



ICWP

INTERSTATE COUNCIL ON WATER POLICY

2026 DATA CENTER REPORT

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The rapid integration of artificial intelligence (AI) and cloud computing has triggered an unprecedented expansion of digital infrastructure across the United States. While technological advancements have made, and continue to make, great strides in reducing water consumption, many communities still face issues around industrial water consumption. In 2023 alone, U.S. data centers consumed an estimated 17 billion gallons of freshwater directly through on-site evaporative cooling systems, with an additional 211 billion gallons consumed indirectly through thermoelectric power generation. Driven by the processing demands of generative AI hardware, the industry's direct water footprint is projected to quadruple by 2028.¹ This escalating demand places digital infrastructure in direct competition with residential communities, agricultural networks, and vulnerable regional aquifers.

This resource strain is further compounded by a lack of corporate transparency. Historically, data center developers have used dubious legal strategies, including strict Non-Disclosure Agreements (NDAs) from municipal officials and asserting "trade secret" exemptions, to shield site-specific water metrics from public review.² In landmark disputes, such as the legal battle over Google's infrastructure expansions in The Dalles, Oregon, public utilities spent hundreds of thousands of dollars in taxpayer funds to legally withhold water consumption data from journalists and environmental watchdogs.³ Although high-profile lawsuits have forced individual disclosures, the regulatory framework remains highly fragmented, allowing many operators to obscure their long-term environmental footprints from local planners.

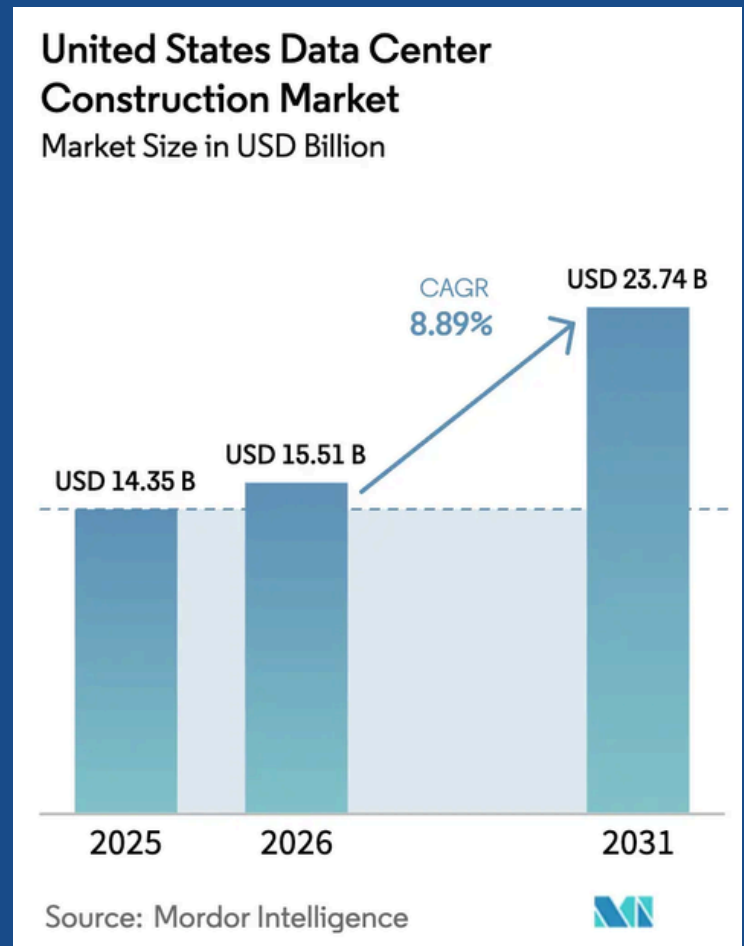
As a direct consequence of this transparency gap, community engagement has shifted from passive economic cooperation to active grassroots resistance. Local residents and national advocacy groups are challenging the narrative that data centers provide risk-free economic benefits. Opponents frequently highlight the stark utility inequities that arise when tech conglomerates secure heavily subsidized water and energy rates, while local homeowners face rising baseline rates to fund municipal infrastructure expansions.⁴ This friction has escalated into active political and legal battles, culminating in municipal moratoria on data

