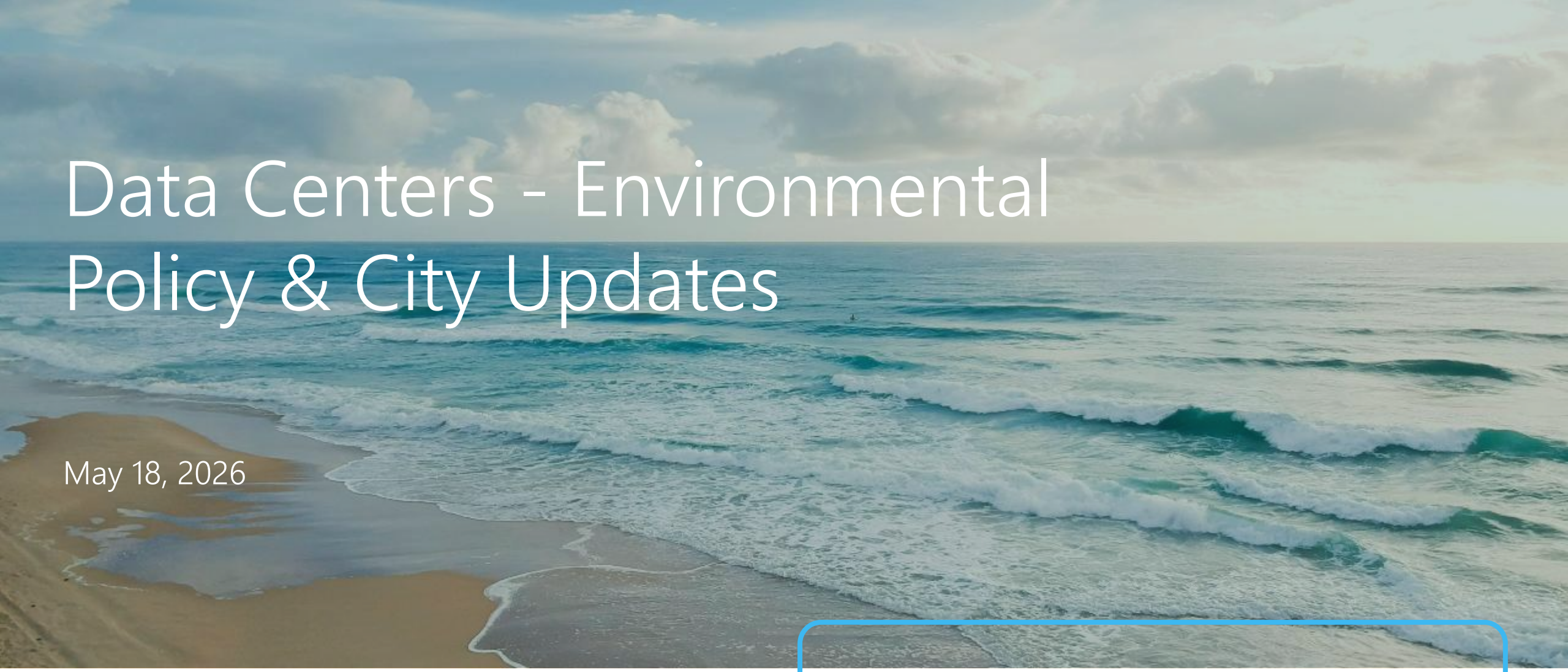


Data Centers - Environmental Policy & City Updates

May 18, 2026

FRESH COAST
Climate Solutions

Bold Solutions. Transformative Action.

Our Core Services

We offer bold and transformative services

Fresh Coast is now part of Cascade Energy, a leading energy efficiency firm serving utilities, corporations, and the public sector.

FRESH COAST Climate Solutions

Cascade Energy®

Our Clients

We consider friends and collaborators

Presenters

Gunnar Carlson – Program Analyst, Fresh Coast Climate Solutions

- Deliver sustainability and climate solutions for public and private sector clients, translating ambitious targets into actionable implementation that aligns environmental, operational, and financial objectives
- Project Management Professional (PMP) and Sustainability Certificate, University of Michigan
- BS from the U.S. Military Academy at West Point and former Army Captain

gcarlson@freshcoastclimate.com

Paul Gruber – Director of Sustainable Solutions

- 20+ years working on clean energy, clean transportation, and community engagement with public and private organizations
- Leading sustainability strategy & implementation, supply chain, data center impacts & solutions, regulatory support, and workforce development to SMBs, Fortune 500s, NGOs, and government
  - Supported 52 southeast Michigan businesses via Centrepolis Accelerator *MI Climate Wise Business* and City of Ann Arbor's *Green Business Challenge*
- MBA/MS in sustainable business, University of Michigan

pgruber@freshcoastclimate.com

FRESH COAST Climate Solutions

Fresh Coast provides analysis and guidance on data center impacts and solutions to aid responsible decision-making

Emerging Trends & Better Practices

CLIENT: The Joyce Foundation

- ✓ 6,000+ media articles / reports reviewed since April 2025
- ✓ Sharing knowledge with policy, NGO, community decision-makers via webinars and updates (Weblink)

Energy Efficiency & Utility Incentive Program

CLIENT: ComEd

- ✓ Interviews with data center developers and tech providers to understand energy efficiency benefits and costs
- ✓ Recommend utility incentive structures

Sustainability Strategy & Implementation

- ✓ Fresh Coast and Cascade Energy provide support to diverse stakeholders to inform better, sustainable decision-making
- ✓ Reach out to Paul Gruber at pgruber@freshcoastclimate.com to learn more

Themes: Market, Investment, Technology, Policy, Research, Frameworks

Recent data center webinar recordings & news updates

Posted by The Joyce Foundation

WEBINARS

- Data Center Development in the Great Lakes: Emerging Trends & Insights
  June 27, 2025
- Emerging Better Practices for Data Center Development in the Great Lakes
  September 23, 2025
- Economic, Fiscal and Energy-related Impacts of Data Centers in the Great Lakes Region
  November 6, 2025
- Responding to Data Center Development: Emerging Insights for Communities
  December 5, 2025

RECENT UPDATES

- Bi-weekly updates covering major themes, insights, and practices:
  - January 13, 2026
  - January 27, 2026
  - February 11, 2026
  - February 24, 2026
  - March 10, 2026
  - March 24, 2026
  - April 7, 2026
  - April 21, 2026
  - May 5, 2026

