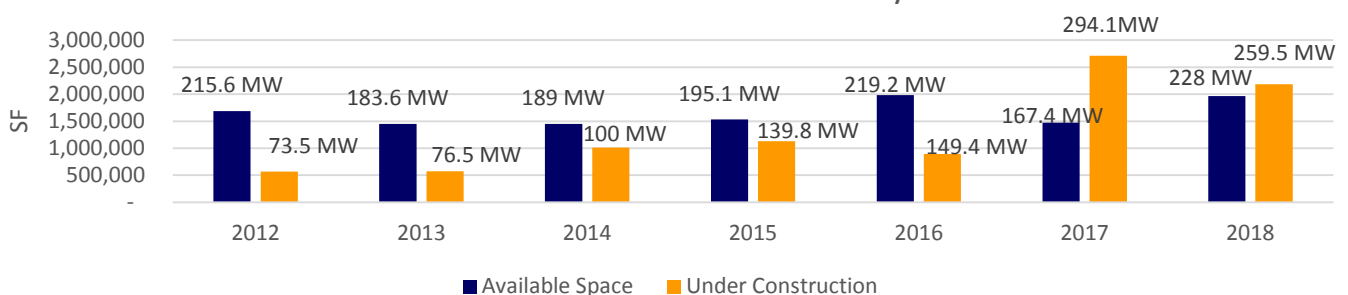


Overview of Issues Impacting Data Centers During 2018

- Multi-Tenant Data Center (MTDC) leasing more than doubled in 2018 compared to 2017.
- Leasing activity in Northern Virginia (NOVA) for data centers was more than two and a half times all other markets combined in 2018.
- Overall rental rates have decreased as a result of new operators and investors and hyperscale users demanding volume pricing.
- These massive cloud users once again dominated leasing activity in 2018.
- Overall volume and value of investment activity were down from 2017, but several highly anticipated strategic transactions will set the course for a couple of larger operators.
- Given the proliferation of new capital and an increase in stabilized assets, developers will use joint ventures to fund their expansions.
- Significant increase in land acquisition to bank for future development dominated by NOVA.
- Land sales are nearing \$2.0 million an acre in Ashburn, and as such, Prince William County and Fauquier County have seen an uptick in land sales topping off at \$425,000 and \$250,000, respectively.
- Large enterprises sold data center properties as sale-leasebacks or vacant assets.
- Cap rate compression led to additional sales on recently traded long-term stabilized assets.
- The roll out of turnkey leases in 2008-2009, coupled with a proliferation of shorter-term leases signed in 2013-2014 has led to significant increase in leases expiring in 2019 and 2020.
- Dallas leased over 40 MW of space mostly through expansions.
- Chicago leased more than 20 MW of space in 2018, mostly to smaller tenants.
- New speculative space in Santa Clara met with strong leasing activity, particularly by Chinese technology companies.
- Leasing activity in Atlanta has been limited, and developers have been slow to build despite numerous new projects announced in 2017.
- Tenants expanding and new large campus developments contributed to robust leasing in Salt Lake City and Phoenix in 2018.
- Leasing activity in Quebec was dominated by cryptocurrency and Amazon leased 6 MW at two locations.
- DLR had some recent success with U.S. cloud operators in Toronto.
- Acceleration of blockchain throughout the U.S. and Canada in 2018 met with pushback on utility pricing.
- Significant challenges have emerged thus far for landlords and tenants reaching terms for blockchain.
- New projects by operators expected in several markets during 2019 will face challenges related to timing due to supply chain constraints.
- A significant uptick in construction costs are expected as a result of a decrease in the supply chain brought on by hyperscale data center users.
- Costs will be exacerbated by steel and aluminum tariffs and electronic components from China.
- Shortages of labor in NOVA, the Bay Area, and Washington will delay the delivery of some data center operator projects.

Historical Data Center Inventory



This graph depicts turn-key space that is currently built-out in Multi-Tenant Data Centers (MTDC). This does not contemplate total SF/MW of properties.

