Data Centers in Pottawatomie County and the Greater Manhattan Region

A Community-Informed Assessment for Local Decision-Makers

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ECODEVO
Prosperity Through Partnerships

This document is designed to serve as both a reference and a foundation for continued discussion.

Executive Summary

Communities across the United States are increasingly being approached with data center development opportunities, driven by rapid growth in cloud computing, artificial intelligence, and digital infrastructure. Pottawatomie County and the Greater Manhattan region are now part of that conversation.

This paper provides a clear, fact-based foundation to help local leaders evaluate whether—and under what conditions—data center development aligns with regional priorities.

Data centers represent a distinct category of economic development. They are:

- Highly capital-intensive (often $500 million to $1+ billion)
- Dependent on large-scale infrastructure, particularly electricity and fiber
- Low in permanent employment relative to their size

They can expand the tax base and drive infrastructure investment, but also introduce considerations related to energy demand, land use, and (depending on design) water consumption.

Kansas has established a structured policy environment for large-load users. Through Evergy, the Kansas Corporation Commission, and Senate Bill 98 (2025), data centers are required to:

- Fund infrastructure needed to serve them
- Enter long-term power agreements
- Pay rates aligned with system costs

This reduces the likelihood of cost shifting to residential ratepayers while providing clarity for developers.

Key takeaway:
Data centers are neither inherently beneficial nor harmful. Outcomes depend on:

- Infrastructure capacity and scalability
- Local policy decisions (land use, incentives, siting)
- The structure of individual projects

For the Greater Manhattan region, this is an early-stage exploration—not a commitment.

The region has begun coordinated engagement with utilities, institutions, and regional partners to understand opportunities and constraints. The policies established now will shape how future proposals are evaluated.

Bottom line:
The region is in a position to define the terms of engagement.

1. Introduction and Purpose

This reference guide is intended to inform decision-making, not advocate for a specific outcome.

It provides a shared foundation for local elected officials, community leaders, and stakeholders to evaluate:

- What data centers are
- Why regions like Greater Manhattan are being considered
- What impacts and tradeoffs they present

The analysis focuses on:

- Pottawatomie County and the Greater Manhattan region
- Large-scale and hyperscale data centers
- Near- to mid-term planning considerations

This document does not assume a project will occur. It prepares the region to respond thoughtfully as opportunities arise.

Sources linked in the document:

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2. Understanding Data Centers

Data centers are specialized physical facilities designed to store, process, and transmit digital information at massive scale. They are the backbone of the modern economy, enabling everything from cloud computing and artificial intelligence to financial systems, healthcare records, logistics networks, and government operations. When a business uses a cloud platform, a hospital accesses patient data, or a consumer streams video, those interactions are supported by servers housed in data centers.

At a basic level, a data center consists of server racks (computing hardware), networking equipment, power supply systems, and cooling infrastructure, all operating in a highly controlled environment. What distinguishes modern data centers is not just their technical function, but their scale, specialization, and integration into global digital systems.

Types of Data Centers

Modern data centers generally fall into three categories, each with distinct business models and operational characteristics.

Enterprise Data Centers
These facilities are owned and operated by a single organization to support its internal operations. Historically, many large corporations maintained their own on-site data centers. For example, companies like Walmart and JPMorgan Chase have operated enterprise data centers to manage internal systems, financial transactions, and logistics platforms. While still common in some industries, many organizations are shifting away from this model toward cloud-based infrastructure.

Colocation Data Centers
Colocation facilities provide shared infrastructure where multiple customers lease space for their servers. These facilities offer power, cooling, security, and connectivity, allowing businesses to avoid building their own data centers. Major operators such as Equinix and Digital Realty have

built global networks of colocation facilities, often located in major metropolitan areas and network hubs. Colocation centers play a critical role in enabling smaller firms, telecommunications providers, and cloud companies to interconnect.

Hyperscale Data Centers
Hyperscale facilities are the largest and fastest-growing segment of the industry. These are massive campuses operated by major technology companies to support cloud computing and AI workloads at global scale. Firms such as Amazon Web Services, Microsoft, Google, and Meta are the primary developers and operators of hyperscale data centers.

These facilities are typically located on large parcels of land, often in clusters, and are designed for rapid expansion over time. A single hyperscale campus may include multiple buildings, each filled with tens of thousands of servers.

Key Characteristics of Hyperscale Facilities

Hyperscale data centers are the most relevant to regional economic development discussions because of their scale and infrastructure demands.

Capital Intensity
Hyperscale facilities require substantial upfront investment. Individual projects frequently exceed $500 million, and multi-phase campuses can reach several billion dollars in total investment. For instance, Microsoft has invested billions in its data center campuses in places like Mount Pleasant, Wisconsin, while Meta has developed large-scale campuses in Iowa and Nebraska. These investments include not only buildings, but also high-value equipment such as servers, cooling systems, and electrical infrastructure.

Continuous Operations
Data centers operate 24 hours a day, 365 days a year. Even brief interruptions can have significant economic consequences, which is why facilities are built with multiple layers of redundancy, including backup generators, battery systems, and redundant network connections.

Significant Electricity Demand
Electricity is the primary operational input. Large facilities often require 20 to 100 megawatts (MW) or more, with some campuses exceeding 200–300 MW at full buildout. To put this in context, a single large data center can consume as much electricity as a mid-sized city, while even smaller facilities often draw several times more power than a typical hotel or commercial building. This level of demand is why utility coordination and long-term power planning are central to site selection.

