# BDO's Strategic Guide to Data Center Site Selection

|BDO®

The data center industry is experiencing unprecedented growth, with capacity expected to **double over the next five years**. This growth, driven by artificial intelligence (AI), cloud computing, and widespread digital transformation, has prompted a sharp increase in demand for data center development. As demand increases, reliable site selection is more critical and complex than ever.

Several immediate challenges are complicating development decisions. Supply chain constraints are extending timelines for Uninterruptible Power Supply (UPS) transformer procurement to six months or longer. New copper tariffs are driving up cabling and materials costs, while labor shortages in skilled construction trades are introducing delays and uncertainty across projects.

These pressures are reshaping the data center development landscape across both mature and emerging markets. Prime real estate is becoming increasingly difficult to secure, and heightened competition is driving up the costs of land and construction. At the same time, proximity to end users is taking precedence over traditional site selection factors. As a result, the industry is expected to focus more heavily on growing capacity, both by scaling up existing facilities and being more strategic about where new facilities are built.

This guide offers a detailed roadmap for data center site selection, encompassing critical infrastructure assessments, financial optimization strategies, and community considerations that can significantly impact a project's success.
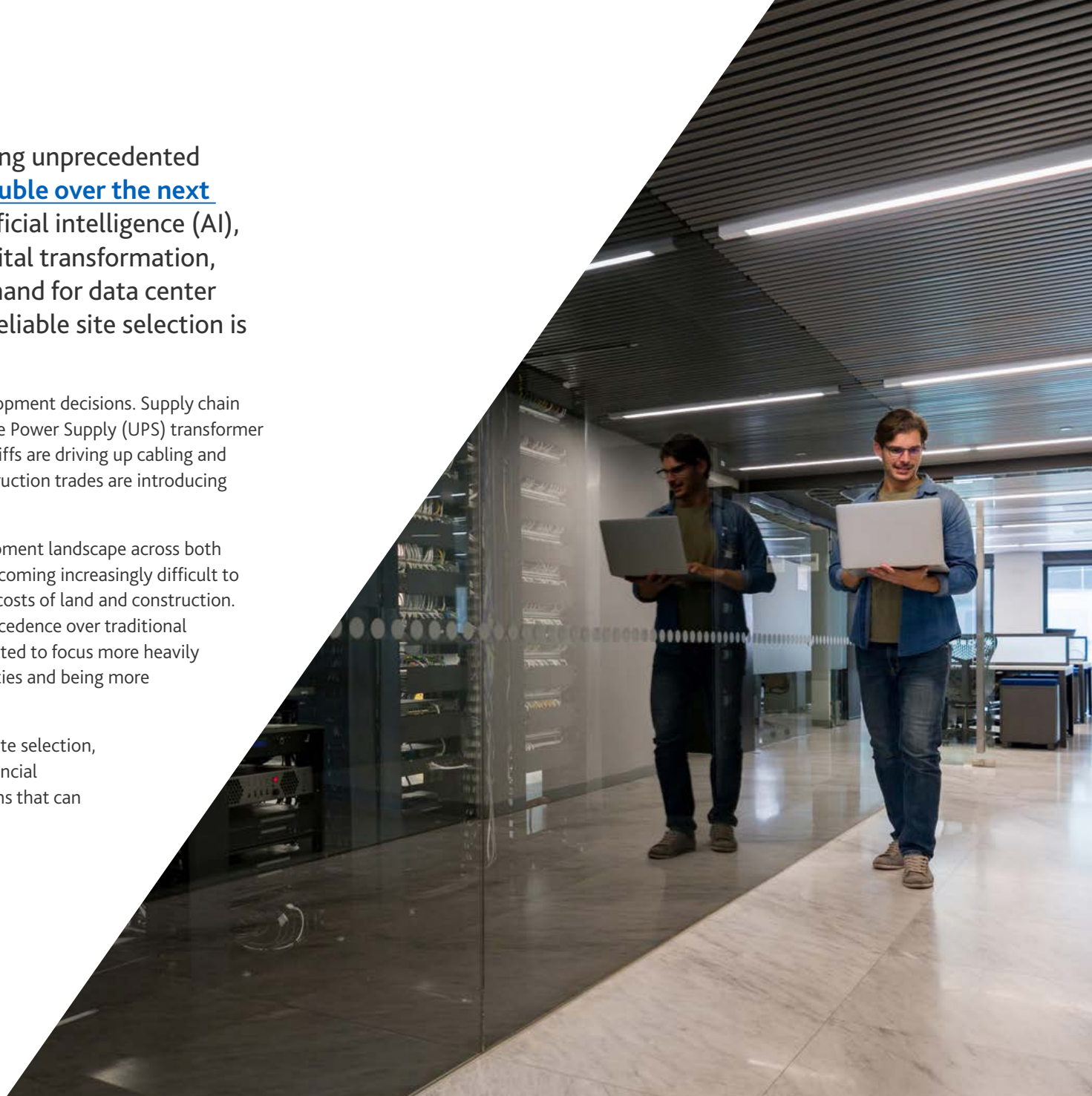
PHASE 1: CRITICAL INFRASTRUCTURE ASSESSMENT