Agenda

01 Regional Data Center Development Overview

02 Emerging Policy Trends

03 Emerging City Responses

04 Emerging Better Practices & Recommendations

Agenda

01 Regional Data Center Development Overview

02 Emerging Policy Trends

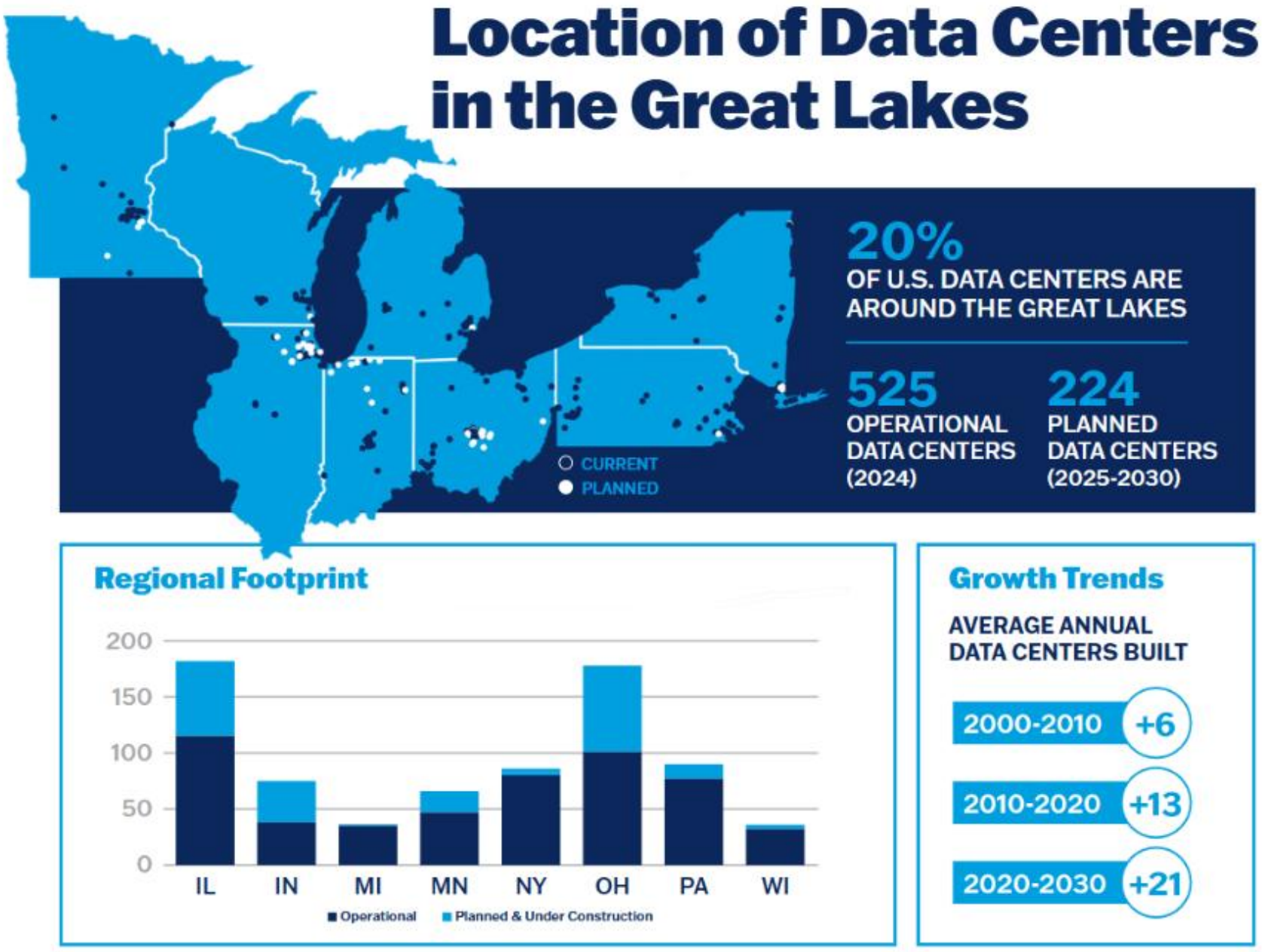
03 Emerging City Responses

04 Emerging Better Practices & Recommendations

The Great Lakes region is a major market for new data center development

Why the Great Lakes?

- Available land
- Access to transmission infrastructure and fiber lines
- Access to major metros, e.g., Chicago, Minneapolis, Columbus
- Cooler climate
- Available water (ground, municipal, Great Lakes)
- State tax incentives



Source: UVA Weldon Cooper Center for Public Service, S&P dataset

Data center types vary widely, with varying impacts on resources and communities

Data center type	Description	Est. Size	Est. Capacity	*Benchmark energy usage	*Benchmark water usage
Hyperscale	Built for massive compute loads - generative AI, machine learning, cloud computing, etc.	100k – 1M+ sq ft	20 MW – 1 GW+	Enough to power 750k homes	Up to 1-5 million gallons / day, equivalent to a town of 10-50k people
Colocation	Multiple tenants in a 3rd party facility with a variety of workloads - secure cloud services, storage, generative AI, etc.	10 – 100k sq ft	10 – 60 MW+	Enough to power 30-50k homes	Up to 200-500k gallons / day, equivalent to a town of 2-5k people
Enterprise	Private, centralized facility for one organization, often on-premises	5 – 10k sq ft	1 – 10 MW+	Enough to power 7-10k homes	Up to 10-150k gallons / day, equivalent to a town of 100-150 people
Edge	Small, decentralized facility, acts as a bridge between end-users and centralized cloud - reduces latency	≤ 5k sq ft	1 – 10 MW+	Enough to power 7-10k homes	Up to 10-150k gallons / day, equivalent to a town of 100-150 people

*Benchmark energy use based on U.S. EIA estimates for residential energy use; Benchmark water use based on LBNL WUE trends and the average American using 80-100 gallons of water per day (per EPA WaterSense)

Case Study: The scale of data center development is increasing around Chicago

Estimated total facilities: (~182)

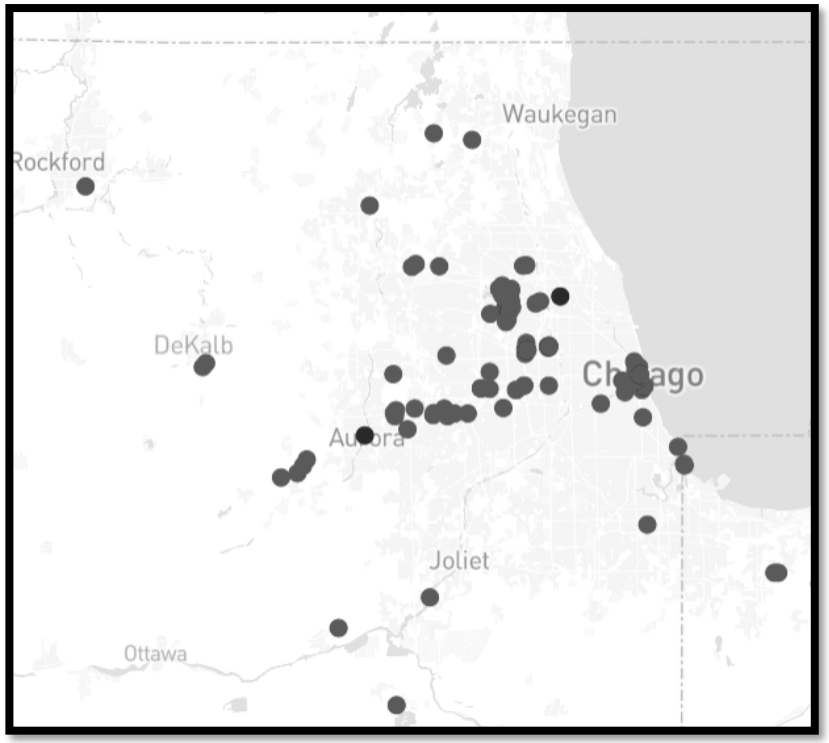
- 115 operational data centers
- 67 planned data centers
- 40+ active data center providers
- “Tier 1 Market” - top 10 market-size in the US