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Introduction

center construction in states ranging from Minnesota to Texas, and widespread demands for unified federal oversight.⁵

This report provides a brief assessment of the current data center issue, exploring the delicate balance between technological advancement and regional resource security. By analyzing recent conflicts in municipal hubs across Oregon, Minnesota, Texas, California, and more, this paper illuminates the systemic legal loopholes used to bypass local zoning authority. It also outlines several standardized policy frameworks designed to mandate transparent environmental reporting, incentivize alternative closed-loop cooling infrastructure, and restore equitable community oversight to the digital development process. While this report focuses mainly on water resource use, it is important to remember the interconnectedness of the environmental issues surrounding data centers. Water, energy, land use, air quality, and noise are not siloed from one another and addressing one will, in all likely cases, impact another.



The federal government operates at a critical intersection in the data center debate, balancing the push for national artificial intelligence supremacy with the protection of critical infrastructure. Historically, Washington has taken a hands-off approach to digital infrastructure, viewing data centers primarily as private commercial enterprises. However, the sheer scale of energy and water resources access and quantity being requested by next-generation AI clusters has elevated data centers to a matter of national security and economic resilience.⁶ Federal agencies are increasingly required to step in by revising environmental regulations, recognizing that localized resource strain can ripple across multi-state power grids, deplete major interstate river basins, and compromise the health of nearby communities.⁷

As a result, current federal policy is shifting away from passive observation and toward targeted, data-driven oversight. Key federal levers, ranging from Environmental Protection Agency (EPA) water quality standards to Department of Energy (DOE) grid reliability mandates, are being updated to account for the unique operational footprint of massive “hyperscale” computing facilities designed to efficiently support thousands of servers and massive volumes of data traffic.⁸ This section lists some of the most recent legislation from the evolving federal landscape, federal sustainability guidelines for computing infrastructure, and the legislative efforts to standardize resource-use reporting across the country. By establishing national baseline metrics, federal policy aims to eliminate the regulatory patchwork that currently allows developers to exploit state-level loopholes at the expense of regional ecological stability.

2.1 Executive Order 14318

Executive Order 14318, titled “Accelerating Federal Permitting of Data Center Infrastructure,” was signed by President Donald J. Trump on July 23, 2025. The primary goal of the order is to fast-track the construction of large-scale artificial intelligence (AI) data centers and their supporting utilities by cutting federal regulatory burdens, reducing bureaucratic delays, and offering financial incentives. The executive order explicitly targets “Qualifying Projects,” which are defined as data center or semiconductor developments that protect national security, represent a capital investment of at least \$500 million, or demand an incremental electric load greater than 100 megawatts (MW).

- EPA is directed to streamline Clean Water Act permitting approaches for qualifying data center infrastructure projects.
- Expanded NEPA categorical exclusions may accelerate environmental reviews for qualifying projects.
- Projects receiving less than 50% federal funding may have a narrower NEPA review pathway if they do not involve substantial federal control.
- Data center projects exceeding 100 MW of new load may qualify for expedited permitting pathways.
- FAST-41 processes coordinate and track federal permitting schedules through the Federal Permitting Improvement Steering Council.
- Brownfield and Superfund provisions support faster reuse of contaminated sites while maintaining applicable environmental requirements.
- Federal agencies are directed to facilitate the availability of public and military lands for qualifying infrastructure projects.



2.2 Clean Cloud Act of 2025

S.1475, the Clean Cloud Act of 2025, amends the Clean Air Act to establish federal emissions standards and regulatory oversight for high-demand computing infrastructure, including AI data centers. It mandates the Environmental Protection Agency (EPA) and the Energy Information Administration (EIA) to track electricity consumption and emissions for facilities exceeding 100 kilowatts. The legislation requires a regional emissions baseline that scales down by 11% annually beginning in 2027, requiring a transition to zero-emissions by 2035. It imposes compliance fees on utilities and facilities exceeding these targets and prohibits passing these costs to residential consumers, directing revenue instead to clean energy and storage projects. The bill was introduced on April 10, 2025 and referred to the Committee on Environment and Public Works.

