

UNDERSTANDING DATA CENTERS

An Informational Guide for Benton County, Missouri

Prepared by

Benton County Missouri Economic Development

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Purpose

To provide residents, property owners, businesses, community leaders, and decision-makers with accessible, neutral information about data centers and the considerations that may arise if a project is proposed in Benton County.

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Missouri Context

Missouri has hosted data centers since the early 2000s, with earlier computer-room facilities dating to the 1950s. The Missouri Department of Natural Resources (DNR) reports that roughly 50 data centers had been established in Missouri by the 2020s. Recent advances in artificial intelligence and cloud computing have increased attention on much larger hyperscale facilities.

DNR describes hyperscale data centers as large facilities of 10,000 square feet or more, sometimes housing more than 5,000 servers. DNR notes that these projects can require more than 30 megawatts of power and sites ranging from approximately 10 acres to more than 100 acres, with water needs varying widely depending on energy source and cooling design.

Those figures describe hyperscale development and should not be treated as the expected profile of a potential Benton County project.

Within the Temporary Moratorium on Data Centers within Benton County cites the term, “DATA Center” as 2,500 square feet or more, or has a aggregate information technology capacity of 250 kilowatts or more.

This guide continues to focus primarily on the smaller and mid-sized facilities that may present different infrastructure, workforce, and community considerations.

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Missouri Energy Planning and Ratepayer Protection

In January 2026, Governor Mike Kehoe signed Executive Order 26-02. Among other directives, the order instructed Missouri DNR, in collaboration with the Missouri Public Service Commission, to review energy regulations and infrastructure planning in light of growing power demand from data centers supporting artificial intelligence.

The executive order directs state agencies to consider ratepayer protection, future energy needs, reliable and economical energy solutions, and effective management of Missouri’s natural resources. DNR states that data-center growth is expected to be a major driver of future electricity-demand growth in Missouri, although the size of that impact remains uncertain.

Missouri law also now requires regulated electric utilities to develop special tariff schedules for very large-load customers. Section 393.130.7, RSMo, is intended to help ensure that qualifying large customers bear a representative share of the costs incurred to serve them and that other customer classes are not assigned unjust or unreasonable costs arising from that service.

DNR is coordinating with the Public Service Commission and other state agencies and is scheduled to deliver findings and recommendations related to Executive Order 26-02 to the Governor’s Office by November 30, 2026.

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1. Executive Summary

Data centers are physical facilities that house computing, storage, networking, power, cooling, and security systems used to process, store, and move digital information. They support services used every day, including business applications, online banking, communications, e-commerce, streaming, cloud computing, and artificial intelligence.

Data centers are not all the same. Facilities vary widely in size, purpose, technology, workforce, electricity demand, cooling design, water requirements, and economic impact. A smaller enterprise, colocation, or edge facility can have very different characteristics from a large hyperscale campus.

For Benton County, the most useful approach is therefore project-specific: understand what is proposed, where it would be located, what infrastructure it would require, what benefits it could provide, what impacts it could create, and how those impacts would be addressed.

- Land use and location
- Electricity and utility infrastructure
- Water supply and cooling technology
- Fiber and telecommunications
- Roads, stormwater, and construction activity
- Noise, screening, and neighboring properties
- Emergency services
- Construction and permanent employment
- Private investment and local purchasing
- Taxes, incentives, and public costs

This report does not advocate for or against data center development and does not endorse any specific project. Its purpose is to support fact-based questions and informed decision-making.

This guide is informational only and is not legal, engineering, environmental, utility, tax, or financial advice. Any actual proposal should be reviewed by the appropriate professionals, utilities, agencies, and governmental bodies.

2. What Is a Data Center?

A data center is a building or group of buildings that houses information-technology infrastructure. The equipment inside can store information, run applications, process transactions, support websites and cloud services, and connect users and businesses to digital resources.

Core Components

- Servers - computers that process information and run applications.
- Storage systems - equipment that stores digital information.
- Networking equipment - switches, routers, and related systems that move data.
- Fiber-optic connectivity - high-speed connections linking the facility to other networks and users.
- Electrical systems - utility service, internal distribution, and often backup or redundant power systems.
- Cooling systems - equipment that removes heat generated by computing hardware.
- Security and fire protection - systems intended to protect the facility, equipment, and operations.