Main types (existing):

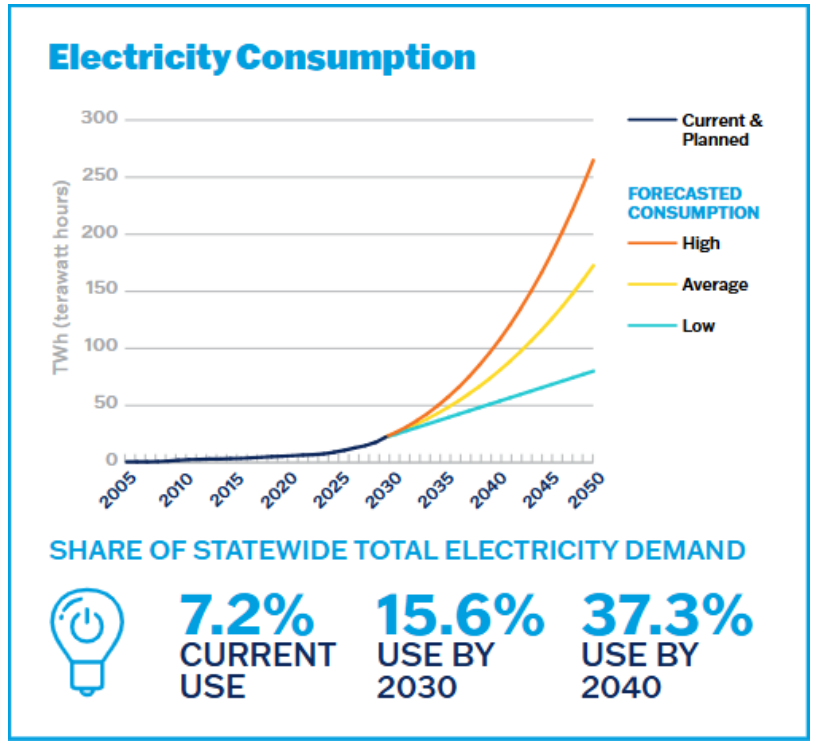
- Hyperscale
- Colocation
- Enterprise
- Edge

Main types (planned):

- Hyperscale campus & colocation facilities



Source: Data Center Map - Chicago Data Centers



Source: Illinois Data Center Fact Sheet, UVA Weldon Cooper Center for Public Service

Case Study: Chicago data centers span all types; some proposals for new development or expansions reach hyperscale status

Data center name	Location	Est. Capacity	Source
Digital Realty (ORD-10) Expansion	350 E. Cermak Rd.	109 MW	ORD10 Property Factsheet
QTS (Chicago 1 DC1) Expansion	2800 S. Ashland Ave.	42 MW	QTS Chicago 1 DC1 Data Center | 2800 S. Ashland Ave (42 MW)
1547 Critical Systems Realty (CHIL1 - Midway Technology Center)	40 E. Garfield Blvd.	25 MW	Chicago IL | CHIL1 | 1547 Critical Systems Realty
HydraVault Data Center	2538 S. Wabash Ave.	20 MW	HydraVault Chicago IL Bro 04 21 26

Key takeaways

- Large colocation facilities
- Expansions in addition to new builds
- Sites tend to be in or near South Side
- Marketing materials emphasize:
  - Proximity to growing compute demand in Chicago region
  - Financial services, healthcare, technology industries, etc.
  - Fiber-optic rich environment
  - Airport proximity
  - Tax incentive benefits
  - Colder climate + fewer natural disasters
  - ***Lack of sustainability and community engagement focus in materials***

Agenda

01 Regional Data Center Development Overview

02 Emerging Policy Trends

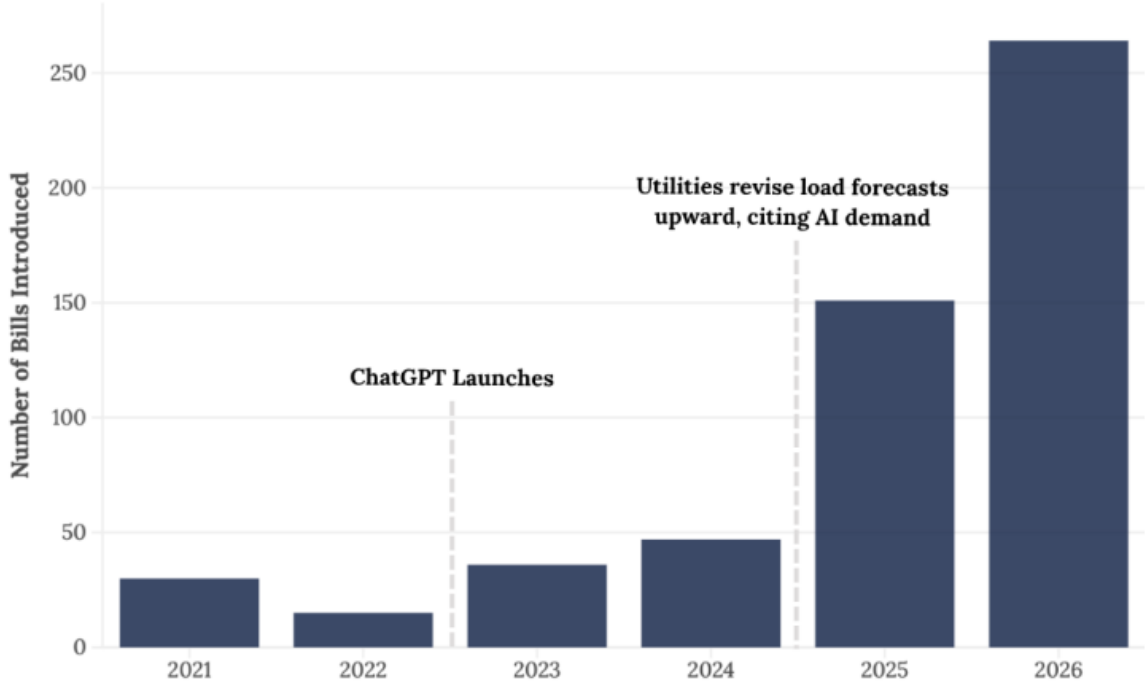
03 Emerging City Responses

04 Emerging Better Practices & Recommendations

State data center bill proposals have increased over 5x since 2021; Bills have shifted focus from tax incentives to increased regulation & oversight