- The 100 kW threshold applies emissions reporting and regulatory requirements to covered data centers and cryptomining facilities with high electricity demand.
- EPA and the Energy Information Administration would collect data on electricity consumption, including grid electricity use and electricity from on-site generation assets behind the meter.
- The regional emissions baseline would decline by 11% annually from 2027 through 2034, using a 2026 regional baseline as the reference point.
- Beginning in 2035, the regional emissions baseline would be set to zero metric tons of CO₂-equivalent per kilowatt-hour, effectively establishing a zero-emissions electricity standard for covered facilities.
- Compliance fees would apply to utilities serving covered facilities and to covered facilities using on-site generation when emissions exceed the applicable regional baseline.
- Collected fees would support federal programs, including zero-carbon electricity generation, long-duration energy storage, and related energy assistance programs.



2.3 Data Center Transparency Act

H.R. 6984, the Data Center Transparency Act, introduces federal reporting requirements to track the environmental and economic impact of data centers amid rising AI and cloud infrastructure demands. The legislation mandates public disclosure of water usage, electricity consumption, and greenhouse gas emissions to assist municipalities in managing utility strain. The bill directs the Environmental Protection Agency (EPA) to report quarterly on water consumption and emissions, with a focus on impacted communities. Concurrently, the Energy Information Administration (EIA) is mandated to report bi-annually on electricity usage and impacts on household energy costs. This bill was introduced on January 8th, 2026 and referred to the House Committee on Energy and Commerce.

- EPA reporting would require public disclosure of total water consumption by data centers, including water use metrics.
- Data centers would report water reuse practices and the amount of reused water deployed.
- Reporting would address local water system impacts, including potable water availability and infrastructure demand.
- Data would track changes in residential water rates associated with data center impacts.
- Data centers would report pollutant discharges, including pollutant types and volumes entering water bodies.
- Greenhouse gas reporting would include emissions data and impacts on environmentally overburdened communities.
- The bill increases transparency on data center water and environmental impacts but does not establish new water withdrawal limits, permitting requirements, or cooling standards.



2.4 A.I. Data Center Moratorium Act

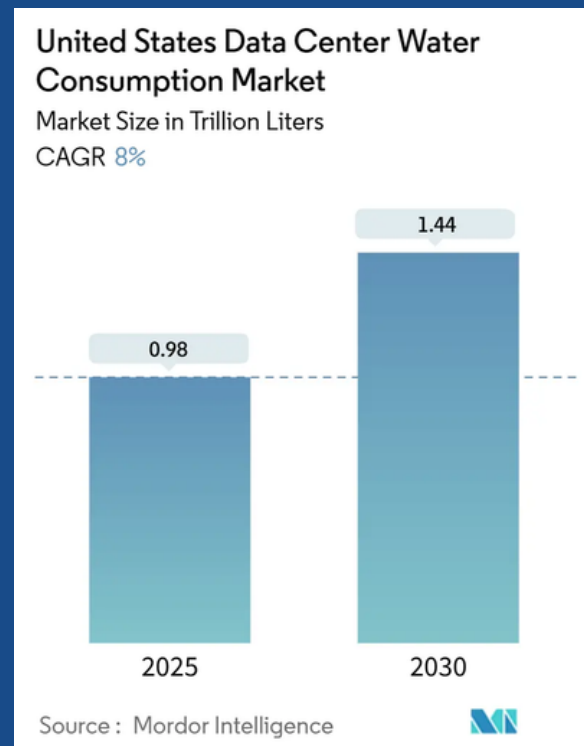
S.4214, the Artificial Intelligence Data Center Moratorium Act, proposes a federal freeze on constructing or upgrading high density AI data centers to address environmental and consumer protections. The legislation demands strict federal safety reviews, imposes export controls on AI hardware, and mandates that future infrastructure not increase residential utility bills. The moratorium aims to pause expansion until Congress establishes a regulatory framework ensuring AI benefits the broader workforce. This bill was introduced on March 25, 2026 and referred to the Committee on Commerce, Science, and Transportation.