Cooling and Thermal Management
Servers generate significant heat, requiring sophisticated cooling systems. As noted earlier in this paper, cooling approaches vary widely, from air-cooled systems to advanced liquid cooling technologies. Increasingly, hyperscale operators are adopting more efficient and water-conscious designs, particularly for AI workloads.

Relatively Small Permanent Workforce
Despite their size, data centers employ relatively few permanent workers. A typical hyperscale facility may support 30 to 100 full-time operational jobs, focused on IT management, security, and facility maintenance. This distinguishes data centers from traditional industrial projects, where employment density is often a primary driver of economic impact.

Campus-Style Development
Many hyperscale projects are built as multi-building campuses that expand over time. For example, Northern Virginia's "Data Center Alley" has grown into the largest concentration of data centers in the world, with dozens of facilities operated by multiple companies. This phased development approach allows companies to scale capacity in response to demand.

Data Centers as Infrastructure

A useful way to understand data centers is to compare them to other forms of [infrastructure.]
Like highways, rail systems, or power plants, they enable broader economic activity rather than directly producing consumer goods.

Major cloud platforms such as Amazon Web Services and Microsoft Azure rely on networks of data centers distributed across regions. These networks allow businesses, governments, and individuals to access computing resources on demand, without maintaining their own physical infrastructure.

This shift has transformed how economies function. Instead of building and maintaining their own IT systems, organizations increasingly rely on shared, centralized infrastructure housed in data centers. As artificial intelligence, machine learning, and data-intensive applications continue to grow, demand for this infrastructure is expected to increase significantly.

3. Why Regions Like Manhattan Are Being Considered

Data center developers evaluate locations through a relatively consistent lens, prioritizing infrastructure readiness, long-term scalability, and risk reduction. While global in scope, this site selection process often narrows quickly to regions that can demonstrate a credible ability to deliver power, connectivity, land, and coordinated governance.

Pottawatomie County and the Greater Manhattan region present a combination of characteristics that align with these criteria. Importantly, these are not guarantees of development, but they help explain why the region may receive interest or early-stage inquiries.

Power Availability and Scalability

Access to reliable, large-scale electricity is the single most important factor in data center site selection. Hyperscale facilities require not just significant power, but confidence that it can be delivered consistently over decades and expanded as demand grows.

The presence of the Jeffrey Energy Center is a notable regional asset in this context. As one of the largest generating stations in Kansas, it contributes substantial baseload power to the regional grid. While generation alone does not determine site viability, proximity to major generation and transmission infrastructure can be advantageous, particularly when paired with available transmission capacity or planned upgrades.

Equally important is the role of Evergy, the region's primary electric utility. Evergy has implemented a Large Load Power Service framework specifically designed to accommodate customers with demand exceeding 75 MW. This structure signals to developers that the utility and regulators have already established mechanisms to:

- Plan for large-load interconnection
- Require long-term commitments
- Ensure infrastructure costs are borne by the customer

From a developer's perspective, this reduces regulatory uncertainty and clarifies expectations early in the process. From a community perspective, it provides guardrails intended to protect existing ratepayers.

In practical terms, regions that can demonstrate both current capacity and a credible pathway to scale are far more competitive than those starting from a constrained baseline.

Fiber Connectivity

While electricity powers a data center, fiber connectivity gives it purpose. Data centers must connect to high-speed, high-capacity fiber networks to move data efficiently between users, cloud platforms, and other facilities.

Pottawatomie County and the Greater Manhattan region benefit from its position within a broader network of regional and national fiber routes. While it is not currently a primary "peering hub" like Northern Virginia or Dallas, it is within reach of existing infrastructure and has the potential to expand connectivity as demand grows.

In many emerging markets, fiber availability follows early investment. An initial facility can justify additional fiber buildout, which in turn improves the region's attractiveness for subsequent projects or related industries.

For developers, the key question is not just whether fiber exists today, but whether it can be scaled, diversified (for redundancy), and delivered on the project timeline.

Land Availability

Hyperscale data centers require large, contiguous parcels of land, often ranging from 50 to several hundred acres for a single campus. These sites must also meet specific criteria related to topography, access, zoning, and proximity to infrastructure.

Pottawatomie County offers a relative advantage in this area compared to more urbanized regions. The availability of undeveloped or lightly developed land creates flexibility for:

- Campus-style development
- Phased expansion over time
- Buffering from residential or sensitive uses

However, land availability alone is not sufficient. Developers also evaluate:

- Site readiness (grading, environmental conditions, access roads)
- Distance to transmission infrastructure
- Compatibility with local land-use plans

This is where proactive zoning and site identification can significantly influence outcomes.

Climate and Cooling Efficiency

Climate plays a supporting, but meaningful, role in data center efficiency. Cooler and less humid environments can reduce the energy required for cooling, particularly for air-cooled systems.

The climate in northeastern Kansas is generally considered moderate. While not as cool as northern-tier states, it avoids the extreme heat of southern markets and the humidity challenges of some coastal regions.

This creates opportunities for:

- Seasonal “free cooling” periods
- Hybrid cooling system designs
- Improved overall energy efficiency

As computing density increases, particularly with AI workloads, cooling efficiency is becoming a more important factor in long-term operational costs.

Regional Collaboration

Large-scale data center projects rarely fall neatly within a single jurisdiction’s authority. They often require coordination across:

- Counties and municipalities
- Utilities and transmission providers

- Economic development organizations
- State agencies

Pottawatomie County and the Greater Manhattan region has an established track record of regional collaboration, particularly in economic development and infrastructure planning. This is a meaningful advantage.