State capitols are racing to regulate data centers

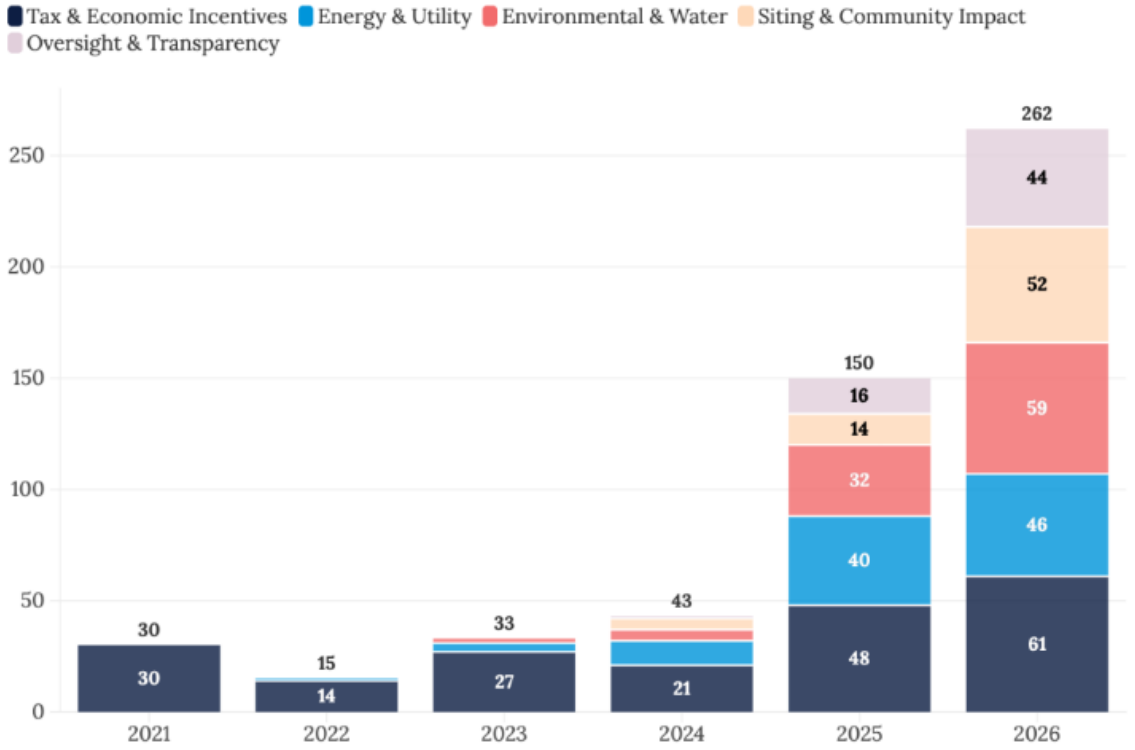
Bills introduced annually across all 50 states, excluding procedural resolutions, 2021–2026



Source: Latitude Intelligence/LegiScan

What state data center bills are really about

533 bills introduced across all 50 states, 2021–2026, grouped by primary policy focus



Source: Latitude Intelligence/LegiScan

Source: Latitude Media

Data center policies are emerging in Great Lakes states, highlighting increased awareness and concern about impacts

Michigan –

House legislation proposed to enact 1-year moratorium on data center construction (Source); 3 Senate bills proposed to require water withdrawal limits, disclosure, and infrastructure cost protection (Source); proposed repeal of existing tax exemptions (Source)

Illinois –

Illinois General Assembly introduced the POWER Act, which aims to set nation-leading guardrails on data center development, including annual water monitoring & reporting requirements for data centers *(Source)*

Minnesota ✓

HF 16 - established new customer class of "qualified data centers" and introduced new environmental, energy, and permitting requirements for large data centers, and compels public utilities to ensure data centers pay the full cost of their added energy requirement (Source)

Indiana x

Multiple bills introduced & under consideration to regulate water use, NDAs, labor requirements, etc. (Source); Multiple bill proposals failed in most-recent legislative session (Source)

Ohio –

Ohio Senators introduced 7 bill proposals that would address the reliability, affordability, water use, and local control concerns associated with data centers (Source)

Wisconsin x

State legislators introduced the Data Center Accountability Act (SB 729/AB 722) – would require data centers to recycle water for cooling, publicly report water & energy usage, and create a specific class of regulation for large data centers (Source)

New York –

(S9144/A10141) would impose a three-year moratorium on new data center permits above 20MW capacity to study their environmental, energy, and water impacts (Source)

Pennsylvania –

HB 2150 would require annual reporting of water & energy usage to the state Department of Environmental Protection (Source)

✓ **Enacted** – **Pending** x **Failed**

The POWER Act: Protecting Our Water, Energy, and Ratepayers

If passed, Illinois would have nation-leading guardrails on data center development

Ratepayer Cost Protection

- Data centers required to fund their own necessary power infrastructure upgrades

Resource Efficiency + Transparency

- Mandates for water-efficient cooling design and comprehensive energy usage plans

Community Benefit

- According to size, data centers will pay annually into restricted funds that enhance energy affordability and environmental justice

Sources: NRDC; Canary Media

Bring Your Own New Clean Capacity and Energy (BYONCCE)

- Data centers must secure their own new clean energy + flexible capacity sources; incentivizes faster grid interconnection for data centers with clean energy resources

Environmental & Local Community Protections

- Limit diesel generator use, environmental justice impact assessments, mandatory setbacks

Bill status as of 5/18/2026

- In committee; undergoing hearings in House and Senate
- Spring legislative session adjourns 5/31
- SB4016 / HB5513

*Note: draft bill language applies to 'hyperscale data centers'; thresholds for MW capacity or size are currently undefined but may be codified through the legislative process.

Agenda

01 Regional Data Center Development Overview

02 Emerging Policy Trends

03 **Emerging City Responses**

04 Emerging Better Practices & Recommendations

Great Lakes cities are in a fact-finding & policy design phase without clear, unified data center strategies

City	Policy Details
Detroit, MI	Detroit City Council passed a resolution (March 2026) urging the Mayor to establish a two-year moratorium on new permits for data centers until comprehensive zoning policies are established; 'Data Center Stakeholder Working Group' established; Mayor Sheffield's approval pending and the working group has a December 31, 2026, deadline for recommendations. *(Source)*
Columbus, OH	Columbus appears to rely on its general zoning code rather than dedicated data center zoning rules – no unified city policy; NW Columbus was first to enact a moratorium; at least 18 Ohio municipalities have since enacted moratoriums. *(Source)*
Minneapolis, MN	City Council scheduled a vote for a possible data center moratorium (May 21, 2026) (*Source*); Minneapolis does not appear to have dedicated data center zoning rules / strategy; however, MN's 2025 law already imposes requirements on water and energy disclosure, cost-allocation, and environmental protections.
Indianapolis, IN	City is developing first comprehensive zoning framework for data centers (see the draft ordinance here) – would create a dedicated zoning category, designed to improve oversight and establish 200-foot buffer from residential areas, 65-decibel noise cap, backup generator restrictions, and proof of adequate electricity and water capacity; critics say protections fall short in addressing environmental impacts, energy demand, and transparency. *(Source)*

Municipal governments throughout Illinois are beginning to establish moratoria and stronger requirements for data centers

Location	Policy Details
Aurora, IL	Following a 180-day temporary moratorium that began September 2025, the City of Aurora established a comprehensive new regulatory framework for data centers in March 2026. New requirements include provisions on oversight and transparency, performance standards, renewables, etc. (*Source*)
Champaign County	County Board approved a 1-year moratorium on new large-scale data centers in April 2026 and established a 'Data Center Activities Task Force' to study impacts and propose new, stronger rules for data centers over the next 12 months. (*Source*)
McLean County	County Board passed a zoning measure in March 2026 that allows data centers to be zoned in manufacturing, but not agricultural, zones. (*Source*)
Logan County	As a 60-day moratorium comes to an end, county officials are considering adding requirements in zoning rules while a major 500-MW, 200-acre project proposal is under consideration. (*Source*)

Local governments nationwide are setting new standards for data centers with stronger development and disclosure requirements, but limited monitoring and enforcement

