



Preparing Ida County's Data Center Design Guidelines

A design-and-siting framework that lets good projects proceed — on the County's terms, not a developer's.

Prepared for the Ida County Board of Supervisors & Planning and Zoning staff

The County already made the hard call

On June 30, 2026 the Board adopted a moratorium on new data center development: time to understand how these facilities affect water, power, roads, and rural character before approving them.

1

Moratorium adopted

June 30, 2026. The clock toward lifting it is already running.

2

The open questions

Water, noise, farmland, and “how many are coming?” A pause holds the questions; it doesn’t answer them.

3

Standards in place

A data-center-specific guideline lets the County lift the moratorium on its own terms, with the answers written down.

The moratorium bought time. Standards decide what that time buys: the County can set its rules now, rather than react to the first application that lands.

Ordinary zoning was never built for this use

A data center looks like a warehouse and behaves like heavy infrastructure. Six impacts generic commercial or industrial zoning never anticipated:

Water

01

Cooling can use as much water as thousands of homes — or almost none. It depends entirely on design.

Noise

02

Continuous cooling and generator testing carry low-frequency sound across quiet rural nights.

Power

03

Small-city loads trigger new substations and grid upgrades the County can't regulate directly.

Farmland

04

Large footprints can fragment productive cropland and the drainage it depends on.

Roads

05

Construction traffic wears out rural roads and bridges the County has to maintain.

Cumulative

06

Per-project rules never answer the real question: how many can the County carry?

A data-center-specific guideline, already drafted

PathOne has drafted a full, Iowa-benchmarked design guideline for the County to review, react to, and finish. Every standard and number behind today’s briefing lives in the document, section by section.

Siting & farmland protection	Two-path setbacks	50 MW scale tranches
Noise abatement	Water performance standard	Power, generation & storage
Architecture & screening	Lighting (dark-sky)	Stormwater & environment
Roads & infrastructure	Emergency & safety	Decommissioning & bonds
Community benefit	Transparent review process	Cumulative county-wide limits

Highlighted — today’s two focus topics.

THE DOCUMENT

Draft v0.3 — 18 sections

- Benchmarked to Linn County EU-3 — Iowa’s only comprehensive data-center ordinance
- Adopted precedents cited throughout
- “County input needed” boxes where the policy calls belong to the Board
- Clear about what is new and what is adopted elsewhere

Two entitlement paths, one non-negotiable rule

Decibels always govern. Whichever path applies, the facility must meet the day/night noise limits at the receptor, and must modify site and building design until it does. A setback never waives the noise standard.

PATH A

On existing industrial-zoned land

- The underlying industrial setback prevails: no bigger buffer just for being a data center.
- Noise limits still must be met; site layout and building design are modified until they are.
- Where industrial land abuts R-1 homes, the setback on that line increases to a negotiated distance that meets the noise limits and buffers the homes.

PATH B

When a rezone is required

100 ft

to property lines
Linn County: 200 ft

500 ft

to residential
Linn County: 1,000 ft

Half the Linn standard, deliberately. Oversized buffers force giant land assemblages; halving keeps rezoned projects modest instead of pushing them toward mega-sites.

Precedent: Linn County EU-3 (adopted Feb 2026). The half-standard and the R-1 negotiated increase are Ida County policy choices.

Capped at a 25 MW maximum per parcel

There is no minimum size and no intermediate tiers. Projects are capped at a 25 MW maximum on any single parcel, and no single parcel hosts an unbounded campus. Phased and multi-parcel projects count in the aggregate, so the maximum can't be split around.

MAXIMUM

25 MW

Per parcel. Nothing larger is permitted.

NO MINIMUM

Any size

No floor on project size; requirements scale with actual capacity.

STRUCTURE

No tiers

No intermediate tiers; regulation is proportionate to actual capacity.

ONE REVIEW TRACK

All sizes

Every project gets conditional use, site plan, design review, independent peer review, and cumulative-capacity findings.

Basis: Linn County EU-3 and Nebraska's 20 MW large-load line inform the review approach; the 25 MW maximum is an Ida County policy choice.

Design exists to hit the noise numbers

Low-frequency sound (dBC) matters as much as loudness (dBA) in a farm county: it carries at night and can affect livestock. Limits are measured at the nearest home, above baseline ambient, not at the fence line.

Receiving property	dBA limit	dBC limit
Residential — daytime	55 dBA	65 dBC
Residential — nighttime	50 dBA	65 dBC
Non-residential adjacent	65 dBA	75 dBC

A setback never waives these numbers — decibels always govern.