From a developer's perspective, fragmented decision-making can introduce risk and delay. Regions that can demonstrate alignment, clear communication channels, and a coordinated approach are more likely to remain competitive through the site selection process.

Clustering Dynamics

Data centers tend to cluster in areas where key infrastructure already exists, particularly power and fiber. Once initial investments are made, those locations become more attractive for additional development due to:

- Shared infrastructure
- Reduced marginal costs for expansion
- Network effects and latency advantages

However, clustering is not inevitable. It is shaped by local policy decisions, including:

- Zoning designations
- Conditional use permits
- Infrastructure agreements
- Land-use planning

Communities such as Loudoun County, Virginia illustrate how clustering can accelerate rapidly when infrastructure and policy align. At the same time, other jurisdictions have slowed or redirected growth through updated land-use controls.

For Pottawatomie County and the Greater Manhattan region, the presence of foundational infrastructure such as the Jeffrey Energy Center and service from Evergy creates the potential conditions for interest. Whether that interest translates into one project, multiple projects, or none at all will depend largely on local and regional policy choices made in advance.

Bringing the Factors Together

What makes a region competitive for data center development is not any single factor, but the alignment of multiple systems:

- Power that is available, scalable, and contractually structured
- Fiber that is present and expandable
- Land that is suitable and policy-aligned
- Governance that is coordinated and predictable

The Greater Manhattan region demonstrates elements of each. The question moving forward is not simply whether the region can attract data center interest, but how it chooses to define the conditions under which that interest is evaluated and, if appropriate, pursued.

And here's what happened another time a major infrastructure project came to the region.

Then and Now: Infrastructure Decisions in the Region

Jeffrey Energy Center:
Built 1978 • 1980 • 1983 (phased units)

Today:

- One of the largest power plants in Kansas
- A cornerstone of the regional energy system
- ~$15M–$25M+ annually in property taxes
- Provides major funding source for schools, county services, and infrastructure
- Helps reduce the property tax burden on residents
- Represents a long-standing industrial tax base

What People Asked Then (1970s–1980s)

- Will this raise electricity costs?
- Is this the right use of rural land?
- What are the environmental impacts?
- Who benefits—locally or elsewhere?

What We're Asking Now (Data Centers)

- Can our infrastructure support the demand (power, water)?
- Where should these facilities be located?
- What is the long-term economic value?
- How do projects align with community priorities?

What's Similar

- Large, long-term infrastructure decisions
- Early uncertainty and public concern
- Questions about local impact vs. broader benefit
- Outcomes shaped by policy and planning

What's Different

- Data centers support the **digital economy**, not power generation

- More **structured state and utility policy frameworks** exist today
- Greater emphasis on **negotiation and community engagement**
- Improved efficiency in **energy and water use**

Why This Matters

The Jeffrey Energy Center reflects a past generation of infrastructure investment that continues to shape the county's tax base today.

Data centers represent a potential next generation of infrastructure.

The key question:
How should the region evaluate and structure future projects to align with long-term community goals?

The bottom line is that the region has faced decisions like this before. The outcome depends not just on the project—but on the choices made around it.

4. Economic and Fiscal Impacts

Capital Investment and Tax Base

Data centers are among the most capital-intensive forms of economic development. **A single hyperscale facility can represent an investment ranging from several hundred million dollars to well over a billion, with multi-phase campuses reaching even higher totals over time.**

This investment is distributed across several major components:

- Physical structures, including data halls, administrative space, and on-site substations
- High-value IT equipment such as servers, storage systems, and networking hardware
- Cooling infrastructure, increasingly specialized for high-density computing
- Electrical systems, including backup generation, battery storage, and switchgear

A defining characteristic of data centers is that a substantial portion of their value lies in personal property, particularly servers and equipment that are replaced on relatively short cycles (often every 3 to 5 years). In jurisdictions where tax policy captures both real property and personal property, this creates the potential for a durable and growing tax base.

For Pottawatomie County and surrounding communities, this raises important considerations around:

- Property tax structure and assessment practices
- The use of abatements or incentives

- Long-term versus short-term fiscal returns

Kansas policy plays a significant role in shaping this equation. Under SB 98 (2025), qualifying data centers may receive a sales tax exemption on construction materials and equipment if they meet minimum investment and job thresholds. This reduces upfront costs for developers but does not eliminate local property tax obligations unless separately abated.

As a result, the fiscal impact of a project in this region would depend heavily on local decisions. Communities that retain taxation on both real and personal property may realize substantial long-term revenue, while those that extend broad abatements may see more limited returns.

There is also a secondary fiscal dimension tied to infrastructure. Because large-load customers in Kansas are required to fund the infrastructure needed to serve them, data center development can drive investment in electrical and transmission systems that may provide broader regional benefits over time, depending on how those systems are planned and utilized.

Employment and Workforce

Data centers differ from traditional economic development projects in their employment profile.

During construction, these projects generate significant workforce demand. Large facilities can support hundreds to over a thousand construction jobs over a multi-year buildout period, including:

- Electrical and mechanical trades
- Specialized construction firms
- Engineering and project management roles

These construction phases can provide meaningful short-term economic activity, particularly if local contractors and workforce pipelines are engaged.

Once operational, however, data centers require relatively small permanent staff. A typical hyperscale facility may employ between 100 and 200 full-time workers, focused on:

- IT systems management
- Network operations
- Physical security
- Facility maintenance and engineering

While this is modest compared to manufacturing or distribution facilities, the jobs themselves are often higher-skilled and higher-wage, particularly in technical roles.

