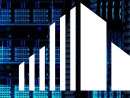


DATA CENTER MARKETBEAT

Fall 2018



CUSHMAN & WAKEFIELD

NORTHERN VIRGINIA

MARKET OVERVIEW

The Northern Virginia data center market continues to be of strategic importance for its proximity to the nation's capital, robust fiber connections, attractive tax incentives, and cheaper energy compared to other markets. Northern Virginia is the largest data center market in the world, with 70 percent of the globe's internet traffic running through it.

Demand throughout the region has reached record levels with hyperscale cloud players such as Amazon, Microsoft, and Google securing large amounts of capacity and companies like Salesforce and Dropbox following right behind. The change in scale is proving to be exponential; where once a two- to five-megawatt opportunity may have sufficed, many users are seeking 10 megawatt requirements with a select few requiring 25 megawatts. Hyperscale computing needs often require massive processing power and therefore, large amounts of space.

On average, land sales throughout the Northern Virginia area are the most expensive in the data center world, with the once-shocking \$1 million per acre price in Ashburn now an expected cost of doing business.

ABSORPTION

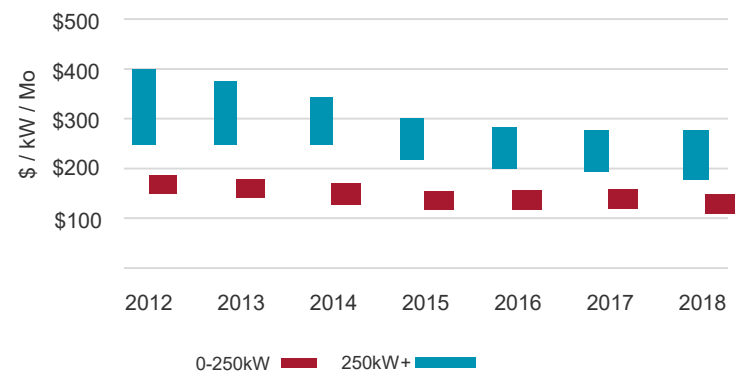
Third quarter absorption was a robust 62 MW, albeit down from the record 150 MW absorbed in the second quarter. This brings the annual tally to 254 MW, with large users on the hunt for more capacity and development struggling to keep up.

LEASING, SALE, AND INVESTMENT HIGHLIGHTS

- **Atlantic.net** has taken 2 MW at the Evocative-managed 1807 Michael Faraday Court, offering colocation, cloud hosting, and other services.
- **Blackstone** acquired a \$359 million DC-area industrial portfolio from FRP Development, with three of the buildings located in Gainesville acting as data centers for Amazon. The three facilities totaled over 350,000 square feet at an investment cost of \$58.4 million.
- **Digital Realty** secured a new round of funding for its eight-building national data center portfolio, which includes \$24 million for three properties in Gainesville and Ashburn. The refinancing was part of a CMBS issuance managed by Wells Fargo, Morgan Stanley, and Bank of America-Merrill Lynch.

Northern Virginia is the largest data center market in the world, with 70 percent of the globe's internet traffic running through the region.

NORTHERN VA DATA CENTER PRICING



IN THE NEWS

Dunant Cable

Google has announced the Dunant cable, a new pipe to be laid by TE SubCom that will connect Virginia Beach to coastal France by 2020. This endeavor should power a large amount of additional cross-Atlantic traffic.

Senate Bill 268

Passed in July, Virginia Senate Bill 268 created a separate classification for data center computer equipment and peripherals, which may alter the valuation of data centers.

Danville Tax Rate

The city council of Danville in Southern Virginia will be voting to establish a new tax rate of 25 cents per \$100 assessed of data center equipment, which would make it the lowest in the state for data centers of 20MW or greater. This could be impactful if land pricing continues to rise in Loudon and Prince William Counties.

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CONSTRUCTION UPDATE: NORTHERN VIRGINIA

OPERATOR	LOCATION	SIZE (SF)	POWER (MW)	STAGE / EST. DELIVERY
EdgeCore	Sterling	180,000	36	Under Construction
Sabey	Ashburn	36,000	5.4	Under Construction Q1 2019
CoreSite	Reston	50,000	12	Under Construction / Q1 2019
	Washington	24,000	1.3	Under Construction / Q4 2018
Equinix	Culpeper	15,000 (est)	2 (est)	Under Construction / Q4 2018
	Ashburn	25,000	3.6	Under Construction / Q4 2018
Iron Mountain	Manassas	22,000	7.5	Under Construction / Q1 2019
QTS	Ashburn	180,000	32	Under Construction (Two phases)
Vantage	Ashburn	720,000	24 (phase 1) 108 (phase 2)	Under Construction / Q4 2018 (phase 1)
Digital Realty	Ashburn (ACC9)	45,000	7.2	Under Construction Q1 2019
RagingWire	Ashburn	225,000	32	Under Construction Q2 2019
CyrusOne	Sterling (Maries)	154,000	33	Under Construction / Q1 2019
	Sterling (Kincora)	120,000	12	Under Construction / Q4 2019
COPT	DC23	149,000	25 (est)	Under Construction / Q4 2018
	MP2	216,000	25 (est)	Under Construction / Q4 2018
	MP1	216,000	25 (est)	Under Construction / Q2 2019
CloudHQ	Ashburn	300,000	72	Planned / Q2 2020
Cologix	Ashburn	141,744	7.1	Planned
Aligned Energy	Ashburn	370,000	80	Planned
NV Real Estate Two LLC	Loudon West	2,300,000 Four Buildings	150 (est)	Planned, Pending Approval
Sentinel Data Centers	Ashburn	238,000 Two Buildings	47	Planned, Pending Approval
EFO Capital Management	Vint Hill	1,400,000	100 (est)	Planned, Pending Approval



“Several new operators have entered the market since the beginning of 2018, including EdgeCore and Aligned Energy. All large REITs already in Northern Virginia are also currently expanding, with many planning new campuses of anywhere from 50 to 100 MW.”