North American Data Centers

DATA CENTER REAL ESTATE REVIEW: 2018

Investment Activity 2018

Buyer	Seller	Size SF	Market	Sales Price	Comments
INAP	Singlehop		Chicago, IL	\$132 MM	7x EBITDA
Landmark Infrastructure	Lexington Realty Trust	84,000	Omaha, NE	\$16.4 MM	Wipro - 7.1% cap rate
GI Partners	RXR Realty	130,009	Nutley, NJ	\$42.9 MM	BT Americas
Iron Mountain	IO Data Centers, LLC	530,856	Phoenix, AZ	\$106.875 MM	9 acres & 60 MW Adj
Iron Mountain	IO Data Centers, LLC	125,000	Scottsdale, AZ	\$35.625 MM	
Carter Validus	Digital Realty	69,048	Rancho Cordova, CA	\$36.8 MM	SunGard – 8.97% cap
Carter Validus	Digital Realty	63,791	Rancho Cordova, CA	\$14.2 MM	Windstream – 8.45% cap
Carter Validus		62,002	McLean, VA		
CIM Group LP / 1547	Green House Data	42,000	Cheyenne, WY		
eStructure	Duke Realty	446,811	Sterling, VA	\$109.9 MM	United - 5.25% cap rate
Equinix	ASB / DCI	1.6 MM	Dallas, TX	\$800 MM	33-35x EBITDA
IPI Partners	T5 Data Centers		Kings Mountain, NC		Boeing
Landmark Infrastructure	Carter Validus	59,516	Hartland, WI	\$21 MM	8.4 % cap rate
Alpharetta DC, LLC	Carter Validus	165,000	Alpharetta, GA	\$62.2 MM	E-trade – 6.79% cap rate
Carter Validus	KSB Real Estate Trust	76,410	San Jose, CA	\$49.15 MM	AT&T 7yr lease
Brookfield Infrastructure	AT&T	Portfolio	Various	\$1.1 BN	9-10x EBITDA
Landmark Infrastructure	Cyxtera	57,000	LewisCenter, OH	\$5.71 MM	Cyxtera – 6.74% cap rate
Research Way Investments	Bluegrass Partners Bank	376,000	Lexington, KY	\$15.9 MM	Valvoline – court sale
Lincoln Rackhouse/Principal	Bank of America	259,111	Kansas City, MO	\$26 MM	Vacant
Lincoln Rackhouse/Principal	Bank of America	191,061	Chandler, AZ	\$39.7 MM	INAP – 4.5% cap rate
Lincoln Rackhouse Principal	Bank of America	454,421	Plano, TX	\$81.35 MM	Partial sale/leaseback
DI Assetco LLC (Landmark)	RS, Alameda, LLC	27,000	Santa Clara, CA	\$37 MM	
Ensono	Wipro	Portfolio	Various	\$405 MM	
H5 Data Centers	Intuit, Inc.	240,000	Quincy, WA	\$41 MM	Partial sale/leaseback
Landmark Infrastructure		75,119	Richardson, TX	\$36.6 MM	SunGard – 7.8% cap rate
Pinchal	Skybox	150,000	Plano, TX	\$48 MM	Blockchain
Menlo Equities	Carter Validus	92,700	Andover, MA	\$15 MM	Windstream – 6.64% cap
Landmark Infrastructure	Louis J. Eyde Family	132,456	Hazelwood, MO	\$50 MM	Reuters – 6.6% cap rate
EdgeConnex	Merit Partners, Inc.	79,183	Tempe, AZ	\$15.63 MM	6.5% cap rate
IPI Partners	T5 Data Centers	221,336	Elk Grove Village, IL	\$118.9 MM	
IPI Data Centers	ASB Real Estate	Portfolio	Various	TBD	
Carter Validus	Douglas Draper, TTEE	25,321	St. Louis, MO	\$3.2 MM	Verizon - 7.79% cap rate
Affiliate of Next Tier HD	Stream Data Centers	75,676	Chaska, MN	\$77.5 MM	US Bank – 6.8% cap rate
IPI Data Centers	ASB Real Estate	Portfolio	Various	TBD	
Raymar Land	State Automobile Mutual	25,589	Columbus, OH	\$4.45 MM	Vacant
Rock Creek	DC II 4726	29,960	Canton, OH	\$9.4 MM	100% - 8.2% cap rate
IPI Partners	Clarion Partners	88,470	Tukwila, WA	\$53.5 MM	Century Link
Carter Validus		21,800	Hartford, CT	\$5.2 MM	Verizon
CIM Group LP / 1547	Digital Capital	66,000	Chicago, IL	\$27 MM	
Vantage	4 Degrees	Portfolio	Various	\$200 MM	