Example Ordinance	Date	Description
Atlanta, GA (*Link*)	6/2/2025	Requires special use permit for data centers. The permit must include a water consumption plan, water conservation and sustainability plan, energy consumption plan, transmission line impact assessment, tree preservation and reforestation plan, a stormwater management plan, and any other information required by the City. The ordinance also puts restrictions on data center size, appearance, fencing, and siting.
Town of Brainerd, MN (Link)	5/5/2025	Ordinance defining a data center, establishing Conditional Use Permit criteria, and restricting noise. Also includes requirements for hazardous waste, water, screening, and energy use.
Fairfax County, VA (*Link*)	9/11/2024	This ordinance addresses districts in which a data center may be sited, sets visual screening and noise level standards, restricts building size, and sets forth required demonstrations for rezonings.
Montgomery County, MD (*Link*)	5/13/2026	Montgomery County officials are now considering a 2-year moratorium on data centers, one week after a 6-month moratorium was proposed by county officials.
Frederick County, MD (*Link*)	12/24/2025	Zoning ordinance restricts development to 0.6% of county land in a Critical Digital Infrastructure Overlay Zone (CDI-OZ).

Agenda

01 Regional Data Center Development Overview

02 Emerging Policy Trends

03 Emerging City Responses

04 **Emerging Better Practices & Recommendations**

"Better Practices" are being established by some Developers and Investors

*Through interviews and research, Fresh Coast has assessed sustainability practices of **100+ data center developers and investors in the U.S.***

Efficiency

- Business imperative for cost savings
- Energy and Water efficiency (e.g., PUE & WUE*)
- Heat/water recovery and re-use
- Design, tech, & operational practices

Load Management

- Automation and optimization with grid
- AI demand shifting; load flexibility
- Energy storage
- Invest in local community energy

Clean Energy & Offsets

- Energy procurement strategy
- Power Purchase Agreements (PPAs + VPPAs)
- Renewable Energy Certificates (RECs)
- Daily/hourly 100% clean energy profile

Commitments / Frameworks

- Climate & sustainability goals
- 3rd party verified standards
- Green buildings, energy efficiency, water, etc.

Transparency

- Share metrics + publish sustainability reports
- Share project development plans (no NDAs)
- Share status of implementation and operations

Private + Public Coordination

- Collaborate with community stakeholders
- State / local policy cooperation
- Investment in communities

*PUE: Power Usage Effectiveness; WUE: Water Usage Effectiveness

Emerging ideas for a mutually beneficial relationship between developers and communities

Industry investment to improve local community benefits

Contribute to community energy production and efficiency to offset data center demand, reduce community energy costs, and achieve decarbonization goals

- Fund building efficiency & electrification (e.g., heat pumps)
- Community microgrids, EV charging infrastructure, etc.
- District thermal energy networks / waste heat re-use

Align on amounts/types of community benefits

- Ensure fair tax revenue in line with business profits
- $ support for public services: schools, parks, community centers, police / fire departments, etc.
- Other ideas: expand internet access; AI/technical training; computing for local government/community

Industry transparency to foster informed local decision-making

Improve information flow and focus on AI data centers for community / societal benefit

- New business category requirements: “Qualified Data Center”
- No NDAs
- Engage community groups/members early
- Understand short-medium-long-term impacts to economy, environment, community
- Share type and volume of data planned for the facility with the public
- Disclosure of end uses/data products by category (e.g., % of facility used for scientific/technology research; high societal benefit?)

Roadmap of potential steps* municipalities can take to ensure proposed developments are thoroughly considered and enhance community benefits

Ensure legal guidance is integrated throughout

Establish or continue data center working group across organizational departments; Seek outside partners and expertise to inform decisions

Review current land requirements relevant to data centers and take any appropriate actions to protect the ability to make future decisions**

Create a definition for 'data center' to embed in policies for implementation of standards + requirements

Consider which zones to allow 'data centers' such as Manufacturing (M) for industrial purposes; consider definition's estimated size, purpose, impacts, etc.

Consider requiring special use permits for 'data centers' above a certain size threshold instead of 'by-right' development to afford municipal authorities additional review

Establish minimum requirements for approved developments, such as transparency, quality-of-life impacts, resource stewardship, end-of-life, etc.

Identify community benefits opportunities in alignment with municipal master plans, community needs, strategic goals, etc.

Coordinate + engage beyond municipality by sharing information with peer municipalities and engaging with state regulators, utilities, private industry, etc.

**E.g., Jurisdictions in the U.S. have established or are considering moratoria (from 2 months to 2 years) to understand impacts, opportunities, and legal protections and to update zoning, ordinances, codes, etc.

Working groups & resources

Organization + resource name	Publication	Link	Description
Great Plains Institute | Great Lakes Data Center Resource Hub	April 2026	Great Lakes Data Center Resource Hub - Great Plains Institute	Searchable and filterable repository of academic publications + research reports, state and local policies, and contacts for pro bono technical assistance providers.
Climate Mayors | Data Centers and the Climate Landscape: An Actionable Resource for US Mayors	February 2026	Climate Mayors | Data Centers	Guidebook for city leaders, explaining how rapid data center growth affects local energy systems, water use, land use, and climate goals. Includes information on zoning, permitting, and coordination with utilities, etc.
University of Michigan Graham Sustainability Institute, Center for EmPowering Communities | What Michigan Local Governments Should Know About Data Centers	February 2026	Data Center Guidebook	Offers policy considerations such as zoning strategies, negotiation practices, and evaluation frameworks to help cities assess proposals, mitigate risks, and ensure developments align with local priorities and public benefits.
Alliance for the Great Lakes | A Regional Playbook for Managing Data Center Impacts in the Great Lakes	March 2026	Data Center Playbook - Alliance for the Great Lakes	Compiles accessible data, policy ideas and community-focused tools such as evaluation checklists and key questions for developers to help cities assess proposals, improve transparency, and make more informed siting and regulatory decisions that protect public resources and community well-being.
RMI | Lightening the Load: Scaling Clean Solutions for Data Centers and Communities	October 2025	Lightening the Load - RMI	Outlines opportunities for clean energy solutions, policy approaches, and engagement frameworks to help municipalities collaborate with utilities and developers.
Southern Environmental Law Center (SELC) | Getting it Right: Local Approaches to Data Center Development	January 2026	Getting It Right: Local Approaches to Data Center Development - Southern Environmental Law Center	Offers local zoning approaches, development standards, and public engagement strategies to help cities increase transparency, evaluate proposals, and shape responsible data center siting and regulation aligned with community priorities.
World Resources Institute (WRI) | Community Benefits Frameworks Across the US	March 2025	Database of Community Benefits Frameworks Across the US | World Resources Institute	Searchable and filterable repository of real-world agreements for a wide variety of project types (including non-data center projects) that outline how large development projects can deliver local benefits.
AI Now Institute | North Star Data Center Policy Toolkit	April 2026	North Star Data Center Policy Toolkit	Includes local, state, regional, and federal policy intervention recommendations, as well as information on topic areas: air pollution, moratoria, energy, economic development, etc.
National League of Cities (NLC) | Key Questions to Ask When Considering Data Centers in Your Community	April 2026	Key Questions to Ask When Considering Data Centers in Your Community - National League of Cities	Private resource (login required) – provides structured questions to evaluate proposed data center projects and guide discussions with developers, utilities, and regulators.