- The bill would impose a temporary federal moratorium on permitting, construction, and major upgrades of covered high-density AI data centers until federal regulatory standards are established.
- It requires federal review and evaluation of safety, reliability, and infrastructure impacts before any potential lifting of the moratorium.
- A power-density threshold (around 20 MW-class facilities, depending on final definition) is used to define which AI/data center projects are covered by the pause.
- The bill includes federal data collection and reporting on energy use by covered computing facilities, but it does not explicitly mandate nationwide water-use reporting by DOE.



While federal authorities approach data centers through the lens of national security and AI supremacy, state governments face the immediate, physical realities of industrial resource consumption. Data center operations exist within the legal domain of state resource management, making state capitals into the primary battlegrounds for water rights and utility equity. Historically, states viewed these facilities through a purely economic lens, treating them as lucrative tax engines and approving their development.⁹ However, the unprecedented utility demands of generative AI have shattered this passive approach.¹⁰ State regulators now find themselves on the front lines, required to manage severe strains on municipal infrastructure, rapid aquifer depletion, and the volatile public backlash that follows.¹¹

Consequently, a new wave of state-level interventions is dismantling the hands-off regulatory environment. Rather than relying on broad national guidelines, states are using their distinct constitutional authorities over water allocation, environmental permitting, and public utility regulation to impose rigid boundaries on tech developers. By replacing fragmented local zoning rules with binding state frameworks, legislatures aim to protect regional ecological stability from predatory development practices.¹² This section examines recently passed state legislation and identifies key provisions.



3.1 Utah House Bill 76 (2026)

Utah House Bill 76 (2026), the “Data Center Water Transparency Amendments,” establishes an early-intervention state tracking framework designed to balance long-term hydrological planning with industry data security. By inserting state water authorities directly into the municipal land-use approval process, the statute prevents sudden, unvetted infrastructure strains on the state's fragile desert basins. The law treats water availability as a vital prerequisite to construction, forcing developers into early compliance loops with local suppliers long before physical infrastructure breaks ground. While the policy successfully mandates resource accounting to protect state supplies, it purposefully maintains a cooperative relationship with the tech sector by shielding individual site metrics under state privacy laws.

- The bill creates a water-use reporting framework for data centers focused on transparency of consumption and reuse.
- It uses a size and water-demand threshold to define covered facilities.
- It requires coordination between local permitting entities and the state water agency for visibility of new high-water-use projects.
- Operators must disclose cooling water sources before construction to support early supply planning.
- Covered facilities must file annual reports on withdrawals, consumptive use, and reuse.
- Some facility-specific data may be aggregated or protected to limit public disclosure of site-level operations.
- New requirements apply mainly to facilities beginning operation after an effective date (July 1, 2026).
- The state is granted enforcement and rulemaking authority, including penalties for noncompliance.



3.2 South Dakota Senate Bill 135 (2026)

Utah H.B. 76, the Data Center Water Transparency Amendments, creates reporting and disclosure requirements for new large data centers. It requires local land use authorities to notify the Division of Water Rights, the Division of Water Quality, and relevant water providers before approving a land use application for a new large data center. It also requires operators to notify water providers and report specified water-related information to the Division of Water Rights before construction and annually after operation begins.

- Requires land use authorities to notify state water agencies and relevant water providers before approving a land use application for a new large data center.
- Requires operators, 90 to 360 days before construction activity, to notify the relevant water provider of anticipated water consumption needs.
- Requires pre-construction reporting to the Division of Water Rights on location, estimated annual withdrawals, discharge treatment plans, discharge temperature adjustment, and planned water reuse or replacement activities.
- Requires annual reporting after operation begins on water reduction efforts, actual withdrawals, and efforts to protect the environment and public from polluted water, if applicable.
- Requires the Division of Water Rights to publish withdrawal data for each new large data center by September 1 for the previous calendar year, while protecting specified proprietary information and publishing protected information only as aggregated, anonymized county-level data.
- Authorizes enforcement for failure to submit complete reports, including fines of up to \$100 per day after notice.



3.3 Virginia Senate Bill 553 (2026)

Virginia Senate Bill 553 (2026) amends Virginia's water withdrawal reporting requirements by requiring entities that already report water withdrawals and supply water to a data center to report the volume of water delivered to that data center. The bill also authorizes public water systems to report domestic, commercial, and industrial water use, including data center water use, using existing billing systems where feasible.