The word “cloud” can make digital services sound intangible, but cloud computing depends on physical infrastructure. Data centers are part of that brick-and-mortar infrastructure.

3. Common Types of Data Centers

Data centers can be categorized in several ways, and the categories sometimes overlap. The following are common descriptions rather than rigid classifications.

Enterprise / On-Premises

A facility owned or operated primarily to support one organization's own computing and data needs.

Colocation

A shared facility where businesses lease space, power, cooling, and connectivity instead of building a dedicated facility.

Hyperscale

Very large facilities or campuses designed for massive cloud-scale or high-performance computing workloads.

Edge

Smaller facilities positioned closer to users or devices to reduce latency and support faster processing.

Cloud

Infrastructure used by cloud service providers to deliver computing, storage, and networking resources on demand; cloud infrastructure can be housed in facilities of different sizes.

For a rural county such as Benton County, it is important not to assume that every potential data center would resemble the largest hyperscale projects discussed in national news.

4. What Does a Data Center Require?

Requirements depend on the type, size, design, and workload of the facility. Common needs include:

- An appropriate site with sufficient land and access.
- Reliable electrical service.
- High-capacity fiber connectivity, often with redundancy.
- Cooling systems suited to the equipment and local conditions.
- Water and wastewater capacity when the selected cooling or operational design requires them.
- Road access for construction, equipment delivery, maintenance, and emergency response.
- Stormwater management and site drainage.
- Security, fire protection, backup systems, and operational redundancy.
- A workforce with appropriate electrical, mechanical, facilities, IT, networking, security, and management skills.

A site being available for sale does not by itself make it suitable for a data center. Utility capacity, fiber, land-use compatibility, environmental conditions, infrastructure cost, and timing all matter.

5. Electricity and the Power Grid

Electricity is a central consideration because servers, storage, networking equipment, cooling systems, lighting, security, and other building systems require power. Many data centers operate continuously.

Nationally, data-center electricity use is growing. Lawrence Berkeley National Laboratory estimated that data centers consumed about 4.4% of U.S. electricity in 2023. These are national estimates and should not be used to estimate the requirements of a specific Benton County project.

Questions for a Proposed Project

- What is the expected average and peak electrical demand?
- Which utility would serve the site?
- What capacity is available at the proposed location?
- Would new transmission, distribution, or substation infrastructure be required?
- What redundancy or backup systems are proposed?
- Who would pay for required utility improvements?
- What is the expected construction timeline for those improvements?
- How would the utility evaluate reliability and cost allocation?

The useful question is not simply “Do data centers use a lot of electricity?” It is “What does this specific facility require, can the serving utility support it, and how will required improvements be funded?”

6. Water and Cooling

Computer equipment generates heat, so cooling is essential. Data centers can use air cooling, evaporative cooling, chilled-water systems, direct-to-chip liquid cooling, or combinations of technologies. The design affects both energy and water requirements.

A 2025 Lawrence Berkeley National Laboratory review found that workload-level water use can vary across different combinations of server efficiency, cooling systems, grid characteristics, climate, utilization, and other factors. This illustrates why project-specific information is essential.

Questions for a Proposed Project

- What cooling technology will be used?
- What is the expected water withdrawal and actual water consumption?
- What is the water source?
- Will potable water be used?
- Can reclaimed or recycled water be used?
- What wastewater or discharge will be generated?
- Does the existing system have sufficient capacity?
- What infrastructure improvements are required and who pays for them?

Missouri Department of Natural Resources does not regulate data centers as a separate industry. Depending on a facility’s configuration and operations, applicable air, water, waste, or land-disturbance permits may be required. DNR recommends early discussion with permitting staff.

Missouri DNR Authority

DNR does not have a regulatory definition of “data center.” Instead, it implements and enforces state and federally delegated requirements that protect air, water, and soil. A facility may need air, water, waste, or multiple permits depending on its configuration and operations. DNR recommends that developers meet with permitting staff early in the process.

Local governments are often aware of a proposed project before DNR. According to DNR, a data center is not required to notify the department simply because it is being proposed; DNR generally becomes involved when a project submits an application for a permit that falls within the department's authority.