North American Data Centers

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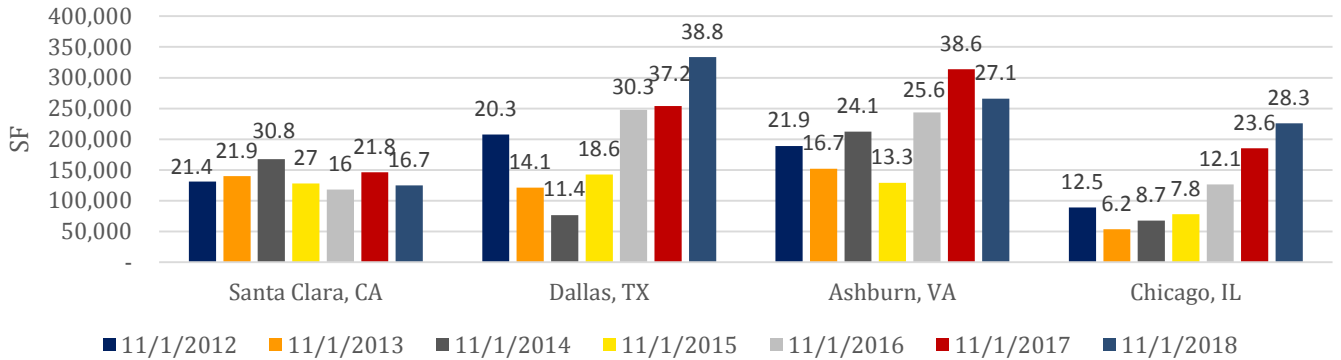
Capitalization rates and EBITDA multiples are provided from sources deemed reliable.

Big Red Wines We Really Enjoyed During 2018

Amici To Kalon Cabernet Sauvignon 2015 (2N)
 Behrens Clearing the Way 2013 (N+1)
 Chateau Smith Cabernet Sauvignon 2015 (N)
 Revana Cabernet Sauvignon 2014 (N+1)

Orin Swift 8 Years in the Desert Red Wine 2016 (N+1)
 Melanson Matthew's Block Cabernet Sauvignon 2012 (N+1)
 Clif Family Cold Springs Cabernet Sauvignon 2015 (N+1)
 Fantesca All Great Things Red Wine 2015 (2N)

Available Turn-key Data Center Space
 Highlighted U.S. Markets By Square Feet and Megawatts



This graph depicts turn-key space that is currently built-out in Multi-Tenant Data Centers (MTDC). This does not contemplate total SF/MW of properties.

Largest Wholesale Turn-Key Leases During 2018

Tenant	Market	Provider	(MW)	Tenant	Market	Provider	(MW)
Facebook	Manassas, VA	Cloud HQ	72 MW	SAP	Ashburn, VA	DLR	5 MW
Salesforce	Manassas, VA	QTS	26 MW	Microsoft	Phoenix, AZ	CONE	5 MW
Microsoft	Manassas, VA	Cloud HQ	25 MW	Google	Salt Lake City, UT	Aligned	5 MW
Facebook	Ashburn, VA	DLR	25 MW	Nokia	Suburban Chicago, IL	DLR	3.3 MW
Microsoft	Ashburn, VA	CONE	20 MW	Alibaba	Ashburn, VA	CONE	3 MW
TBD	Ashburn, VA	DLR	20 MW	Oracle	Toronto, CA	DLR	3 MW
Streamcast	Las Vegas, NV	Switch	15 MW	TBD	Denver, CO	Flexential	2.5 MW
HUG (PBB)	Houston, TX	Skybox	15 MW	Google	Chicago, IL	EQIX	2.4 MW
Microsoft	Ashburn, VA	RagingWire	14 MW	Google	Chicago, IL	QTS	2 MW
INAP (BoA)	Chandler, AZ	Lincoln	10 MW	Oracle	Dallas, TX	QTS	2 MW
Microsoft	Toronto, CA	DLR	10 MW	TBD	Hillsboro, OR	Infomart	2 MW
Microsoft	Ashburn, VA	CONE	10 MW	Blockchain	Montreal, CA	Estructure	2 MW
Salesforce	Ashburn, VA	CONE	6 MW	PayPal	Salt Lake City, UT	Aligned	2 MW
Salesforce	Ashburn, VA	DLR	6 MW	Criteo	Dallas, TX	Aligned	2 MW
China Telecom	Santa Clara, CA	DLR	6 MW	Nutanix	Phoenix, AZ	Aligned	2 MW
Microsoft	San Antonio, TX	CONE	6 MW	Jack Henry	Allen, TX	Compass	2 MW
Alibaba	Ashburn, VA	CONE	5 MW	PayPal	Phoenix, AZ	Aligned	2 MW
Microsoft	Ashburn, VA	DLR	5 MW	Salesforce	Phoenix, AZ	CONE	2 MW
				Workday	Portland, OR	Flexential	2 MW
				Delta	Atlanta, GA	T5	2 MW

