

Section 7.21 Data Center

7.21.01. PURPOSE AND INTENT

The purpose of these regulations is to establish reasonable standards for the siting, construction, operation, maintenance, and decommissioning of data center facilities within Custer County, Nebraska, in order to:

1. Promote orderly economic development consistent with the Custer County Comprehensive Plan;
2. Protect agricultural land uses and rural character;
3. Minimize adverse impacts to residential properties, public facilities, and agricultural operations;
4. Protect groundwater resources and encourage water conservation;
5. Regulate operational impacts including noise, lighting, traffic, and utility infrastructure;
6. Ensure coordination with public utilities, emergency services, and applicable regulatory agencies;
7. Provide objective standards based upon facility scale and electrical demand; and
8. Protect the public health, safety, and welfare pursuant to Nebraska Revised Statutes Sections 23-114.03 and related statutory authority.

7.21.02 DEFINITIONS

Air-Cooled Systems: Any facility that relies solely on dry-air cooling system.

Ambient Noise Level: The all-encompassing background sound present at a given location prior to operation of the facility, measured in decibels (dBA).

Backup Generation: shall mean electrical generation equipment intended solely for emergency electrical service, maintenance testing, or temporary interruption of utility service and shall not serve as the normal primary power source for the facility.

Blockchain: A technology that records transactions in a distributed, immutable ledger using cryptography to ensure security and transparency.

Closed-Loop Liquid Cooling System: A cooling architecture in which a liquid coolant circulates entirely within a permanently sealed, continuous internal piping network to absorb and dissipate heat. This system recycles the fluid indefinitely and, by design, requires zero continuous freshwater consumption, zero evaporative water loss, and zero continuous wastewater discharge during standard operations.

Cryptocurrency Mining Operation: shall mean a commercial operation engaged in the validation of blockchain transactions, digital asset mining, blockchain processing, or similar computational activities utilizing specialized computing equipment including bitcoin and having a peak electrical demand of one megawatt (1 MW) or greater, such as bitcoin.

Data Center: shall mean a facility primarily engaged in the storage, processing, hosting, management, crypto mining or transmission of digital data, cloud computing operations, artificial intelligence processing, high-performance computing, or related digital infrastructure.

Data Center, Ancillary: (or micro centers) Smaller, localized server rooms (occupying less than 25% of a building's gross floor area) permitted as an ancillary use primary commercial or office functions that directly support on site commercial or business operations. Ancillary uses or structures secondary and incidental to a Data Center use, including but not limited to: administrative, logistical, fiber optic, storage, and security buildings or structures. Typically consume under 1 megawatt (MW) of power.

Data Mining:

The practice of analyzing large datasets to identify patterns, trends, or useful information.

Decibel (dB): is a measurement of how intense (loud) a sound is. The decibel scale is logarithmic, meaning that a 10 dB increase in noise level corresponds to a tenfold increase in sound intensity. Decibels are measured using a decibel meter. Decibel ratings are expressed as dBA, or A-weighted. This simply means this is how loud a sound is perceived by the human ear.

Decommissioning: The removal of facilities, equipment, structures, and improvements associated with a data center and restoration of the site in accordance with an approved decommissioning plan.

Direct-to-Chip Liquid Cooling: A highly efficient, specialized closed-loop cooling configuration where a liquid coolant is piped directly to sealed metal cold plates mounted directly on top of heat-generating electronic processing components (such as Central Processing Units or Graphics Processing Units) to capture and transfer heat away via direct conduction, without relying on evaporative fluid loss or ground water consumption.

Electrical Demand:

The maximum anticipated electrical load of a data center facility measured in megawatts (MW).

Facility Operator: The person, corporation, partnership, limited liability company, or other legal entity responsible for the operation, maintenance, and compliance of the data center facility.

Frequency: The rate at which alternating current (AC) electricity cycles, measured in Hertz (Hz). The standard electric grid frequency in the United States is 60 Hz.

Large Facility: shall mean a cryptocurrency mining operation or data center facility having a peak electrical demand greater than twenty megawatts (20 MW).