Air and Backup Generation

Backup diesel generators or on-site power generation can create air emissions. Depending on a facility's potential emissions, an air construction permit and air-quality analysis may be required before construction, and an operating permit may be required after operations begin.

Water Quantity and Major Water Users

Missouri is a riparian-rights state. DNR regulates water quality but generally does not regulate the amount of water used within Missouri, aside from laws concerning export of water out of state and reporting requirements for major water users. A major water user is a facility or individual capable of withdrawing at least 100,000 gallons per day (approximately 70 gallons per minute) from Missouri groundwater or surface-water sources. Major water users must register with DNR and report annual water use.

Water Quality and Land Disturbance

If one acre or more of land will be disturbed, a land-disturbance permit is generally required. A project that discharges water to a body of water may also require a water-discharge permit with monitoring and reporting requirements. DNR has enforcement authority when applicable water-quality requirements are violated.

Noise, Light, Sound and Zoning

DNR does not regulate noise, light, sound, or local planning and zoning. Those matters are generally addressed at the local level. Fish, forest, and wildlife questions fall under the Missouri Department of Conservation.

Public Participation

DNR encourages citizens to participate in applicable environmental permitting processes, including public-comment periods and public meetings or hearings when provided. This is separate from any local land-use or development-review process.

7. Jobs and Economic Impact

For a smaller or mid-sized data center, economic impact should not be measured only by the number of permanent employees. Construction activity, skilled trades, capital investment, local purchasing, wages, and tax effects may also be relevant.

Construction Activity

- General contractors
- Electricians
- HVAC and mechanical trades
- Plumbers
- Heavy-equipment operators
- Fiber and telecommunications workers
- Engineers and architects
- Other skilled trades and suppliers

Permanent Operations

- Data center technicians
- Electrical and mechanical technicians

- Facilities and maintenance personnel
- IT and network specialists
- Security personnel
- Operations and management
- Administrative and support roles

The number of permanent employees can vary significantly with size, design, workload, and automation. For Benton County, the quality of jobs - including wages, benefits, skill requirements, and opportunities for local residents - may be as important as the total number.

Broader Local Effects

- Construction spending
- Local contractors and suppliers
- Lodging and food purchases during construction
- Maintenance and repair services
- Professional services
- Permanent payroll and household spending
- Potential infrastructure investment

Benton County's 2025 average private-industry wage was \$37,445 annually, or \$18.00 per hour, according to Missouri's Economic Research and Information Center. This provides useful local context when evaluating the wage level of jobs promised by a project.

8. Taxes and Local Government Revenue

A data center can involve investment in land, buildings, equipment, and infrastructure. The fiscal effect on local government depends on what property is taxable, how it is assessed, which taxing jurisdictions apply, what incentives or exemptions are used, and what public costs accompany the project.

Missouri Data Center Sales Tax Exemption

Missouri has a Data Center Sales Tax Exemption Program administered by the Department of Economic Development under Section 144.810, RSMo. The program can exempt qualifying projects from certain state and local sales and use taxes on utilities, machinery, equipment, computers, and qualifying construction materials, subject to statutory requirements and program approval.

Current program materials identify, for a qualifying new facility, thresholds including at least \$25 million in new private capital investment, at least 10 new full-time jobs within 36 months, and average wages for the new jobs at or above 150% of the county average wage. The exemption period for a qualifying new project may not exceed 15 years and is subject to statutory limits, including projected net fiscal benefit to the state.

Because statutes, program rules, project structures, and wage benchmarks can change, eligibility and fiscal effects should be confirmed with the Missouri Department of Economic Development for any actual proposal.

Questions for Fiscal Review

- What is the total taxable investment?
- What property taxes are expected and how will they be distributed among taxing jurisdictions?
- What state or local exemptions, abatements, or incentives are requested?
- What public infrastructure or services will be required?
- Who will pay for those improvements?

- What is the estimated net fiscal effect over the life of the project?
- What performance requirements, reporting, or clawback provisions apply to incentives?

The right fiscal question is not only “How much revenue will the project generate?” It is “What revenue remains after applicable exemptions and public costs, and what long-term value does the community receive?”

9. Community Considerations

Economic development includes both opportunity and community fit. A proposed project should be evaluated in the context of its actual site and neighboring properties.

Land Use and Location

Compatibility with surrounding homes, farms, businesses, recreation areas, and long-term development patterns.