- Offsite water suppliers must report data center–associated water volumes to the State Water Control Board as part of required submissions.
- Covered reporting entities are those already subject to Virginia's water withdrawal reporting requirements that supply water to a data center.
- Providers must separately report potable water and reclaimed water volumes supplied to covered users.
- Data must be submitted on a monthly reporting basis under the statute.
- The bill does not provide an alternative quarterly reporting pathway in place of monthly reporting.
- Water systems may report domestic, commercial, and industrial water volumes where feasible, without requiring changes to existing billing systems.



3.4 Mississippi Senate Bill 3410 (2026)

Mississippi Senate Bill 3410 (2026) authorizes the City of Brandon and the West Rankin Utility Authority to enter into contracts with data center operators for the construction, financing, operation, and maintenance of water and wastewater infrastructure. The bill authorizes negotiated agreements addressing infrastructure costs, utility service, reclaimed water, rates, capacity, and long-term operation of facilities serving data centers.

- The bill authorizes the City of Brandon and the West Rankin Utility Authority to enter negotiated contracts with data center operators for water and wastewater infrastructure development.
- Contracts may provide for reimbursement of infrastructure costs, including progress-payment arrangements, as negotiated by the parties.
- Contracts may include provisions for supplying reclaimed water for cooling, industrial, or operational uses.
- Agreements may define specific volumetric allocations for water supply and wastewater treatment capacity over the contract term.
- Parties may establish fixed or formula-based utility rates within negotiated agreements, subject to contract terms.
- Infrastructure agreements are limited to a maximum 30-year initial term, with renewals allowed in 10-year increments.



3.5 Florida Senate Bill 484 (2026)

Florida Senate Bill 484 (2026) establishes requirements for the siting and regulation of large-scale data centers. The bill addresses consumptive use permitting, utility infrastructure, confidentiality, reimbursement of public infrastructure costs, and state review of the impacts of large-scale data centers while preserving local government authority over land-use and comprehensive planning decisions.

- The bill creates a regulatory framework for large-scale data centers while preserving local land-use and comprehensive planning authority.
- It establishes consumptive use permitting provisions applicable to large-scale data centers and identifies factors for consideration by the Department of Environmental Protection and water management districts.
- It allows reclaimed water to be used in data center water supply arrangements where feasible within the permitting process.
- It requires that major modifications to large-scale data center water arrangements be treated as new permit applications.
- It directs a state study (OPPAGA) on impacts of large-scale data centers on infrastructure and utilities, including resource implications.
- It explicitly preserves local government authority over zoning, comprehensive planning, and development approvals for these facilities.



3.6 Minnesota House File 16 (2025)

Minnesota House File 16 (2025) establishes requirements for large data centers seeking a sales tax exemption. The bill conditions eligibility on compliance with specified requirements related to water use, energy, utility infrastructure, and environmental review, and includes provisions addressing utility cost allocation and reporting.

- The bill establishes a regulatory framework for large data centers focused on water use, energy impacts, and utility cost protections for ratepayers.
- It requires data centers to report water use to the Minnesota Department of Natural Resources.
- It includes utility cost protections intended to prevent data center-related infrastructure costs from being shifted onto residential ratepayers.
- The bill requires qualifying data centers to comply with applicable Minnesota clean energy requirements as a condition of receiving the tax exemption.
- The bill does not establish new statewide water withdrawal limits or water allocation thresholds. Instead, it emphasizes reporting, planning, and utility oversight.



3.7 Maryland Senate Bill 116 (2025)

Maryland Senate Bill 116 (2025) requires the Maryland Department of the Environment, the Maryland Energy Administration, and the University of Maryland Center for Global Sustainability, in coordination with the Department of Legislative Services and other state agencies, to study the potential impacts of data center development in Maryland. The study must evaluate environmental, energy, economic, and infrastructure impacts and submit findings and recommendations to the Governor and General Assembly.