DATA CENTER MARKETBEAT

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NORTHERN VIRGINIA

RECENT NORTHERN VIRGINIA LAND SALES

PROPERTY	SIZE (ACRES)	SALE DATE	SALE PRICE	BUYER	SELLER
Old Ox Road Sterling	40	Sep-18	\$38,900,000	CyrusOne	DBT Data, JK Moving
Route 267 Leesburg	332	Sep-18	\$73,000,000	Microsoft	Peterson Cos
24086 Bears School Road Sterling	424	Sep-18 (in contract)	\$236,500,000	Digital Realty	Metropolitan Washington Airports Authority
25140 Tanner Lane Chantilly	78	Sep-18 (in contract)	\$60,000,000 (estimated)	COPT	Gudelsky Group
21021 Atlantic Boulevard Sterling	37	Sep-18	\$43,002,793	EdgeCore	Lerner Enterprises
21673 Beaumeade Circle Ashburn	23	Aug-18	\$38,000,000	Cologix	Christian Fellowship Church
Pacific Boulevard Sterling	23	Jul-18	\$24,186,329	Digital Realty	Abbas Bashir-Elahi
Lockridge Road Ashburn	281	Jun-18	\$82,500,000	Sentinel Data Centers	Antigone Realty
7500 Bethlehem Road Manassas	10	Jun-18	\$3,273,860	Amazon	Norfolk Southern
10000 Godwin Drive Manassas	62	May-18	\$16,500,000	Digital Realty	Amazon
24267 Quail Ridge Lane Aldie	36	Apr-18	\$45,000,000	Northstar Commercial Partners	NVC Development LLC

“

“Since the beginning of 2018, **20 sites** in the region have sold or are in contract for future development at a volume of nearly **\$800 million.**”



NORTHERN VIRGINIA

SPOTLIGHT ON: MANASSAS

Manassas has established itself as the epicenter for Northern Virginia's largest new projects. QTS, CloudHQ, and Digital Realty have all purchased sites and begun developments there over the last few years, with all targeting the same large users. While Microsoft and Salesforce chose to lease space from CloudHQ and QTS respectively, Amazon has elected to develop on its own with a recent site purchase on Innovation Drive.

Why Manassas?

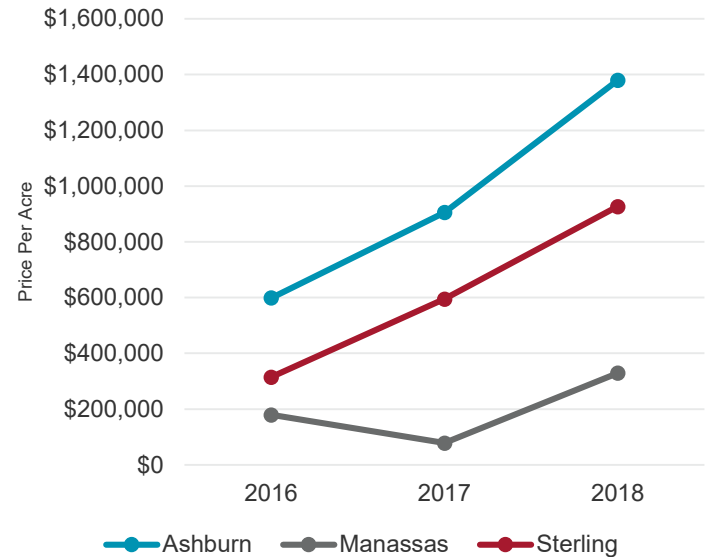
- Amount of available space
- Substantially lower land pricing compared to Sterling and Ashburn
- A lower threshold to begin development
- Lower lease pricing in the \$100-\$150 range depending on size
- Located in Prince William County's Data Center Opportunity Zone Overlay District
- Highly attractive tax rate on computer equipment and peripherals at \$1.25 per \$100 spent

Manassas' local utility NOVEC currently has little ability to provide power to the area. While Dominion Power in Ashburn has demonstrated significant substation development, NOVEC must do the same. Prince William County is working with NOVEC on clearing hurdles for future power production and distribution. Due to these issues, sites that have existing power and infrastructure are extremely attractive to potential users.

Manassas Land Sales – Past 30 Months

PROPERTY	SIZE (ACRES)	SALE DATE	SALE PRICE	BUYER	SELLER
10000 Godwin Dr	60	May-18	\$16,500,000	Digital Realty	Amazon
9350 Godwin Dr	61	Mar-18	\$24,700,000	QTS	Dreyfuss Management
9630 Innovation Dr	92	Jan-18	\$29,000,000	Amazon	Buchanan Partners
10400 Harry J Parrish Blvd	98	May-17	\$7,650,000	CloudHQ	Oldcastle Inc
10000 Godwin Dr	156	Dec-16	\$33,000,000	Amazon	Oldcastle Inc
8148 Bethlehem Rd	32	Jun-16	\$3,570,000	COPT	Frederick Paxton
11650 Hayden Rd	83	Apr-16	\$17,781,371	Iron Mountain	Warren family

MANASSAS COMPETITIVE LAND PRICING



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