Noise

Cooling equipment, transformers, generators, and other equipment; expected sound levels at property lines and nearby properties; proposed mitigation.

Traffic and Construction

Heavy-equipment and construction traffic, road condition, access, and ongoing operational traffic.

Appearance and Screening

Building scale, lighting, fencing, landscaping, setbacks, and visibility from roads or neighboring properties.

Stormwater

Impervious surface, drainage, detention, erosion control, and applicable permits.

Emergency Services

Fire protection, EMS, law enforcement, hazardous-material or battery considerations, training, equipment, and response access.

Infrastructure

Electricity, fiber, roads, water, wastewater, and the responsibility for upgrades.

Workforce and Local Business

Opportunities for local residents, contractors, suppliers, and service providers.

These considerations do not mean a project is automatically appropriate or inappropriate. They identify the information needed to understand how a particular project could affect a particular location.

10. What a Data Center Could Mean for a Rural County

National discussion often focuses on the largest hyperscale projects. Benton County should not use those projects as the automatic model for every data center proposal.

A smaller or mid-sized facility may require less land, electricity, water, and workforce than a hyperscale campus, but it may also provide fewer permanent jobs or a different level of investment. The tradeoffs should be evaluated using the actual project numbers.

A Rural-County Lens

- Can existing utilities serve the project without shifting unreasonable costs or risks to other users?
- Can required infrastructure be delivered on a realistic timeline?
- Is the water source appropriate for the proposed cooling design?
- Does the project fit the surrounding land uses and character of the site?
- Will roads and emergency services need upgrades?
- Are the permanent jobs a good match for the regional workforce, and can training partnerships (apprenticeship) help?
- What local businesses and contractors can participate?
- What are the net tax and fiscal effects after exemptions and public costs?
- Can identified impacts be addressed through design, agreements, permits, or enforceable standards?

A rural county does not need to decide whether “data centers” as a category are good or bad. It needs enough information to decide whether a specific project is a good fit for a specific site and community.

11. How Communities Evaluate a Proposed Data Center

1. Define the proposal. Identify the developer, operator, facility type, acreage, building size, phases, schedule, and expected lifespan.
2. Evaluate the site. Review surrounding uses, access, topography, floodplain, environmental conditions, setbacks, screening, and future development compatibility.
3. Verify utility requirements. Obtain project-specific electricity, fiber, water, wastewater, and backup-generation requirements and have the relevant providers evaluate capacity.
4. Identify infrastructure improvements. Determine what must be built or upgraded, the cost, timeline, ownership, maintenance responsibility, and who pays.
5. Review operational impacts. Evaluate noise, lighting, cooling, generators, stormwater, emissions or permits, water use, traffic, and emergency response.
6. Quantify economic benefits. Verify capital investment, construction activity, permanent jobs, wages, local purchasing, and workforce-development opportunities.
7. Complete a fiscal analysis. Estimate taxes, exemptions, incentives, public costs, infrastructure obligations, and net long-term fiscal effect.
8. Identify applicable laws, permits, and standards. Confirm requirements with legal counsel and the appropriate local, state, utility, and regulatory entities.
9. Provide for informed public discussion. Present project-specific facts in understandable terms and create opportunities for relevant questions and input.
10. Document commitments. If a project proceeds, clearly document responsibilities, performance requirements, mitigation measures, timelines, and enforcement mechanisms.

Evaluation should begin with facts about the actual proposal - not with assumptions based on the largest or most controversial projects elsewhere.

12. Benton County Data Center Evaluation Worksheet

The following worksheet is intended as a starting point for staff, commissioners, utilities, and professional advisers. It is not a substitute for legal, engineering, environmental, utility, or financial review.

Project Information

Item	Project-Specific Information
Developer / Applicant	
Operator (if different)	
Project Name	
Proposed Location / Parcel(s)	
Acreage	
Building Square Footage	
Project Phases	
Estimated Construction Start	
Estimated Commercial Operation	

Investment and Employment

Item	Project-Specific Information
Land Investment	
Building / Site Investment	
Equipment Investment	
Total Private Capital Investment	
Estimated Construction Jobs	
Permanent Full-Time Jobs	
Average Wage	
Benefits	
Skills / Certifications Required	
Local / Regional Workforce Plan	

Electricity and Fiber

Item	Project-Specific Information
Serving Electric Utility	
Average Electrical Demand (MW)	
Peak Electrical Demand (MW)	
New Substation Required?	
Transmission / Distribution Upgrades	
Backup Generation / Storage	
Estimated Utility Upgrade Cost	
Who Pays?	