Step 1: Assess Power Infrastructure and Grid Reliability

The foundation of any successful data center project rests on three interconnected infrastructure elements: reliable power, robust connectivity, and long-term cooling solutions.

Data center power requirements have surged substantially, with AI-focused centers demanding higher energy levels that could potentially change infrastructure requirements and site viability assessments. This growing need makes electrical infrastructure the foundational requirement that determines project viability.

The data center market in Northern Virginia exemplifies the importance of a robust electrical infrastructure and power reliability. Developed through decades of federal government investments, the infrastructure of this region makes for a dominant position. But even this established hub faces capacity constraints, underscoring the need for a comprehensive assessment of current and projected power infrastructure in any market.

As they explore locations, developers should evaluate both current grid capacity, stability, and future availability, since new data centers will increasingly compete for limited power resources.

To avoid costly downtime from power outages, newly built data centers will need redundancy layers, including independent power feeds, backup generators, and uninterruptible power supplies. Developers should look for locations with access to diverse utility sources and robust on-site generation capabilities. As developers evaluate redundancy options, many view wind and solar as credible sources that could also align with corporate sustainability goals. However, when these renewable sources serve as backup power, their intermittency can create operational challenges that may make it difficult for developers to meet reliability mandates.

Seeking more stable options, some companies are transforming their power sourcing strategies, bypassing traditional utilities through direct deals with natural gas pipeline operators or even constructing new, dedicated power plants exclusively for data center use. While this direct approach can offer reliability over solar and wind alternatives, it also demands careful environmental and regulatory planning.

Regional grid vulnerabilities add another layer of complexity to power infrastructure planning. Hurricane-prone regions, wildfire-susceptible areas, and locations with aging electrical infrastructure require enhanced scrutiny and more robust backup systems to ensure long-term viability and success.

Step 2: Ensure Connectivity and Network Infrastructure

While energy provides the foundation for operations, connectivity infrastructure determines a data center's ability to serve customers and compete in the market. High-speed internet connectivity and fiber optic access are important requirements for powering data center operations, because developers need highly reliable internet access and multiple fiber network providers to ensure redundancy, stability, and optimal performance. Internet exchange points (IXPs) are infrastructure facilities that enable direct connectivity between networks, reducing costs and enhancing the value of a site for potential tenants. Proximity to IXPs can make the difference between a suitable facility and a premium location that allows for higher usage rates.

Carrier-neutral facilities — data centers not owned by a single telecom company — offer advantages through access to multiple network providers, affording future tenants greater flexibility in choosing connectivity options. While Tier 1 metro areas and established urban centers with dense connectivity infrastructure typically offer the strongest network performance, smaller cities and rural markets are investing heavily in connectivity upgrades to compete with established hubs and capture the growing demand for data centers.

Step 3: Determine Water Access and Cooling Infrastructure

The final piece of the infrastructure puzzle addresses the inevitable consequence of high-power, high-connectivity operations: heat generation that requires sophisticated cooling systems. A developer's chosen cooling strategy will directly impact both power consumption and operational costs, making it a critical constraint in data center site selection.

Traditional data centers use approximately **550,000 gallons of water daily**, while AI-focused facilities with more intensive workloads can require up to millions of gallons daily. These AI systems require innovative cooling systems that can place unprecedented demands on local water infrastructure, which must be carefully evaluated for both current capacity and long-term sustainability.

Alternative approaches, such as liquefied natural gas (LNG) cooling systems, can reduce water dependency by harnessing cold energy from regasification processes. But LNG can also introduce methane leakage risks that developers will need to weigh against concerns about water scarcity.

Climate considerations play a more obvious role in cooling requirements, with colder climates naturally requiring lower overall water consumption. However, cooling advantages provided by geography or climate should not supersede other requirements, such as network connectivity and proximity to end-users, in selecting a data center site.