This is where regional institutions become relevant. Kansas State University represents a significant asset in workforce alignment. Its programs in engineering, computer science, and information technology can support:

- Talent pipelines for data center operations
- Research partnerships in high-performance computing and AI
- Collaboration on energy efficiency and infrastructure systems

Similarly, Fort Riley contributes to the regional workforce in a different but complementary way. Military personnel transitioning to civilian careers often bring experience in:

- Cybersecurity
- Network operations
- IT systems management
- Physical security and facility operations

These skill sets align closely with data center operational needs, creating an opportunity to connect military transition programs with emerging industry demand.

The key takeaway is that while direct employment numbers are limited, the quality and alignment of those jobs can be meaningful if intentionally connected to regional workforce assets.

Indirect and Induced Employment

Beyond direct jobs, data centers can support a broader set of economic activities.

Indirect employment may occur in areas such as:

- Telecommunications and fiber installation
- Electrical and mechanical maintenance services
- Equipment suppliers and specialized contractors
- Security and facility support services

Induced impacts, such as increased local spending, are generally more modest than in labor-intensive industries but still present.

Research often suggests that each direct data center job can support multiple additional jobs in the broader economy. However, these outcomes are not automatic and depend heavily on whether the region has the capacity and strategy to capture those opportunities.

Ecosystem Development

The most significant long-term economic impact of data centers often lies in their role as infrastructure anchors rather than standalone projects.

When aligned with local strengths, data centers can support:

Fiber and Digital Infrastructure Expansion
Initial projects often justify expanded fiber networks, which can improve connectivity for businesses, institutions, and residents across the region.

Technology Sector Growth
Improved digital infrastructure can make a region more attractive to:

- Cloud-based companies
- Data-driven businesses
- Remote and distributed workforces

Cybersecurity and Defense Alignment
Given the presence of Fort Riley, there is potential to align data infrastructure with defense-related cybersecurity and information systems. While this would depend on specific project characteristics, the overlap in skill sets and mission areas is notable.

Research and Innovation Partnerships
Kansas State University could play a role in:

- Applied research tied to data center operations
- Workforce training and certification programs
- Collaboration on emerging technologies such as AI and advanced computing

Supply Chain and Supporting Industries
Over time, regions with data center presence may attract firms involved in:

- Cooling technologies
- Power systems and backup generation
- Data management and cloud services

However, it is important to be clear-eyed: these ecosystem effects are not guaranteed. They depend on deliberate strategy, including:

- Workforce alignment
- Business recruitment efforts
- Partnership development
- Policy frameworks that encourage complementary investment

Bringing the Economic Picture Together

Data centers challenge traditional assumptions about economic development. They offer:

- High capital investment
- Potentially strong tax base (depending on policy)
- Infrastructure expansion

But they do not offer:

- Large-scale employment
- Immediate, broad-based economic diversification

For Pottawatomie County and the Greater Manhattan region, the opportunity lies in how these projects are positioned. If treated as isolated real estate transactions, their impact may be limited. If treated as part of a broader strategy involving institutions like Kansas State University and regional assets such as Fort Riley, they have the potential to contribute to a more connected and technology-enabled regional economy.

The distinction between those outcomes will be determined less by the presence of a data center and more by the decisions that surround it.

5. Infrastructure and Resource Considerations

Electrical Demand and Grid Implications

Electricity is the defining input for a data center. Unlike most industrial users, data centers operate at a high, steady load factor, drawing large amounts of power continuously rather than in peaks and cycles. A single hyperscale facility may require 75 megawatts (MW) at initial operation and scale well beyond 200 MW over time.

In Kansas, this level of demand is governed by the Large Load Power Service (LLPS) framework administered by Evergy. This structure was designed specifically to address the challenges and risks associated with very large energy users such as data centers.

Key provisions include:

- **Long-term service agreements**, typically extending 12 years or more, which provide planning certainty for both the utility and the customer
- **Minimum billing requirements**, ensuring customers pay for a substantial portion of their reserved capacity even if usage fluctuates
- **Customer-funded infrastructure**, meaning transmission lines, substations, and interconnection upgrades required to serve the facility are paid for by the developer
- **Financial assurances**, including collateral requirements tied to energy commitments

These mechanisms are intended to reduce the likelihood that existing residential or commercial customers subsidize large-load users. They also signal to developers that Kansas has a defined and predictable regulatory environment.

From a system perspective, large facilities in proximity to generation assets such as the Jeffrey Energy Center can be advantageous, particularly when paired with available transmission capacity. However, generation alone is not sufficient. The ability to deliver power reliably depends on transmission infrastructure, interconnection timelines, and long-term grid planning.

At a broader level, data centers introduce both opportunities and risks for the electrical grid:

Potential Benefits

- Predictable load profiles help utilities plan generation and transmission more efficiently compared to highly variable residential demand
- Integration with battery storage and uninterruptible power systems (UPS) allows some facilities to participate in demand response or grid stabilization programs
- Emerging initiatives from companies like Google and Microsoft are exploring “flexible load” strategies, where computing workloads can be shifted to reduce strain during peak demand periods

Potential Risks

- Concentration of multiple large facilities in a single area can strain transmission infrastructure if not coordinated
- Simultaneous disconnection events, where multiple data centers drop load during disturbances, can create grid instability if systems are not designed with “fault ride-through” capability
- Infrastructure buildout timelines may lag behind development interest, creating bottlenecks

For regions like Pottawatomie County, the central issue is not simply whether power exists today, but whether there is a coordinated, long-term plan involving utilities, regulators, and developers to scale infrastructure responsibly.