Medium Facility: shall mean a cryptocurrency mining operation or data center facility having a peak electrical demand greater than ten megawatts (10 MW) and up to twenty megawatts (20 MW).

Non-Battery Backup Generation: Any backup power generation system that does not rely solely on battery storage, including but not limited to diesel generators, natural gas generators, or other fuel-powered generation systems used to provide emergency or standby power.

Non-Participating Property: Real property not subject to a lease, easement, purchase agreement, or other written agreement with the applicant or operator for development of the data center facility.

Public Use: Schools, churches, parks, libraries, hospitals, government buildings, community centers, and similar publicly accessible facilities.

Residential Dwelling: Any occupied single-family, two-family, or multi-family residential structure.

Self-Regulated Power: any on site generation, utilizing dedicated power plants including but not limited to natural gas generators, fuel cells (batteries/solar), small modular reactors (nuclear) operating outside the standard public utilities commission.

Small Facility: shall mean a cryptocurrency mining operation or data center facility having a peak electrical demand greater than one megawatt (1MW) up to ten megawatts (10 MW).

Substantial Operation: Operation of a facility at or above 25 percent of its approved electrical load capacity for a minimum of eight (8) hours per day, for normal data-processing purposes. Temporary, intermittent, testing, maintenance, emergency, or standby operation shall not constitute substantial operation.

Transmission Infrastructure: Electrical substations, transmission lines, switching stations, transformers, and associated utility improvements necessary to deliver electrical service to the facility.

7.21.03 Legislative Findings

The Custer County Planning Commission and Board of Supervisors find that the size and electrical demand of a data center facility are directly related to the intensity of its development, infrastructure requirements, and potential impacts on surrounding properties. Accordingly, larger data center facilities require greater setbacks to promote compatibility with agricultural uses, protect neighboring properties, preserve rural character, and safeguard for the public health, safety, and welfare.

1. **Transmission Infrastructure.** Larger data center facilities require greater electrical service and supporting infrastructure, including substations, transmission lines, and utility improvements, resulting in greater land-use impacts.
2. **Visual Impacts.** Larger facilities include more buildings, mechanical equipment, lighting, and utility infrastructure, creating greater visual impacts than smaller facilities.
3. **Agricultural Compatibility.** Agriculture is the primary land use within Custer County and represents an essential component of the County's economy, heritage, and Comprehensive Plan. Larger data center facilities have a greater potential to conflict with agricultural operations and rural land uses, making increased setbacks appropriate.
4. **Infrastructure Demands.** Larger facilities place greater demands on roads, utilities, emergency services, drainage systems, and other public infrastructure.
5. **Operational Intensity.** Operational impacts, including noise, lighting, backup generation, cooling systems, and utility infrastructure, generally increase with facility size and electrical demand.
6. **Graduated Setbacks.** A tiered setback system based on electrical demand is a reasonable and objective land-use planning tool because larger facilities create greater impacts and require increased separation from residential, agricultural, and public uses to protect the public health, safety, and welfare.

7.21.04 APPLICABILITY

1. Data Centers shall be permitted only through approval of a Conditional Use Permit within the AG-T and AG-G Zoning Districts.
2. The County further finds that Nebraska law preserves local authority to regulate land use compatibility, siting, setbacks, infrastructure impacts, noise, lighting, traffic, drainage, emergency services, and protection of agricultural uses through zoning and conditional use permitting.
3. All Data Centers shall comply with the standards contained in this Section in addition to all other applicable federal, state, and local regulations.
4. Nothing in these regulations shall prohibit the County from imposing additional reasonable conditions through the Conditional Use Permit process where necessary to protect public health, safety, infrastructure, or neighboring land uses.
5. Custer County reserves the right at any time to hire a 3rd party professional at the property owners' expense to review elements of the project.
6. Self-regulated power sources are prohibited.