PHASE 2: OPTIMIZE FINANCES AND TAX PLANNING

Step 4: Financial Strategy Development

Access to power, connectivity, and cooling infrastructure entails substantial capital requirements. Utilizing tax incentives and robust financial planning are key to managing costs and protecting project viability. Since data centers create fewer job opportunities than other manufacturing and technology facilities, developers may consider focusing on property tax abatements and local tax waivers that reduce overhead expenses. Some jurisdictions offer utility tax reductions, which may help developers save on the high utility costs generated by data centers' massive energy demands.

A cross-functional approach is essential when finance and real estate leaders evaluate different sites. Company leaders should coordinate with their tax professionals during the early stages of data center development to identify and analyze federal, state, and local credit and incentive programs that can enhance project economics.

PHASE 3: LOCATION AND COMMUNITY ASSESSMENT

Step 5: Evaluate Markets and Associated Risks

Even the most technically sound and financially optimized project can struggle without proper market positioning and community support. Market selection involves balancing established infrastructure advantages against emerging opportunities and cost considerations. Returning to the example of Northern Virginia, this region sports a **2,745 megawatt (MW) capacity** across more than 150 facilities, supported by dense fiber-optic networks that can handle high volumes of traffic and computing demands. But, despite these assets, market saturation has led to land scarcity and premium pricing that make other markets increasingly attractive.

Emerging markets are investing heavily in connectivity infrastructure to compete with established hubs. Dallas-Fort Worth offers **665 MW capacity** across more than 80 data centers, while Phoenix provides 555 MW across over 60 facilities. Chicago maintains 550 MW capacity with upwards of 75 data centers. Meanwhile, Salt Lake City and the state of Georgia are implementing aggressive tax incentive programs to attract data center development and compete for market share.

Natural disaster resilience also remains an important consideration regardless of market maturity. Flood risks, seismic activity, and climate vulnerabilities can threaten operations and require additional protective investments that impact project economics. Before embarking on a project, companies should conduct a comprehensive risk assessment that examines both historical climate patterns and projected changes that could affect long-term facility operations.

Step 6: Ensure Robust Physical Security

Protecting the physical site itself is also critical for data centers. Developers should take time to consider how they'll guard facilities against vandalism, unauthorized access, and even terrorism attacks. To do so, data centers should be located in safe and secure areas, away from regions with high crime rates and risks. Physical access to the data center should be tightly controlled using safety measures such as biometrics scanners, advanced card readers, ample security cameras, and security guards.

Step 7: Consider Community Relations Management

Community opposition can derail a well-planned project. Developers cannot afford to overlook the concerns of local residents and stakeholders, which could include:

▶ Employment opportunities, because data centers do not create a plethora of job opportunities in the markets where they're built.

▶ Utility consumption without proportional economic benefits. Water usage sensitivities may be particularly acute in drought-prone regions.

▶ Concerns that power grid demands will affect residential service quality. Residents may even fear brownouts or increased utility costs resulting from data center operations, which could lead to pushback.

Proactive outreach strategies can mitigate community concerns. Early community stakeholder engagement enables companies to address concerns transparently, highlighting the benefits of additional tax revenue and demonstrating a long-term commitment to the community.

NAVIGATING COMPLEX SITE SELECTION DECISIONS

Data center site selection involves weighing complex considerations that span infrastructure assessment, financial optimization, and community engagement. The interconnected nature of these factors means that decisions in one area can impact outcomes in another, requiring a coordinated approach that considers all variables simultaneously.

Developers navigating these challenges may benefit from integrated guidance that combines technical site evaluation with tax and compliance analyses. BDO's Advisory and Tax professionals take a holistic approach to site selection and can help technology companies exploring data center development balance stakeholder interests, apply for critical tax incentives, and identify an ideal long-term location that aligns with business objectives.

CONTACT US

TOM MANNION
National Data Center Practice Leader
tmannion@bdo.com

TIM SCHRAM
Tax Principal, State & Local Tax
tschram@bdo.com

ROSS FORMAN
Practice Leader, Management Consulting
rforman@bdo.com

Our purpose is helping people thrive, every day. Together, we are focused on delivering exceptional and sustainable outcomes and value for our people, our clients and our communities. BDO is proud to be an ESOP company, reflecting a culture that puts people first. BDO professionals provide assurance, tax and advisory services for a diverse range of clients across the U.S. and in over 160 countries through our global organization.

BDO is the brand name for the BDO network and for each of the BDO Member Firms. BDO USA, P.C., a Virginia professional corporation, is the U.S. member of BDO International Limited, a UK company limited by guarantee, and forms part of the international BDO network of independent member firms. For more information, please visit: www.bdo.com.