Water Use and Cooling Technologies

Water use in data centers is one of the most widely discussed and often misunderstood aspects of their operation. In reality, water consumption varies dramatically depending on the cooling technology employed.

There are three primary approaches:

Air-Cooled Systems
These systems rely on ambient air and mechanical cooling without consuming water for cooling purposes. Many newer facilities, particularly in water-sensitive regions, are designed to operate with zero water use for cooling. Companies such as Google have deployed air-cooled facilities in certain locations to minimize water impact.

Closed-Loop Liquid Cooling
These systems circulate water or coolant within a sealed environment, significantly reducing freshwater consumption. Increasingly, hyperscale operators like Microsoft are adopting advanced liquid cooling, especially for high-density AI workloads, where traditional air cooling is less effective.

Evaporative Cooling Systems
These systems use water to dissipate heat through evaporation and have historically been common due to their energy efficiency. However, they are also the most water-intensive and are being used more selectively, particularly in regions where water availability is constrained.

For Pottawatomie County and the surrounding region, water considerations are highly site-specific. Key factors include:

- Availability of municipal or industrial water supply
- Competing agricultural and community demands
- Regulatory and permitting frameworks
- Developer commitments to specific cooling technologies

The critical takeaway is that water impact is not inherent to data centers. It is determined by engineering choices and negotiated requirements. Communities that establish clear expectations around water use, efficiency metrics, and technology standards can significantly influence outcomes.

Land Use and Physical Footprint

Hyperscale data centers require large, contiguous parcels of land and are typically developed in campus-style configurations. A single project may occupy anywhere from 50 to several hundred acres, with additional land often reserved for future expansion.

In a region like Pottawatomie County, where land availability is less constrained than in major metropolitan areas, this can be an advantage. However, it also raises important planning considerations.

Compatibility with Surrounding Uses
Data centers are generally low-traffic, low-emission facilities, but their scale can create visual and spatial impacts. Careful siting is needed to ensure compatibility with:

- Residential areas
- Agricultural land
- Existing industrial uses

Setbacks and Buffering
Best practices in other regions often include:

- Significant setbacks from property lines
- Vegetative screening and berms
- Orientation of buildings and equipment to minimize external impacts

Long-Term Land Use Implications
Because data centers occupy large tracts with relatively low employment density, they represent a long-term land commitment. Communities must consider:

- Opportunity cost of land use
- Alignment with comprehensive plans
- Potential for phased expansion

Local governments retain significant control in this area through zoning, conditional use permits, and development agreements. The absence of clear policy can lead to reactive decision-making, while proactive planning allows communities to guide where and how development occurs.

Noise and Community Interface

Data centers are not silent facilities. Mechanical systems, particularly cooling equipment and backup generators, produce continuous background noise. However, this noise is typically comparable to other industrial uses and can be effectively managed.

Primary sources include:

- Cooling fans and HVAC systems
- Electrical equipment
- Backup generators (used primarily for testing and emergencies)

Mitigation strategies are well-established and widely used by operators such as Equinix and Digital Realty, including:

Setbacks
Increasing the distance between equipment and property boundaries reduces perceived noise levels.

Acoustic Barriers
Sound walls, enclosures, and building design features can significantly dampen noise transmission.

Equipment Design and Selection
Newer cooling technologies, including liquid cooling systems, can reduce reliance on large external fans.

Local Ordinances and Monitoring
Many jurisdictions require pre- and post-construction noise studies, along with ongoing compliance monitoring.

For communities, noise is a legitimate concern, particularly in areas not traditionally exposed to continuous industrial sound. However, it is also one of the more manageable impacts when addressed through zoning, engineering, and permitting.

Bringing Infrastructure Considerations Together

Infrastructure is where data center opportunities and constraints most clearly intersect. Power, water, land, and community interface are not independent factors. They are interrelated systems that must be planned and managed together.

For Pottawatomie County and the Greater Manhattan region, assets such as service from Evergy and proximity to major generation like the Jeffrey Energy Center provide a foundation. The question is how that foundation is leveraged through policy, coordination, and long-term planning.

Well-structured projects can align with infrastructure capacity and even enhance it. Poorly coordinated development, by contrast, can strain systems and create unintended consequences. The difference lies in the decisions made before a project is approved, not after construction begins.

6. Federal, State, and Local Regulatory Considerations

Kansas has developed one of the more structured and clearly defined regulatory approaches in the United States for large-load electricity customers, including hyperscale data centers. The framework reflects a deliberate policy goal: encouraging economic development while minimizing cost shifting to residential and small commercial ratepayers. In practice, Kansas treats data centers less like traditional economic development projects and more like infrastructure-scale utility customers with long-term implications for the electric grid, transmission system, and local infrastructure.

At the same time, federal policy is increasingly shaping the economics, timelines, and infrastructure strategies associated with large-scale data center development nationwide. As AI-related demand for computing power accelerates, federal policymakers have placed growing emphasis on energy infrastructure, domestic supply chains, and faster project delivery timelines.

For communities in the Greater Manhattan region, these overlapping federal, state, utility, and local policy frameworks are not merely background considerations. Together, they shape project feasibility, infrastructure requirements, negotiation dynamics, and long-term fiscal outcomes.

Emerging Federal Policy Impacts on Data Center Development

Federal policy changes enacted in 2025 are expected to significantly influence future data center development across the United States.