7.21.05 CLASSIFICATION OF DATA CENTERS

Classification	Capacity	Description
Small Data Center	1MW to 10MW	Smaller-scale facilities with limited off-site impacts.
Medium Data Center	Greater than 10MW up to 20MW	Facilities with increased infrastructure and operational impacts.
Large Data Center	Greater than 20MW	Regional or campus-scale developments with substantial Utility and land-use impacts.

7.21.06 DEVELOPMENT SETBACKS BY CLASSIFICATION

The minimum setbacks for data centers shall be as follows:

Data Center Classification	Non-Participating Residential Dwelling	Public Use
Small (Up to 10 MW)	One-quarter (1/4) mile	One-quarter (1/4) mile
Medium (Greater than 10 MW up to 20 MW)	One-half (1/2) mile	One-half (1/2) mile
Large (Greater than 20 MW)	Three (3) miles	Three (3) miles

7.21.07 COOLING AND WATER CONSERVATION REGULATIONS

1. **Mandatory Cooling Systems.**
All data processing facilities shall utilize direct-to-chip liquid cooling or a closed-loop liquid cooling system. Any cooling system utilizing municipal water or groundwater that consumes more than fifty (50) gallons per minute under normal operating conditions is prohibited.
2. **Prohibited Cooling Systems.**
Air-cooled systems, once-through cooling systems, open-loop cooling systems, and any cooling configuration that requires freshwater consumption in excess of the limits established in number one (1) or continuous wastewater discharge as part of normal operations are prohibited.

7.21.08 DATA CENTER APPLICATION REQUIREMENTS

Any applicant requesting approval for a Data Center shall submit a complete application containing sufficient information. In addition to the requirements of the Custer County Zoning Regulations and applicable Conditional Use Permit procedures, the applicant shall provide the following information.

1. Custer County shall require a pre-submittal process to review the proposed application prior to proceeding with the application process;
2. Applicant name(s) and contact information. The applicant must also identify on the application, if different than the applicant, the record owner of the property, the occupant or lessee of the property, and the operator of the data center. If the applicant, property owner, occupant, lessee, or operator is a limited liability company (LLC), the application shall include the legal name of the entity, the names of the members, managers, or officers as listed with the Secretary of State, and the name of the registered agent.
3. A narrative describing the proposed project, including a description of how the project meets market demand, the facility's processing capacity, and the facility's anticipated water and electricity needs.
4. A noise impact study prepared in accordance with Section 7.21.09 (4)(c).
5. A professionally drawn site plan, drawn to scale and stamped by a licensed professional engineer, showing the location and dimensions of all existing and proposed structures, screening, fencing, lighting, electrical connections, property lines, and roadway access.
6. A map of the project area showing all single-family and multi-family dwellings, schools, churches, synagogues, and other similar religious institution or structures, and public parks located within one (1) mile of the exterior boundaries of the property where the data center will be located.
7. All application fees, including the required fees for a Conditional Use Permit and zoning permits in the amounts determined by the Board of County Supervisors.
8. The applicant shall provide a written agreement from the applicable electric utility or power supplier stating that agricultural electrical demand shall take precedence over the electrical demand of the proposed data center during periods of limited electrical capacity or curtailment.
9. Copies of signed permits or other documentation that indicates compliance with all applicable State and Federal laws.
10. Natural Resource District Review

- a) The applicant shall submit the project to the applicable Natural Resources District for review and comment.
- b) Written comments received from the NRD may be considered during the Conditional Use Permit review process.

11. Abandonment and Decommissioning Plan

7.21.09 Electric Utility Coordination Prior to approval of a Conditional Use Permit, the applicant shall submit written acknowledgment from the electric utility eligible to serve the proposed operation confirming that the applicant has applied for electric service or interconnection.