Fiber Providers / Routes	
Redundant Fiber Available?	

Water, Cooling, and Wastewater

Item	Project-Specific Information
Cooling Technology	
Water Source	
Estimated Withdrawal	
Estimated Consumption	
Potable Water Required?	
Reclaimed Water Option?	
Wastewater / Discharge	
Existing System Capacity	
Drought / Contingency Plan	
Required Infrastructure / Who Pays?	

Site and Community

Item	Project-Specific Information
Current Land Use	
Adjacent Land Uses	
Setbacks / Buffers	
Expected Noise Levels	
Noise Mitigation	
Lighting / Screening	
Stormwater Plan	
Construction Traffic	
Permanent Traffic	
Emergency Services Review	
Fire Protection Requirements	

Taxes, Incentives, and Fiscal Impact

Item	Project-Specific Information
Estimated Taxable Real Property	
Estimated Taxable Personal Property	
Estimated Property Tax Revenue	

State Incentives / Exemptions	
Local Incentives / Abatements	
Public Infrastructure Costs	
Ongoing Public Service Costs	
Estimated Net Fiscal Impact	
Performance / Reporting Requirements	

Decision Record

Item	Project-Specific Information
Primary Potential Benefits	
Primary Potential Concerns	
Mitigation Measures	
Additional Information Needed	
Professional Reviews Completed	
Public / Stakeholder Input	
Conditions or Agreements	
Final Determination	

13. Conclusion

Data centers are part of the physical infrastructure supporting the modern digital economy. They can represent private capital investment, construction activity, skilled employment, local purchasing, and potential tax revenue. They can also require substantial utility and site infrastructure and raise legitimate questions involving electricity, water, cooling, land use, noise, stormwater, emergency services, and public costs.

There is no one-size-fits-all data center. A smaller enterprise, colocation, or edge facility may differ substantially from a hyperscale campus. For Benton County, decisions should therefore be based on the specific characteristics, location, requirements, benefits, and impacts of the project actually proposed.

Learn the facts. Ask informed questions. Evaluate the actual project.

Benton County Missouri Economic Development's role in providing this guide is educational: to help residents, property owners, businesses, community leaders, and decision-makers understand the subject and support thoughtful discussion about Benton County's future.

14. Sources and Additional Resources

Order and Ordinance of County Commission of Benton County, Missouri - An Order and Ordinance Enacting A Temporary Moratorium on Data Centers Within Benton County, Missouri For Purpose of Due Diligence

Missouri Department of Economic Development - Data Center Sales Tax Exemption Program - Current program overview, application materials, guidelines, and forms.

Revised Statutes of Missouri, Section 144.810 - Statutory framework for qualifying data storage center sales and use tax exemptions.

Lawrence Berkeley National Laboratory - 2024 United States Data Center Energy Usage Report - National data-center electricity-use estimates and projections.

Lawrence Berkeley National Laboratory - The Water Use of Data Center Workloads (2025) - Peer-reviewed analysis of factors driving variation in data-center water use.

Missouri Department of Natural Resources - Data Centers - Missouri environmental permitting overview, including air, water, waste, land disturbance, and major water-user information.

Missouri Economic Research and Information Center - County Average Wages - 2025 Benton County wage data used for local workforce context.

For an actual project, current statutes, regulations, utility requirements, program guidelines, and local ordinances should be verified at the time of review.

Prepared August 2026. This document is intended as a general informational resource and should be updated as laws, technologies, programs, and local conditions change.

Missouri Department of Natural Resources - Data Centers. Current overview of DNR authority, permitting, water use, energy planning, public participation, and local issues.

Missouri Secretary of State - Executive Order 26-02 (Jan. 13, 2026). State directives concerning AI, data-center energy demand, ratepayer protection, natural resources, economic development, and workforce.

Revised Statutes of Missouri, Section 393.130.7. Large-load electric tariff provisions intended to allocate costs appropriately and protect other customer classes.

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