The One Big Beautiful Bill Act (OBBBA), signed into law in July 2025, revised several federal clean energy incentive programs originally established under the Inflation Reduction Act. Most notably, the legislation shortened timelines for certain renewable energy tax credits tied to wind, solar, and related infrastructure projects. For energy-intensive industries such as data centers, these accelerated timelines increase pressure around power generation planning, transmission expansion, and infrastructure delivery schedules.

At the same time, federal policymakers have increasingly identified AI infrastructure and data center capacity as matters of national economic and strategic importance. A July 2025 executive order directed federal agencies to streamline permitting and environmental review processes for large-scale AI infrastructure projects, including associated energy and transmission facilities. Federal agencies have also explored ways to accelerate National Environmental Policy Act (NEPA) reviews and simplify portions of the federal permitting process for major infrastructure projects.

Additional federal regulations tied to "Foreign Entities of Concern" (FEOC) requirements may also affect future energy procurement and infrastructure development strategies. These provisions place additional restrictions on sourcing certain energy and technology components from foreign supply chains, particularly those connected to China, potentially influencing renewable energy development and equipment procurement timelines.

Despite these federal efforts to accelerate infrastructure deployment, state and local governments continue to retain primary authority over zoning, land use, utility coordination, water policy, and local permitting decisions. As a result, communities with available utility capacity, coordinated infrastructure planning, and predictable approval processes may hold a competitive advantage in attracting future investment.

Collectively, these federal policy shifts are increasing the importance of:

- Reliable and scalable power infrastructure
- Transmission availability and grid capacity
- Speed-to-market and permitting certainty
- Long-term energy planning
- Coordinated utility and local government partnerships

For Kansas, these trends may further elevate the value of strategic infrastructure investments, utility coordination, and proactive site readiness efforts.

Ratepayer Protections: Large Load Power Service (LLPS)

The Kansas Corporation Commission (KCC), in coordination with utilities such as Evergy, has established the Large Load Power Service (LLPS) tariff framework for customers with expected demand of 75 MW or greater. This category includes hyperscale data centers, AI compute facilities, and other similarly large industrial loads.

The LLPS structure is designed to ensure that large-load customers are financially self-sufficient within the electric system and do not shift infrastructure costs onto other customers.

Key requirements include:

1. Long-Term Service Commitments
Customers must enter into long-duration contracts (often 12 years or more, with ramp-up periods) that align with the long-lived nature of generation and transmission investments. This provides:

- Revenue certainty for utilities
- Load certainty for grid planning
- Reduced risk of stranded infrastructure costs

2. Minimum Usage or Demand Payments
Customers are billed based on contracted capacity rather than solely on actual usage. This ensures that:

- Utilities recover fixed infrastructure costs regardless of fluctuations in demand
- Capacity reserved for the data center is financially supported even during low-utilization periods

This is particularly important for data centers, which may have variable compute loads but require constant "ready" electrical capacity.

3. Customer-Funded Infrastructure Requirements
One of the most significant provisions is that customers are responsible for infrastructure upgrades required to serve their load. This may include:

- Transmission line upgrades
- Substation construction or expansion
- Interconnection facilities
- In some cases, generation-related infrastructure coordination

This structure shifts capital responsibility away from the general rate base and directly to the project developer.

4. Financial Security and Collateral Requirements
Customers must provide financial assurance, often in the form of collateral or credit support, to protect utilities against default or early termination risk. This is especially important given the scale and long-term nature of these loads.

Collectively, these provisions are intended to ensure that residential and small commercial customers are not subsidizing the infrastructure required to serve large industrial loads, while still allowing utilities to accommodate economic development opportunities.

From a regional standpoint, this framework means that any prospective data center development in Pottawatomie County must be financially structured to fully support its own grid impact.

SB 98 (2025): State-Level Policy Framework for Data Centers

Kansas Senate Bill 98 (2025) further formalizes the state's approach to data center development by establishing both incentives and constraints.

Rather than treating data centers like traditional manufacturing or logistics projects, SB 98 recognizes them as a distinct category of infrastructure-intensive investment requiring tailored policy treatment.

Key provisions include:

1. Prohibition on Discounted Electricity Rates
SB 98 explicitly bars qualifying data center projects from receiving discounted industrial electricity rates that are sometimes available to other economic development projects. This policy:

- Prevents direct subsidization through utility pricing
- Reinforces cost-of-service principles
- Ensures large-load customers pay rates aligned with system impacts

This distinguishes Kansas from states where aggressive rate discounts have been used to attract data center investment, sometimes leading to public controversy over cost shifting.

2. Sales Tax Exemption for Qualified Investments
The legislation provides a sales tax exemption on construction materials and equipment for qualifying projects that meet minimum thresholds, typically including:

- Significant capital investment (often $250 million or more)
- Job creation requirements (generally modest relative to investment size)

This exemption reduces upfront capital costs for developers but does not eliminate ongoing property tax obligations unless separately addressed at the local level.

3. Enhanced Review and Coordination Requirements
For certain qualifying projects, SB 98 introduces additional layers of review involving state-level entities. These reviews are intended to:

- Assess infrastructure readiness
- Evaluate security and risk considerations
- Ensure alignment with broader state economic and energy policy

As federal policy increasingly emphasizes AI infrastructure, domestic supply chains, and grid reliability, this additional state-level review process may become increasingly important for coordinating local development with broader infrastructure and energy planning priorities.

For local governments, this means that while zoning authority remains local, state-level review adds another layer of due diligence for large projects.