Thank you

Let’s make bold changes together.

FRESH COAST
Climate Solutions

Paul Gruber
pgruber@freshcoastclimate.com

Gunnar Carlson
gcarlson@freshcoastclimate.com

Abby McDowell
amcdowell@freshcoastclimate.com

Appendix

AI Data Center growth represents unprecedented, multi-faceted challenges and opportunities

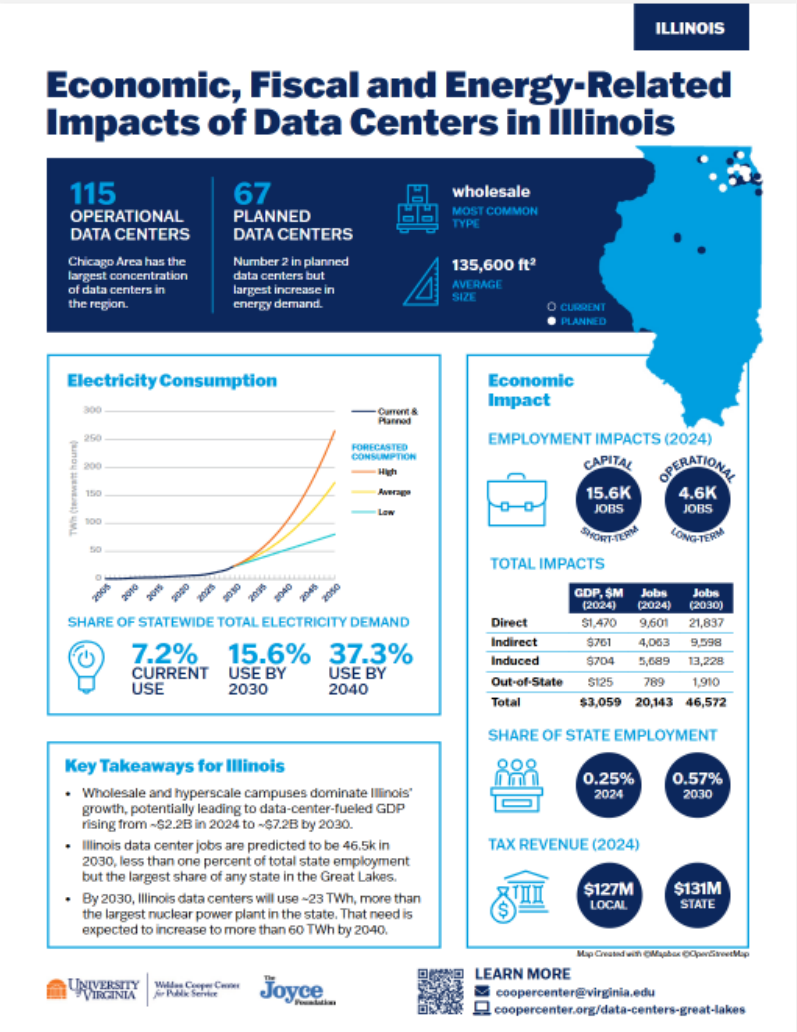
Unprecedented scale and pace

- $Ts committed to new US developments by 2030
- AI-linked companies comprise 45% of the S&P 500 market cap in 2026
- Hyperscaler growth + energy/water/land impacts
- “AI Gold Rush” brings 1,000+ old/new industry players
- Power/land grab
- Focus on speed-to-operations

Increasing awareness and scrutiny

- AI Bubble?
- Concerns on jobs, land use/value, load growth, grid stability, rate increases, ecosystems, noise, emissions, public health, water and climate goals
- Growing engagement of fed/state policymakers, NGOs, researchers, local decision makers, and the public

What's happening in Illinois?



Source: UVA Weldon Cooper Center for Public Service

Policy News

- Trump Administration and PJM-region governors issue "statement of principles" to provide 15-year price certainty for new capacity resources, extend price collar on capacity auctions, allocate costs to data centers *(Source)*
- Governor Pritzker signs the Clean and Reliable Grid Affordability Act (CRGA) into law, mandating 3 GW of energy storage by 2030 *(Source)*
- Illinois General Assembly introduces the POWER Act, which aims to set nation-leading guardrails on data center development *(Source)*
- Governor Pritzker announces two-year pause on state tax incentives for new developments, effective July 1, 2026 *(Source)*
- Increasing local pushback on data center development
  - Aurora, IL – Following a 180-day moratorium, City Council established comprehensive data center regulatory framework *(Source)*
  - Naperville, IL – City Council voted to deny development proposal by Karis Critical *(Source)*
  - Lisle, IL – Public hearing on proposed data center postponed due to large crowds *(Source)*

Developments News

- Joliet, IL – HW Technology Park plans a 795-acre, 24-building campus development and ComEd substation at the site, slated for construction by 2027 *(Source)*
- Grayslake, IL – T5 Data Centers @ Chicago IV, planned 450+ acres and 1.2 GW capacity, delivery in 2027 *(Source)*
- Elk Grove, IL – ComEd's 260MW substation set to serve Stream Data Center's 3rd Chicago facility, expected to be ready for service in 2027 *(Source)*
- Decatur, IL – Google partners with Broadwing Energy for first-of-its-kind natural gas power plant with carbon capture and storage (CCS), estimated to capture and store 90% of CO_2 emissions *(Source)*
- Chicago, IL - Illinois Quantum and Microelectronics Park (IQMP) partners with Silicon Catalyst to support early-stage quantum companies *(Source)*

Data center water consumption estimates vary widely, requiring site-by-site disclosure and verification + regional analysis of data center clusters

Data Center Type	Est. Daily Water Use	*Benchmark	Sources / Notes
Hyperscale 20MW – 1GW+ capacity	Up to 1-5 million gallons per day (MGD)	Equivalent to a town of 10,000 – 50,000 people	Alliance for the Great Lakes, A Finite Resource EESI, Data Centers and Water Consumption
Colocation / Retail 10-60+ MW capacity	Up to 200,000 – 500,000 gallons per day	Equivalent to a town of 2,000 – 5,000 people	Estimated based on WUE trends (0.45 – 0.48 L/kWh) – LBNL study
Enterprise + Edge 1-10 MW capacity	Up to 10,000- 150,000 gallons per day	Equivalent to a town of 100 – 1,500 people	Estimated with WUE trends (0.45 – 0.48 L/kWh) – LBNL study

*Based on the average American using 80-100 gallons of water per day (per EPA WaterSense)

Considerations

Figures are not uniformly tracked / reported by data center developers, corporations, or regulatory bodies

- ***Direct*** vs. ***indirect*** water use not always differentiated
- Water ***consumption*** vs. water ***use*** not always differentiated
- Individual site-level estimates may fall outside estimated parameters due to different technology, operational practices, etc.

