

The Data on Data Centers

The evolving technical landscape and what it means for community and economic impact

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Where are we now?

- Controversy around data centers has stalled out many proposals and it's unclear where data center momentum is going.
- Lots of policy movement in the State House and Senate since February, including signaling for Gov. Whitmer's office
- Massive number of moratoriums across the state, increasing interest in local regulatory approaches (e.g., modifying industrial zoning, community benefits agreements).
- Data centers continue to activate community and citizen response, even if there is no proposed development on the horizon (or any chance of a data center getting sited in a community).

The current policy landscape and public discourse are treating data centers as a monolith when they aren't. And few are willing to engage in a nuanced conversation about them.

One label, very different facilities

Squares drawn to scale by power capacity.

I gave a presentation the other week in Ionia, where they could probably put in a 40MW facility in a new tech park – that is 25 times smaller than the facility proposed in Van Buren Township.



*From cloud to AI: how the computational
landscape has changed*

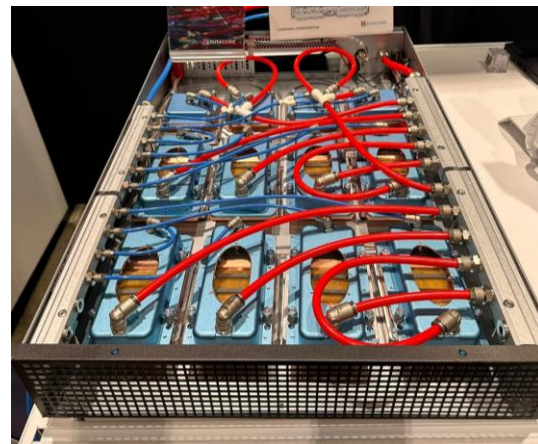
The cloud era: invisible infrastructure

- Email, storage, websites, streaming: services that moved off our devices and into “the cloud”
- 70+ commercial facilities in Michigan by 2023, plus 100+ single-user sites (8 at MSU alone)
- Standard server racks draw ~5–15 kW and are air-cooled
- Mostly uncontroversial; many communities never knew they had one

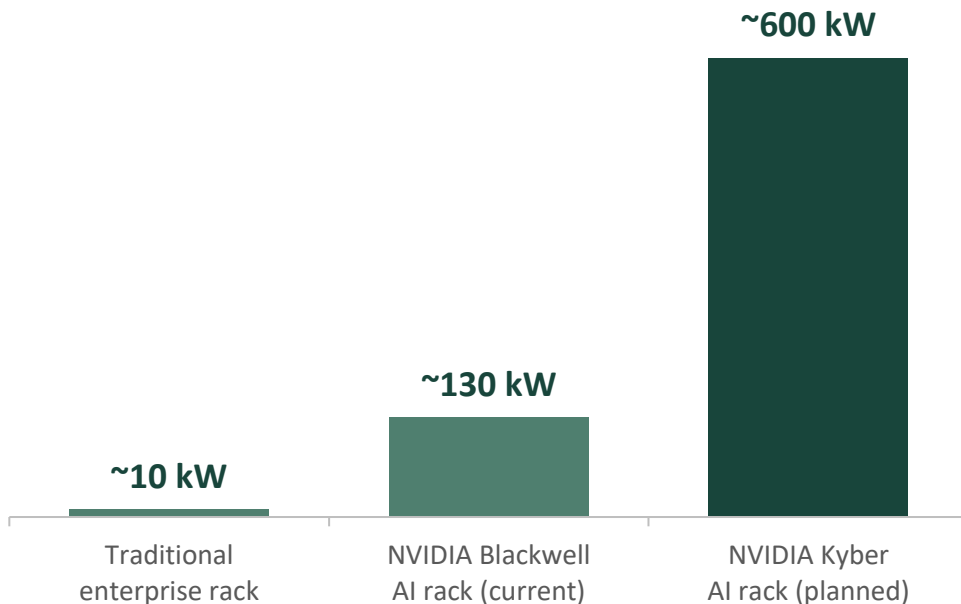


AI training: a different kind of building

- Training builds a model once, using thousands of chips working as a single machine for weeks or months
- Those chips must sit close together on very fast networks, so capacity concentrates in one place
- Result: campuses measured in hundreds of megawatts to gigawatts, increasingly liquid-cooled
- Siting follows cheap land, power, and transmission, which often means rural and suburban places