Local Authority: Where Outcomes Are Ultimately Determined

Despite the structured federal, state, and utility framework, the most consequential decisions for any potential data center development still occur at the local and regional level. In Kansas, local governments retain significant authority over how and where development occurs, particularly through land-use and fiscal policy tools.

In the Greater Manhattan region, this includes jurisdictions such as Pottawatomie County and surrounding municipalities.

Key areas of local control include:

1. Zoning and Land Use Regulation
Local governments determine:

- Where data centers are permitted (by-right vs. conditional use)
- Density, height, and setback requirements
- Buffering between industrial and residential/agricultural uses
- Compatibility with comprehensive land-use plans

This is one of the most powerful tools for shaping development outcomes before a project is proposed.

2. Development Agreements and Site-Specific Conditions
Local governments can negotiate binding agreements that address:

- Infrastructure contributions beyond utility requirements
- Road improvements and access infrastructure
- Noise, lighting, and environmental mitigation standards
- Phased development conditions tied to performance

These agreements are often where community priorities are translated into enforceable commitments.

3. Infrastructure Coordination
While utilities such as Evergy manage power delivery, local governments often play a coordinating role in:

- Land acquisition and site readiness
- Road and transportation planning
- Water and wastewater system capacity planning
- Interagency coordination across jurisdictions

As federal policy increasingly prioritizes faster infrastructure deployment and transmission expansion, coordination between local governments, utilities, developers, and state agencies becomes increasingly important.

In regions with existing generation and transmission assets — including portions of Pottawatomie County and the broader Manhattan region — aligning land-use planning with long-term energy infrastructure planning may become a significant competitive advantage.

4. Property Tax Policy and Incentives
Local governments also retain authority over:

- Property tax abatements or incentives
- Tax Increment Financing (TIF) districts
- Industrial revenue bonds and related financing tools

These decisions are often the most visible and politically sensitive because they directly affect long-term fiscal outcomes. Incentive structures can significantly influence whether a data center becomes a long-term fiscal contributor or a more neutral addition to the tax base.

How These Layers Interact

The Kansas policy environment is best understood as a four-layer governance structure:

- **Federal Level:** Influences national energy policy, environmental permitting, supply chain requirements, and AI infrastructure priorities
- **State Level (SB 98):** Defines incentive eligibility and establishes baseline constraints such as utility-rate protections and tax exemptions
- **Regulatory/Utility Level (KCC and Evergy):** Structures how large-load customers connect to and pay for grid infrastructure
- **Local Level (Counties and Cities):** Determines land use, siting, infrastructure coordination, and long-term community compatibility

For Pottawatomie County and the Greater Manhattan region, the critical insight is that no single layer determines outcomes. Instead, each layer shapes a different part of the development equation.

A project may be financially viable under federal incentives, state law, and utility tariff structures, but still be shaped — or constrained — by local zoning, infrastructure capacity, water availability, transportation systems, or community priorities.

Bottom Line

Kansas has created a relatively structured and conservative framework for data center development compared to many states. It emphasizes:

- Full-cost responsibility for large-load electricity users

- Limited reliance on utility subsidies
- Defined incentive eligibility rather than open-ended tax competition

However, the most important decisions still occur locally. Communities in the Greater Manhattan region retain significant authority over whether, where, and how data centers are integrated into the landscape.

In practice, this means Kansas policy does not determine outcomes—it defines the boundaries within which local decisions carry the most weight.

7. Common Misconceptions and Clarifications

Public conversation around data centers often compresses a highly technical, rapidly evolving industry into simplified narratives. Some concerns are rooted in older facility designs, while others reflect legitimate planning questions but are sometimes overstated in terms of inevitability or scale. A grounded assessment requires separating technology reality from outdated assumptions and distinguishing between what is *inherent* to data centers versus what is *controllable through design, policy, and siting decisions*.

Water Use: Highly Variable and Increasingly Engineered Downward

A common misconception is that all data centers are inherently large water users. In reality, water consumption is highly dependent on cooling design, climate, and operational strategy.

Historically, many facilities relied on evaporative cooling systems because they were energy efficient. However, over the past decade, the industry has undergone a significant shift toward more water-efficient and, in some cases, water-free designs.

For example:

- Microsoft has deployed next-generation data center designs that significantly reduce or eliminate evaporative water use in new facilities, relying more heavily on closed-loop and chip-level cooling systems.
- Google has publicly committed to improving water stewardship and increasingly uses air-cooled or hybrid cooling designs in water-sensitive regions.
- Equinix has adopted water efficiency targets and reduced reliance on evaporative cooling in high-stress water regions.

Technological evolution has been a major driver of efficiency improvements:

- **Air cooling (early generation):** Relied heavily on ambient air and large mechanical fans; relatively energy inefficient but low water use
- **Evaporative cooling (mid-generation standard):** Reduced energy consumption but increased water demand

- **Closed-loop liquid cooling (current transition):** Circulates coolant in sealed systems, significantly reducing freshwater demand
- **Direct-to-chip and immersion cooling (emerging AI era):** Brings cooling directly to processors, enabling far higher computing density with lower water and energy overhead

As computing workloads have shifted toward artificial intelligence—particularly large-scale training models—these newer cooling technologies have accelerated adoption because traditional air cooling is no longer sufficient for high-density racks.

Importantly, water use is not fixed or inevitable; it is a function of:

- Engineering design decisions
- Local permitting requirements
- Climate conditions
- Operator sustainability targets

For communities, this means water impacts are not predetermined—they are negotiable and design-dependent.