Very high variance in water consumption based on different data center types and AI workloads + Lack of public disclosure makes understanding water impacts challenging

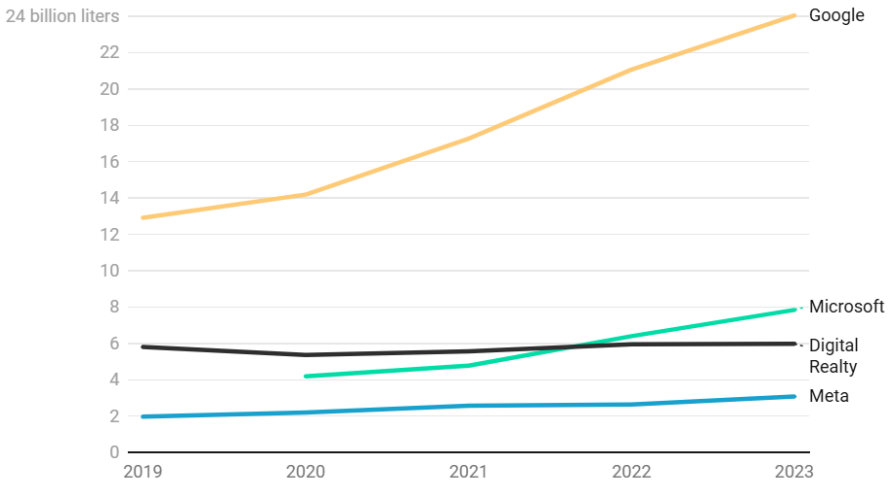
Significant differences in water consumption site-to-site

Academic studies find wide variances in consumption between sites

- ***1,000-fold differences*** in water consumption per kWh of server electricity consumed
- Workload-level variations exceeding ***10,000-fold***
- ***10-fold*** differences in server workload efficiency

Source: Lei, Nuoa, J. Lu, A. Shehabi, E. Masanet, "The water use of data center workloads: A review and assessment of key determinants, June 2025", Lawrence Berkley National Lab, June 2025

Voluntary disclosures from corporate sustainability reports are inconsistent



Corporate reports vary in defining:

- ***Company-wide*** consumption vs. consumption attributed to ***data centers***
- Individual ***site-level*** consumption
- ***Direct*** consumption vs. ***indirect*** consumption

Mandatory water-use reporting is lacking, but some Great Lakes regulators begin to close the gap

Illinois' POWER Act (proposed)

- Would require detailed annual reporting for water consumption & discharge to DNR

Michigan's SB 761-763 (proposed)

- Would impose withdrawal limits, transparency requirements, and cost allocation for public infrastructure

Minnesota's HF 16 (enacted)

- Requires data centers with 100 million+ gallons annual consumption to apply for DNR permit

Local governments and authorities are often left responsible for planning & evaluating water consumption with limited information (Source)

Direct & indirect water consumption

Indirect water consumption from energy production is ***significantly higher*** than direct site-level water consumption

Definitions

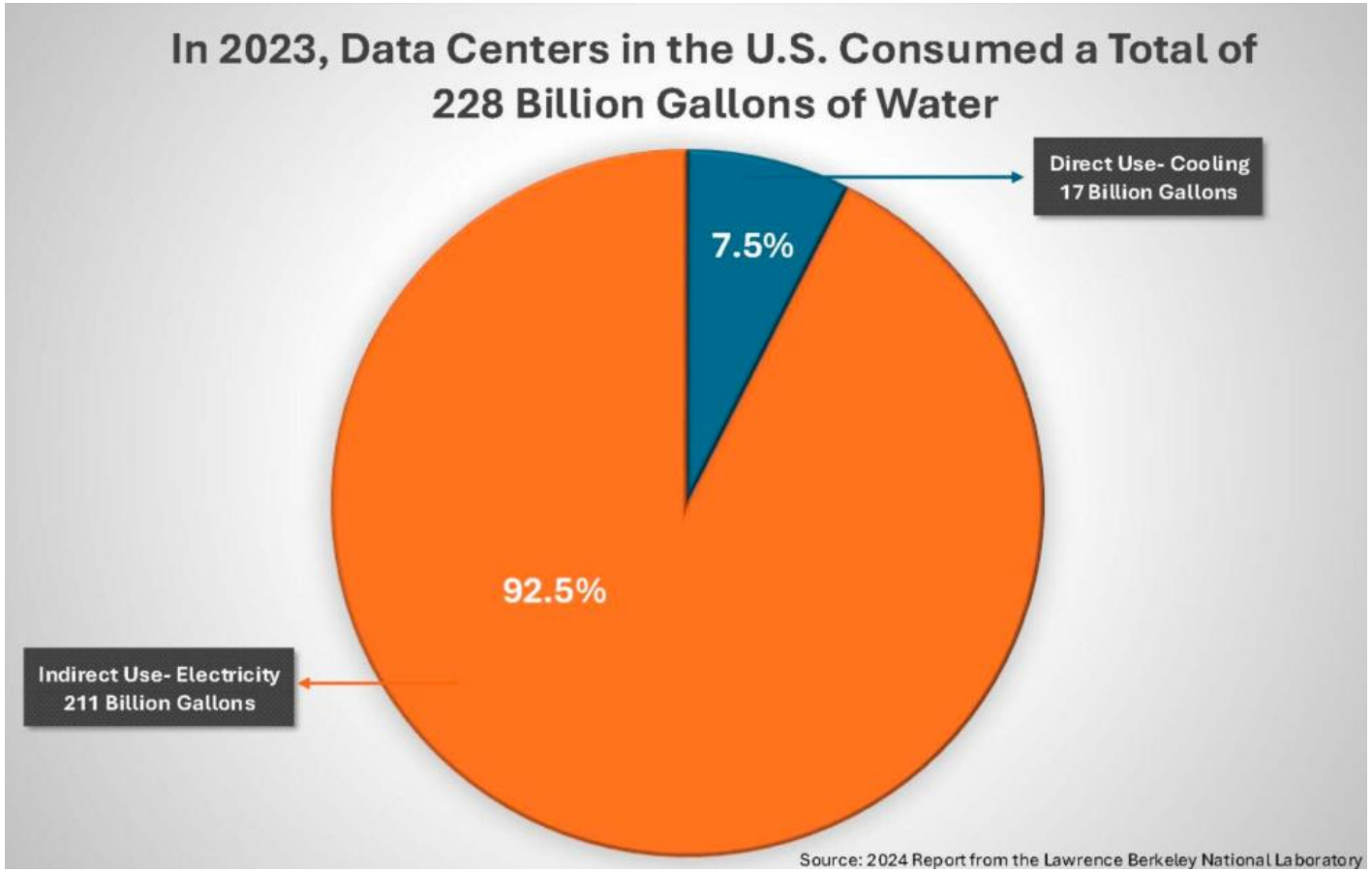
Direct water consumption:
On-site usage, typically for cooling, e.g., evaporative cooling towers.

Indirect water consumption:
Water required off-site to generate the electricity used to power the data center (e.g., servers, IT equipment, building systems), which is dependent on the local grid mix (e.g., nuclear, natural gas, coal, renewables, etc.)