Power per rack: ~10 kW to ~600 kW



Why it matters

Each hardware generation demands new power delivery, cooling, and floor loading

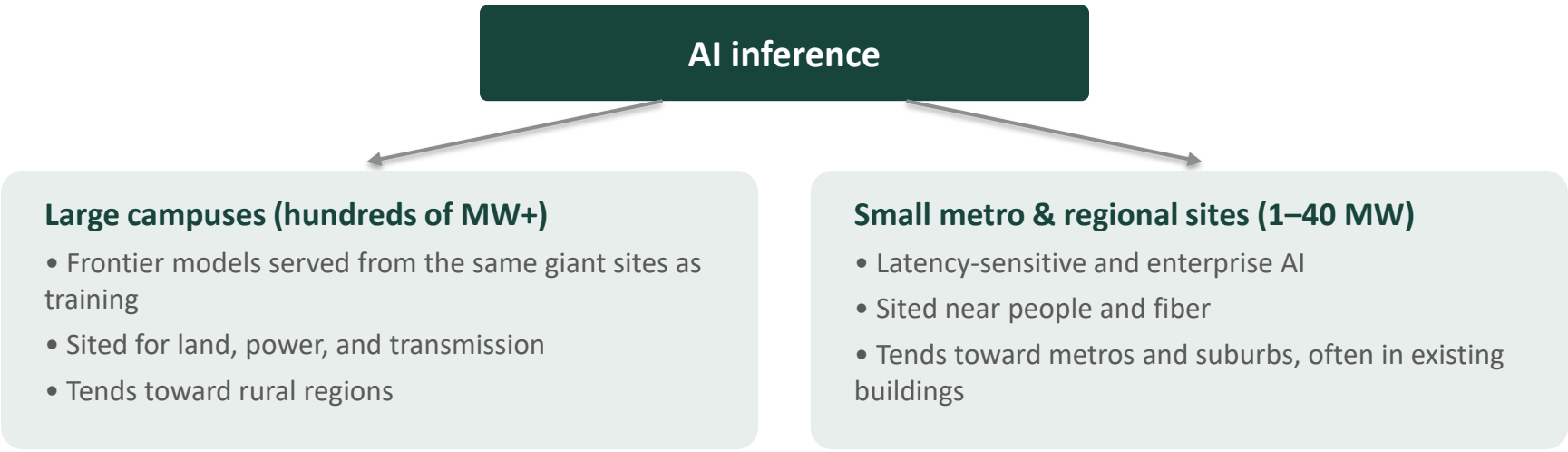
Buildings designed for today's AI may be outdated in years, not decades, if companies maintain same density of racks

In this case, decommissioning and reuse become much more important and timely problems.

AI inference

Inference means running a model every time someone uses it, a growing share of all AI computing.

AI inference



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graph TD; A[AI inference] --> B[Large campuses (hundreds of MW+)]; A --> C[Small metro & regional sites (1-40 MW)]
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Large campuses (hundreds of MW+)

- Frontier models served from the same giant sites as training
- Sited for land, power, and transmission
- Tends toward rural regions

Small metro & regional sites (1–40 MW)

- Latency-sensitive and enterprise AI
- Sited near people and fiber
- Tends toward metros and suburbs, often in existing buildings

Rural and suburban regions are likely to keep hosting the largest facilities; the small sites cluster near cities.

The future of data center siting in Michigan

Fewer: large campuses

- Opposition, grid interconnection delays, and equipment lead times filter out most proposals
- The few that proceed will move on longer timelines
- Rural areas are more likely to see an occasional megasite than a network of small ones

More: small sites across the state

- 1–40 MW facilities near people, fiber, and existing industrial land
- Often in buildings that already exist
- Metros and inner-ring suburbs first, then regional hubs

Same 20 MW, very different buildings

~2,000 racks →
at 10 kW each

~30 racks
at 600 kW each

Megawatts, not acres or square feet, is likely going to be the most important metric

The facility no one is watching



For example, a 5 MW inference site in an existing industrial building:

- Often allowed by right under existing industrial zoning
- May never come before a planning commission
- No host community agreement or ability to negotiate benefits
- State incentive thresholds and local review triggers were written with hyperscale projects in mind

*Thinking about economic and community
impacts*

Community impacts scale with size

Scale

A 40 MW facility is comparable to a mid-sized manufacturing plant. Hyperscale campuses are roughly 20–30 × larger.

Land use & property values

Very large campuses can affect nearby values. Newer research finds non-hyperscale sites in industrial parks generally don't.

Noise

Cooling equipment produces a constant low-frequency hum. Most ordinances only measure dBA, not the dBC range where it registers.

Water and electric utility impacts: see my fellow panelists.

Community impacts misinformation

Pollution

Data centers don't have an outsized pollution impact compared to other industrial land uses. They should be regulated just like everyone else (though pollution by electricity generation...)

Noise

Responsible data center development involves incorporating a whole suite of noise preventions. The viral videos we see of data center noise are often at speculative sites.

Health and nature

Concerns around electromagnetic sensitivity, cow births, honey bees, etc.

Water and electric utility impacts: see my fellow panelists.

Economic impacts: the hype vs. the reality

The hype

- Large numbers of jobs
- Significant tax revenue
- Multiplier effects across the local economy
- A long-term economic anchor

The reality

- Construction jobs are real and well paid, but temporary and often non-local
- Permanent jobs are few: ~20–50 at a large facility, 200+ at hyperscale
- Property tax capture is very real, even with abatements
- Long-term spillovers are still unknown
- Maybe we should be exploring colocation strategies?

Costs are local and concentrated; benefits are often diffuse and captured elsewhere.

Communities do have negotiating power

\$14M

Saline Twp.: fire/EMS,
farmland
preservation, parks,
community fund

\$10M

Saline Twp.: Saline
Recreation Center

\$8M / yr

Saline Twp.: area
schools

\$10M

Van Buren Twp.:
energy affordability
and other programs

The Saline case is an interesting one compared to Van Buren Township.

What this means for state policy

1

Do we calibrate to power or size?

Local zoning regulations, incentives, special land use permits, etc.

2

Should we be concerned about small sites?

The political landscape is telling us yes because "data center" is a dirty word, but in reality their impact is negligible (and they've existed in various forms for decades).

3

Tie incentives to community benefits

Link state tax treatment to local benefits and transparency at every scale.

4

Plan for obsolescence

Set statewide expectations for decommissioning and reuse.

5

Build local capacity, but for whom?

Model ordinances and technical assistance for planning commissions. Though, this intense focus on data centers is likely a huge waste of time for the vast majority of municipalities.

The communities that are best positioned for the next wave of digital infrastructure are the ones that decided what they wanted before anyone asked them.

Thank you

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