1. The operator shall be solely responsible for all costs, fees, congestion charges, system upgrade costs, transmission improvements, substation improvements, interconnection expenses, and other infrastructure costs directly or indirectly attributable to the project or necessary to serve the facility, as determined by the applicable electric utility, utility tariffs, interconnection agreements, and Nebraska law.
2. No costs attributable to the project shall be shifted to existing retail ratepayers, taxpayers, or the County.
3. The County shall require written verification from the serving utility confirming that the project will not create unreasonable adverse impacts upon existing electrical reliability, irrigation load service, emergency operations, or existing retail customers.
4. The power district will have the right to immediately suspend, interrupt, or mandate the reduction of electrical service and operation if needed.

7.21.10 Design Standards

1. **Lighting Standards**
Exterior lighting shall be strictly shielded and directed downward to eliminate glare and light pollution onto adjacent properties and public rights-of-way.
2. **Height Requirements.** All buildings, structures, and appurtenances associated with a data center facility shall comply with the maximum height requirements of the applicable zoning district, unless otherwise provided in these regulations.
3. **Setback Requirements.** All data center facilities shall comply with the minimum setback requirements of the applicable zoning district, except where greater setbacks are required by these regulations.
4. **Noise.** Data center facilities shall be designed, constructed, and operated so that noise generated by the facility does not exceed the following limits when measured at the property line of the nearest non-participating residential dwelling or Public Use:

Measurement	Maximum Noise Level
A-Weighted Sound Level (dBA)	55 dBA
C-Weighted Sound Level (dBC)	70 dBC

- a. Noise measurements shall be obtained using a calibrated sound level meter capable of measuring both A-weighted (dBA) and C-weighted (dBC) sound levels.
- b. Noise generated by cooling equipment, transformers, backup generators, mechanical equipment, and all other facility operations shall comply with the limits established in this Section.
- c. Prior to approval of a Conditional Use Permit, the applicant shall submit a noise impact study prepared by a qualified independent acoustical engineer. The study shall evaluate the anticipated operational noise levels of the proposed facility, including cooling equipment, transformers, backup generators, and other major mechanical equipment, and shall demonstrate compliance with the noise standards established in this Section. The County may require additional information or revisions to the study as reasonably necessary to evaluate compliance with this Section.
- d. Routine testing of backup generators shall occur only between **8:00 a.m. and 6:00 p.m.**, except during actual utility outages, maintenance required for system reliability, or emergency conditions.
- e. If the County determines that the facility exceeds the permitted noise limits after commencing operations, the operator shall implement corrective measures and demonstrate compliance with this Section within a reasonable period established by the County.
5. Floodplain Restrictions. Data Centers and associated principal structures shall not be located within designated FEMA flood hazard areas.
6. Security fencing. A secured chain link fence at least six (6) feet in height shall be constructed and maintained around the entire perimeter of the facility to prevent unauthorized entry onto the property or into the facility.
7. Site Maintenance
The operator shall maintain the facility in a safe and orderly condition including:
 - a. Trash and debris removal;
 - b. Vegetation management
 - c. Compliance with Nebraska noxious weed laws;
 - d. Maintenance of fencing and security measures; and
 - e. Ongoing compliance with approved site plans
 - f. No trees or shrubs shall be planted or maintained within three hundred (300) feet of any data center building, substation, transformer, switchyard, or other associated electrical infrastructure. This requirement is intended to provide adequate fire protection, emergency access, and site security.
8. Battery energy storage systems (BESS) intended to serve a data center facility are prohibited.

9. Non-Battery Backup generation systems may be utilized for utility interruptions, maintenance testing, and emergency conditions. Non-battery backup generations systems, including diesel or natural gas generators, shall be subject to noise, air quality, safety, and operational requirements established by the County and applicable regulatory agencies.

7.21.11 Emergency Action Plan

An emergency action plan shall be submitted to the Custer County Zoning Administrator and the Custer County Emergency Manager for review and approval.