How different electricity sources impact water consumption

Lower water-consuming resources:
Wind, solar, and geothermal

Higher water-consuming resources:
Coal, nuclear, and natural gas



Source: EESI Report

Source: LBNL Report

Direct water consumption from data centers is projected to increase

Growth concentrated in hyperscale & colocation facilities

Direct water consumption by data centers increased over ***200%*** nationally from 2014 to 2023

- 2014: 21.2 billion liters
- 2023: 66 billion liters

Direct water consumption could increase up to **250+ billion liters** by 2028

- Hyperscale facilities account for 60-124 billion liters in projections

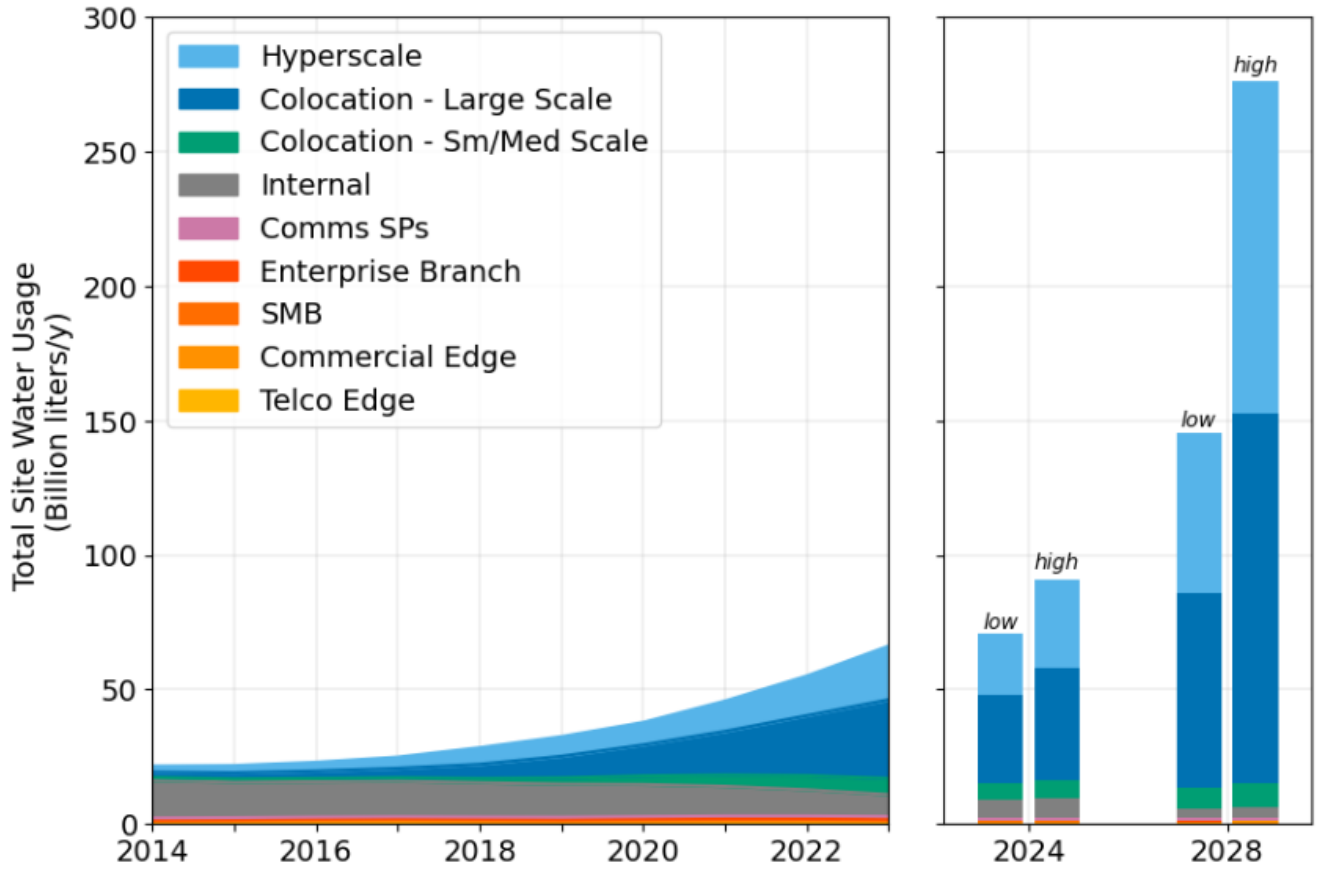
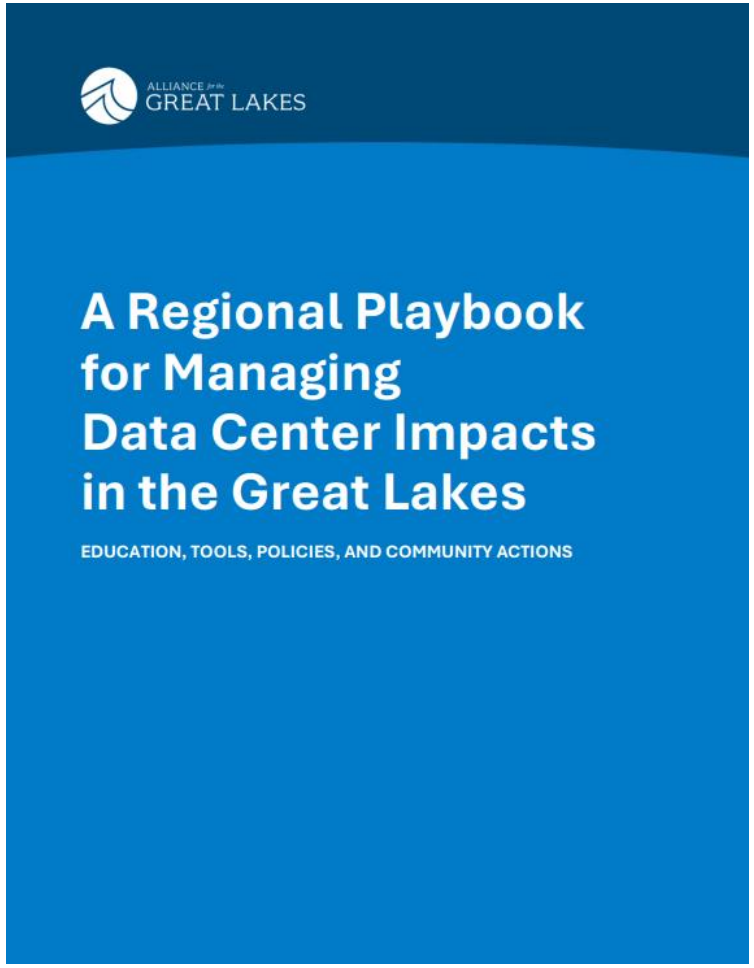


Figure 5.9. Direct water consumption by data center type.

Source: LBNL Report

A growing list of research publications, playbooks, and other resources are emerging to inform decision making and policies regarding data centers



Data Center Playbook - Alliance for the Great Lakes

Checklists for Communities from the Playbook

Checklist for Evaluating Data Center Impacts

- "What amount of water will the data center need each day and each year?"
- "What is the source of the water (surface water, groundwater, municipal supply)?
- "Who pays for new pipes or wastewater treatment if upgrades are needed?"

Checklist for Community and Environmental Benefits

- "Implement water-use intensity (WUI) targets with annual reduction goals, aligned with emerging industry metrics used by ASHRAE and Department of Energy"
- "Set maximum daily and annual withdrawal caps tied to watershed capacity"
- "Install real-time water-use and groundwater monitoring systems"

Questions to Ask at Public Meetings

- "How much water will be consumptively used (evaporated and not returned)?"
- "How will the community ensure sufficient water and energy for existing residents and businesses if the increased economic development occurs?"
- "How might this affect water, sewer, or energy rates for residents?"