the Social Results section of this report.



UN Goal Target	UN Goal Indicator	VNO Response
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	6.4.1 Change in water-use efficiency over time	Vornado reduced water consumption in 2022 from 2019 levels. Much of this reduction was due to COVID-19.

\*This disclosure was not subject to Deloitte & Touche LLP's review and, accordingly, Deloitte & Touche LLP does not express a conclusion, opinion, or any form of assurance on such information.



UN Goal Target	UN Goal Indicator	VNO Response
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption	In 2022 Vornado consumed 32.51% of energy from renewable resources. We plan to continue to increase our electricity supply from renewable resources when and where feasible.
7.3 By 2030, double the global rate of improvement in energy efficiency	7.3.1 Energy intensity measured in terms of primary energy and GDP	We have measured our energy intensity per square foot. In 2022 our energy intensity was 24.79 kWh / SF.
9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.	9.4.1 CO2 emissions per unit of value added	We have measured our GHG emissions per square foot. Our 2022 GHG emissions intensity was .0071 MTCO2e / SF.



UN Goal Target	UN Goal Indicator	VNO Response
11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	11.2.1 Proportion of population that has convenient access to public transportation, by sex, age, and persons with disabilities	We measure our access to public transportation by the Transit Score assigned to our properties, as by the agency that assigns We 2022, all of our office property a Transit Score of 100, indicating our population has convenient public transportation.



UN Goal Target	UN Goal Indicator	VNO Response
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	12.5.1 National recycling rate, tons of material collected	In 2022, Vornado diverted 646 waste from the landfill. Our data waste collected from about 80 in-service square footage.

\*This disclosure was not subject to Deloitte & Touche LLP's review and, accordingly, Deloitte & Touche LLP does not express a conclusion, opinion, or any form of assurance on such information.

# Glossary

## Carbon Intensity

MTCO<sub>2</sub>e PSF is used as the metric to measure against our carbon neutrality goal.

## Carbon offsets

Indirect projects that avoid or reduce greenhouse gas emissions that are used to compensate for direct greenhouse gas emissions elsewhere. Offsets are measured in CO<sub>2</sub> equivalents.

## Control Approach

A company accounts for 100% of the GHG emissions from operations over which it has control. It does not account for GHG emissions from operations in which it owns an interest, but has no control. Control can be defined in either financial or operational terms. When using the control approach to consolidate GHG emissions, companies shall choose between either the operational control or financial control criteria.

## Embodied Carbon

Can be thought of as the "footprint" of a material or a product. It is the total amount of Greenhouse Gas (GHG) emissions released during the sourcing, manufacturing, transportation, use, and end-of-life for a product or a material and is represented as kg carbon dioxide equivalent or kgCO<sub>2</sub>e.

## Energy Intensity

And energy intensity (MWH/SF) against our energy efficiency goal.

## Energy Management System (EMS/EnMS)

Is a framework that helps an organization achieve its environmental goals, including energy and carbon data, through consistent review, evaluation, and improvement of its environmental performance.

## Equity Share Approach

The equity share reflects economic interest, which is the extent of rights a company has to the risks and rewards flowing from an operation. A company accounts for GHG emissions from operations according to its share of equity in the operation.

## Financial Control Approach

The ability to direct the financial and operating policies with a view to gaining economic benefits from its activities.

## Green Bonds

A green bond is a type of fixed-income instrument that is specifically earmarked to raise money for climate and environmental projects. These bonds are typically asset-linked and backed by the issuing entity's balance sheet, so they usually carry the same credit rating as their issuers' other debt obligations.

## Green Seal

The Green Seal Standard for Commercial and Institutional Cleaning Services, GS-42, establishes environmental requirements for cleaning service providers of commercial, public, and institutional buildings, including in-house and external cleaning services.

## Location-Based

A method reflects the average emissions intensity of grids on which energy consumption occurs.

## Market-Based

A method that reflects emissions from electricity that companies have purposefully chosen (or their lack of choice).

## Operation Control Approach

Under the operational control approach, a company accounts for 100% of emissions from operations over which it or one of its subsidiaries has operational control. It should be emphasized that having operational control does not mean that a company necessarily has authority to make all decisions concerning an operation.

## Organic

Material derived from plant or animal (once alive) sources that can be decomposed by microorganisms.

## Physical Risk (TCFD)

Physical risks resulting from climate change can be event driven (acute) or longer-term shifts (chronic) in climate patterns. Physical risks may have financial implications for organizations, such as direct damage to assets and indirect impacts from supply chain disruption. Organizations' financial performance may also be affected by changes in water availability, sourcing, and quality; food security; and extreme temperature changes affecting organizations' premises, operations, supply chain, transport needs, and employee safety.

## Renewable Energy Credits (REC)

A market-based instrument that represents the property rights to the environmental, social, and other non-power attributes of renewable electricity generation. RECs are issued when one megawatt-hour (MWh) of electricity is generated and delivered to the electricity grid from a renewable energy resource.

## Revolving Credit Facility

Revolving credit facilities are a type of committed credit facility which allow the borrower to borrow on an ongoing basis while repaying the balance in regular payments. Each repayment of the loan, minus interest and fees, replenishes the amount available to the borrower.

## Science Based Target Initiative (SBTI)

A partnership between the Carbon Disclosure Project (CDP), the United Nations Global Compact, World Resources Institute (WRI) and the Worldwide Fund for Nature (WWF). The SBTi call to action is one of the We Mean Business Coalition commitments. SBTi drives ambitious climate action in

the private sector by enabling organizations to set science-based emissions reduction targets. Targets are considered 'science-based' if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C.

## Tenant Space

Lettable floor area (both vacant and let/leased areas) that is or can be occupied by tenants.

## Transitional Risk (TCFD)

Transitioning to a lower-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation related to climate change. Depending on the nature, speed, and focus of changes, transition risks may pose varying levels of financial and reputational organizations.

## TRUE (Total Resource Use and Efficiency)

An Assessor-based certification program that rates how well facilities are minimizing their non-hazardous, solid wastes and maximizing their efficient use of resources.

## Waste Audit

Measurement and identification of waste generated by a site during a 24-hour period. Data gained supplies a baseline understanding of waste and recycling and clarifies changes required to further waste diversion.

## Waste Disposal

Landfilling, incineration without energy recovery or other equivalent open-air disposal is not recovery, including preparing of waste for disposal, even where there is as a secondary consequence the reclamation of substances or energy.

## Waste Diversion

Diverting material from landfill or incineration by recycling or reuse.

## Water Withdrawal

The removal of water from its source for any purpose.

## World Resource Institute's Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard: Revised Edition (WRI & GHG)

The GHG Protocol Corporate Accounting and Reporting Standard provides requirements and guidance for companies and other organizations preparing corporate-level GHG emissions inventory. The standard covers the accounting and reporting of seven greenhouse gases covered by the Kyoto Protocol: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>).

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The paper in this book contains at least 30% post-consumer waste recycled fiber, which is certified by Green Seal and meets the EPA guidelines for recycled papers.

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