The plan shall include, at minimum:

- a. 24-hour emergency contact information
- b. Access points and circulation routes
- c. Location of shutoffs and utility controls
- d. Lock box and/or Knox Box access shall be installed and provided to local fire districts.
- e. The facility operator shall provide, at no cost to local emergency response agencies, necessary fire suppression, hazardous materials response, and safety equipment, as determined by the local emergency response agencies, prior to facility operation and throughout its operation.
- f. The facility operator shall provide annual training and coordination with local fire departments and emergency responders regarding site-specific emergency procedures, facility operations, and response protocols.
- g. The applicant shall coordinate with Custer County Emergency Management to ensure there is adequate radio coverage for emergency responders outside and within the building based upon the existing coverage levels of the Custer County Public Safety Radio Communications Systems as needed to meet compliance at applicant's expense.

7.21.12 ABANDONMENT AND DECOMMISSIONING

a) Abandonment. A facility shall be deemed abandoned if operational data-processing activity ceases for a continuous period of twelve (12) months and the site shall be returned to a compatible state according to the surrounding property.

OR

Abandonment. A facility shall be deemed abandoned if it fails to maintain continuous, substantial data-processing operations for twelve (12) consecutive months. Temporary, intermittent, testing, maintenance, emergency, or nominal operation shall not interrupt the twelve (12) month period. The facility operator shall demonstrate continuous, substantial operation. Upon abandonment, the site shall be decommissioned and returned to a compatible state consistent with the surrounding property and the approved decommissioning plan.

A facility shall be deemed abandoned if it fails to maintain substantial data-processing operations for twelve (12) consecutive months. Temporary, intermittent, testing, maintenance, emergency, or nominal operation shall not interrupt or reset the twelve (12) month period. The facility operator shall demonstrate substantial operation. Upon abandonment, the site shall be decommissioned and

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returned to a compatible state consistent with the surrounding property and the approved decommissioning plan.

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Abandonment. A facility shall be deemed abandoned if data-processing operations cease for a period of twelve (12) consecutive months. Temporary, intermittent, testing, maintenance, emergency, or nominal operation shall not interrupt or reset the twelve (12) month period. Upon abandonment, the site shall be decommissioned and returned to a compatible state consistent with the surrounding property and the approved decommissioning plan.

b) 100% Operator Liability. Within one hundred eighty (180) days after abandonment, the operator of the facility shall bear one hundred percent (100%) of the legal and financial liability to completely decommission the site. This includes the mandatory removal of all non-utility equipment, specialized computing machinery, specialized container units, substations, transformers, and cooling infrastructure, and restoring the real property to a clean, safe, and orderly vacant condition at their sole expense.

c) Mandatory Decommissioning Surety Bond. Prior to executing a conditional use permit or building on-site, the operator shall file with the County Clerk a performance surety bond, ~~an irrevocable letter of credit~~, or an escrow account in an amount equal to one hundred fifty percent (150%) of the estimated cost of full site decommissioning and restoration, as verified by an independent structural engineer licensed in Nebraska. This bond shall secure the operator's performance under subsection (B) and ensure the county incurs zero clean-up liability.

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d) Periodic Re-evaluation and Inflation Adjustments. To ensure the financial security remains sufficient against the effects of inflation, technological changes, and fluctuating salvage values, the decommissioning cost estimate and accompanying surety amount shall be re-evaluated every three (3) years from the date of the initial permit issuance.

e) Operator Obligation. The operator shall, at their sole expense, retain an independent professional engineer licensed in the State of Nebraska to conduct the triennial re-evaluation and submit an updated, certified decommissioning cost report to the Board of Supervisors.

f) Adjustments to Financial Assurance. If the updated engineering report indicates that the cost of decommissioning has increased, or if the Consumer Price Index (CPI) for the Midwest region reflects a cumulative upward inflationary shift, the operator shall increase the value of the surety bond, ~~letter of credit~~, or escrow account to match 150% of the newly established cost within sixty (60) days of the report's approval by the County. Failure to secure the adjusted financial assurance within this timeframe shall constitute a material violation of the Conditional Use Permit and subject the facility to immediate operational shutdown.

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7.21.13 County Authority

1. If the property owner or applicant fails to complete site restoration or comply with any portion of an approved Conditional Use Permit, Custer County may utilize any lawful tool and

applicant/property owner's financial guarantee to complete required work at property owner's expense.