Utility Costs: Structural Protections Exist, but Infrastructure Oversight Still Matters

Another common concern is that data centers will increase residential electric bills. In Kansas, this risk is partially mitigated through regulatory design.

As outlined in the Kansas Large Load Power Service framework administered through Evergy and the Kansas Corporation Commission, large-load customers are required to:

- Enter long-term contracts
- Pay minimum demand charges
- Fund infrastructure upgrades directly attributable to their load

This structure is designed to prevent direct subsidization of data center energy consumption by residential ratepayers.

However, it is important to distinguish between:

- Direct cost shifting (mitigated by Kansas policy)
- System-wide infrastructure investment impacts (still possible)

Across the United States, utilities such as Dominion Energy in Virginia and Georgia Power have experienced significant transmission and generation expansion driven in part by data center growth. In those cases, regulators have had to carefully allocate costs between industrial and residential customers.

Kansas' framework is more restrictive than many states, but ongoing oversight remains important because:

- Transmission upgrades can span multiple customer classes
- Grid expansion costs are often reviewed in rate cases
- Infrastructure built for one large user can have system-wide implications

The key distinction is that Kansas policy largely prevents *direct subsidization*, but does not eliminate the need for careful regulatory review of broader system investments.

Noise: Real but Technically Manageable

Data centers do produce noise, primarily from cooling systems and backup generators. However, this concern is often influenced by outdated perceptions of industrial-scale sound.

Modern facilities—such as those operated by Digital Realty and Equinix—are designed with extensive noise mitigation strategies, including:

- Acoustic enclosures around mechanical systems
- Strategic placement of generators within buildings or behind barriers
- Vegetative berms and sound walls
- Increasing use of liquid cooling, which reduces reliance on large external fan arrays

Typical noise levels are generally comparable to other light industrial uses and are subject to local zoning and environmental standards.

Over time, noise impacts have generally decreased as cooling technologies have evolved:

- Earlier air-cooled facilities relied heavily on large, continuously running fans
- Modern liquid-cooled and hybrid systems reduce external mechanical noise
- Improved computational efficiency reduces heat output per unit of computing power

This means that noise is not a fixed characteristic of data centers, but a design variable that has improved over successive generations of technology.

Land Use: Large Footprints, Increasingly Efficient Density

It is true that hyperscale data centers require significant land areas, particularly for campus-style development and future expansion. However, land use efficiency has improved significantly over time.

Early generation data centers were:

- Less power-dense
- Required larger physical footprints per unit of computing
- Limited in vertical scalability due to cooling constraints

Modern hyperscale facilities operated by companies such as Amazon Web Services and Microsoft now achieve:

- Much higher computing density per square foot
- Multi-story server hall designs in some cases
- More efficient spatial use through modular expansion

Even so, land requirements remain substantial because:

- Electrical substations and transmission corridors require space
- Redundancy systems (backup generators, cooling infrastructure) require buffer areas
- Campus-style expansion planning is built into long-term development models

This is where local policy is decisive. Through zoning, conditional use permits, and development agreements, communities retain full control over:

- Where facilities may locate
- Required setbacks and buffers
- Visual screening and landscaping
- Maximum density and campus size limits

Land use is therefore not dictated by developers alone—it is negotiated and regulated at the local level.

Grid Impact: Increasingly Two-Way and Technically Sophisticated

A frequent misconception is that data centers only place strain on the electric grid. While they are large electricity users, modern data centers increasingly function as *grid-aware infrastructure assets* rather than passive loads.

On the demand side:

- Large facilities can require 75–300+ MW of continuous load
- Concentration of multiple facilities can stress transmission capacity if not planned

However, the relationship between data centers and the grid is evolving due to technological innovation:

1. Predictable Load Profiles
Unlike residential demand, data center load is stable and forecastable, which utilities value for long-term planning.

2. Demand Response and Load Flexibility
Companies like Google and Microsoft are actively developing systems that allow non-urgent computing workloads to shift in time or location, reducing peak stress on the grid.

3. Battery Storage Integration
Many modern facilities include on-site battery systems (UPS systems and increasingly grid-interactive storage), which can:

- Smooth power demand fluctuations
- Provide short-term grid support
- Reduce reliance on backup generation during disturbances

4. Fault Ride-Through Requirements
Utilities and regulators increasingly require large-load customers to remain connected during minor grid disturbances rather than disconnecting, improving overall grid stability.

5. Energy Efficiency Improvements Over Time
A key industry metric, Power Usage Effectiveness (PUE), has steadily improved:

- Early data centers: PUE often 2.0+ (twice the energy used for overhead vs computing)
- Modern hyperscale facilities: approaching 1.1–1.2 in optimized designs

This improvement means that far more of the electricity consumed is used for actual computing rather than overhead cooling and inefficiencies.

For regions like Pottawatomie County, the presence of existing generation and transmission infrastructure—including assets associated with Jeffrey Energy Center and service from Evergy—provides a foundation, but grid impact will still depend heavily on sequencing, interconnection planning, and cumulative load management.

8. Conclusion

Data centers are long-term infrastructure decisions.

Their impacts are shaped not by the market alone, but by:

- Local policy
- Regional coordination
- Project-specific terms

Pottawatomie County and the Greater Manhattan region has:

- Foundational infrastructure
- Institutional assets
- A collaborative framework

Final takeaway:
The question is not whether data centers are good or bad. It is whether specific projects, under specific conditions, align with long-term regional priorities. The decisions made now will determine that outcome.