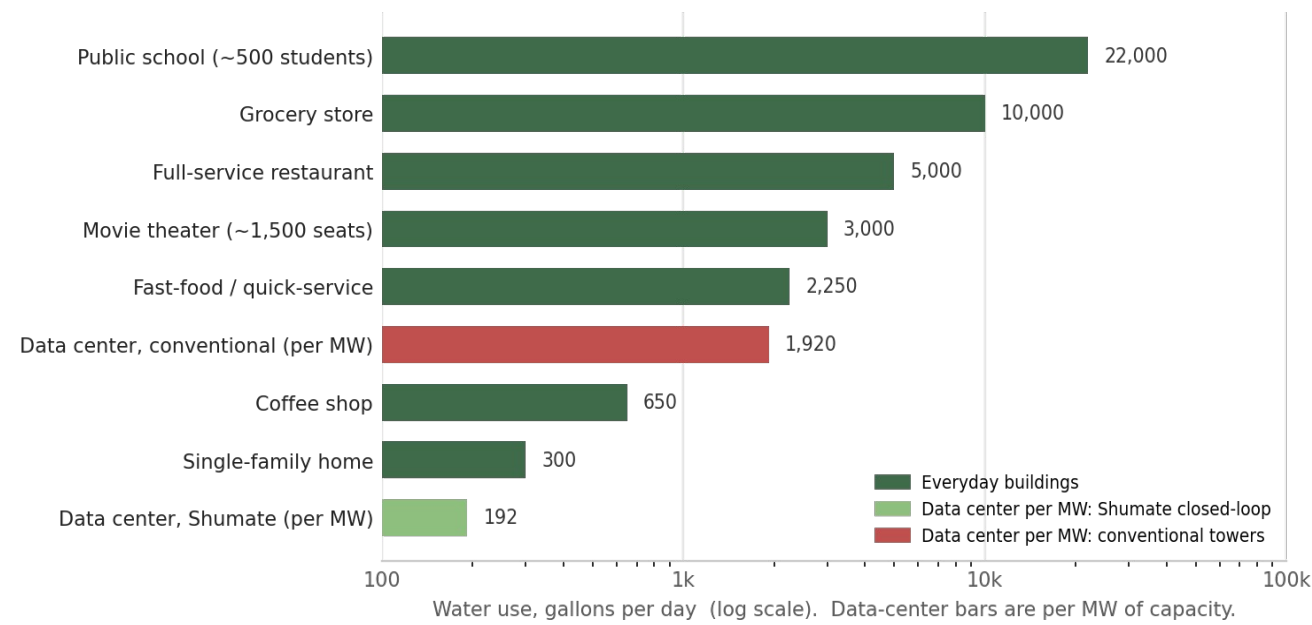
How the standard is met

- Setbacks and equipment placement
- Acoustic enclosures and quieter equipment
- Berms and dense landscape buffers
- Generator testing on weekdays only, barred on declared bad-air days
- Independent studies before and after construction, re-tested every 5 years for the life of the facility

Precedent: Linn County EU-3 (adopted); St. Louis Armory bad-air-day generator limit (adopted condition). Day/night split added for rural night quiet.

The water question is a cooling question

The draft sets a performance standard: closed-loop / non-evaporative cooling, benchmarked to the Shumate hybrid loop. The comparison shows why it matters.



THE 10× SWING

1,920
gallons per MW per day, conventional water-cooled cooling

192
gallons per MW per day, the Shumate closed-loop, about a 90% reduction

Driven by the cooling choice alone.

Data-center figures are per MW of capacity, from the PathOne cooling-system matrix; everyday comparators from published nonresidential water-use benchmarks. Order-of-magnitude planning figures, not site-specific guarantees.

Buildings designed to belong in an ag landscape

PathOne's project designs use an agricultural vernacular — muted earth-tone materials, agrarian massing, screened equipment, no corporate branding. The same approach can make an Ida County facility read as farm, not factory.



Rendering — site aerial, equipment in screened bays



Rendering — from the county road

Design principles

- Agrarian massing & rooflines
- Muted, non-reflective earth tones
- Articulated walls — no blank boxes
- All rooftop and ground equipment screened
- No corporate branding on facades

Rendering design studies for an Iowa site — illustrative of the standards in draft §6-7.

Projects fail on trust, not engineering

Nationally, data centers stall when residents believe a deal was made in secret. The framework makes transparency the County’s strongest asset — and secures every promised benefit in writing.

TRANSPARENCY PROVISIONS

No NDAs with public officials

Undisclosed water or power information routes a project to the strictest review.

Independent peer review

County-selected experts check every water, noise, and power study — paid from applicant escrow.

Public voice

Applicant-hosted public meeting before the hearing, plus a live public project dashboard.

ENFORCEABLE BENEFITS

Secured in writing

Every dollar commitment backed by bond or guarantee, with liquidated damages on shortfalls.

No tax abatement

The full tax base is the community benefit; the framework proposes no abatement.

Real, adopted conditions

Bad-air-day generator limits, road repair, benefit contributions — modeled on approvals that exist.

Model: St. Louis Armory community-benefits agreement (adopted conditions, 2026) — \$/sq ft contribution, liquidated damages, no abatement.

Answering “how many can the County carry?”

Linn County adopted Iowa’s strictest ordinance — then paused new applications five months later, because per-project rules never answered the cumulative question. Ida County can answer it up front and never pause twice.

LAND

Total acreage in data-center use, capped at a set share of the County.

WATER

Cumulative permitted withdrawal vs. the aquifer’s modeled sustainable yield.

POWER

Cumulative interconnected MW vs. utility-certified available capacity.

The ordinance reviews itself. A running capacity ledger, with an automatic reopener at the earliest of: any ceiling reaching 75% · three years elapsing · completion of the State aquifer study · a utility capacity revision. No crisis, no second moratorium.

No U.S. county has yet adopted a cumulative-megawatt ceiling. Ida County would be the first — the draft says so plainly, and the Board decides whether to keep it.

Finish the framework during the moratorium window

1

Framework

A drafted, Iowa-benchmarked guideline the County can review section by section — not a blank page.

2

Design capability

Agricultural-vernacular building design proven on our Missouri projects, ready to adapt to Ida County.

3

Transparent process

A review track, peer-review model, and secured-benefit structure that build resident trust.

THE ASK

A working session with the Board and Planning & Zoning: react to this framework, settle the open policy calls — setback distances, the tranche cap, the water limits — and put ordinance-ready language in front of the County before the moratorium window closes.

A draft framework for County review. Not an adopted ordinance and not legal advice; the County Attorney reviews all language before adoption.