- The bill requires the Maryland Department of the Environment, Maryland Energy Administration, and University of Maryland (with Legislative Services coordination) to conduct a statewide analysis of data center impacts.
- The analysis must include an assessment of potential impacts on air quality and water quality in Maryland.
- The study must evaluate impacts on the State's ability to meet environmental objectives, including Chesapeake Bay restoration goals.
- The required analysis includes assessment of mitigation technologies that could reduce environmental impacts from data centers and their feasibility in Maryland.
- The final report must be prepared for submission to the Governor and the General Assembly by September 1, 2026.
- The bill establishes a study and reporting requirement only and does not create permitting, allocation, or operational requirements for water use or water systems.



3.8 Idaho House Bill 895 (2026)

Idaho House Bill 895 (2026) establishes limitations on the consumptive use of water for cooling at certain new data centers. The bill also adopts legislative findings regarding the impacts of data center water use and directs the Director of the Idaho Department of Water Resources to consider those findings when evaluating new appropriations or transfers of water rights for data centers.

- Applies to data centers that begin construction on or after July 1, 2026.
- Prohibits qualifying data centers from using water for cooling purposes as a consumptive use unless the water is supplied by a municipal, water district, or water and sewer district water system.
- States legislative findings that consumptive water use for data centers conflicts with the local public interest, is contrary to the conservation of Idaho's water resources, and will adversely affect the local economy of the watershed or local area when the proposed place of use is outside the watershed or local area where the water originates.
- Directs the Director of the Idaho Department of Water Resources to consider these legislative findings when evaluating new appropriations or transfers of existing water rights for data centers.



4

Local Government Policies

While state capitals debate broad regulatory frameworks, municipal and county governments are the actual front lines where data center construction meets the local water tap. Local officials operate at the immediate, physical intersection of community governance, managing the day-to-day balance between lucrative commercial tax revenues and the finite capacity of municipal water treatment plants.¹³ For decades, local authorities took a welcoming, highly cooperative approach to digital infrastructure, utilizing flexible zoning laws and generous utility agreements to secure tech investments. However, the staggering, multi-million-gallon daily water demands of modern generative AI clusters have required a sharp pivot.¹⁴ Local boards are increasingly recognizing that unmanaged data center growth can drop residential water pressure overnight, drain community aquifers, and leave local families holding the bill for massive utility upgrades.¹⁵

Local policy across the country is shifting away from passive accommodation toward aggressive, self-preservation strategies. Local governments are increasingly moving past traditional zoning structures to wield their distinct authorities over land-use permits, municipal utility contracts, and building codes to protect their neighborhoods.¹⁶ By establishing strict local boundaries, municipal leaders are ensuring that digital expansion does not come at the direct expense of small-town water security and community stability.¹⁷



Aerial view of the Google Data Center in Council Bluffs, IA.

Photo: Chad Davis/flickr/CC BY 2.0

4.1 Harrisonburg, Virginia

At the start of 2025, the City Council amended the Planning and Development Code to require data center developments have a special use permit. The Special Use Permit (SUP) process outlined in Title 10, Chapter 3, Article V of the Harrisonburg City Code governs the evaluation and conditional approval of specific land uses that are not permitted by-right within designated zoning districts. Applications face detailed site, infrastructure, and utility reviews by city staff, followed by a formal public hearing process. Final authority to grant, deny, or place custom conditions on an SUP rests with the Harrisonburg City Council following a recommendation from the Planning Commission.

- Proposals necessitating the extension, change, or construction of public water, sewer, or storm lines require comprehensive review.
- Projects involving the installation of stormwater best management practices, including detention ponds or bioretention basins, must undergo structural review.
- Provisions restrict reconstruction, grading, or development activities within the designated Floodway or 100-year Floodplain district.
- Operations requiring specific drainage or backwashing functions are legally mandated to direct discharges into the municipal sanitary sewer system. This rule prevents chemically treated water or concentrated industrial waste from draining into the public storm sewer network.
- Zoning procedures route complex applications directly to the Director of Public Utilities, Director of Public Works, and City Engineer. This collective sign-off ensures high-demand utility configurations are audited for systemic resource impacts prior to development.



4.2 Indianapolis, Indiana

The Indianapolis Department of Metropolitan Development has introduced a regulatory framework creating a specialized zoning classification, the SU-47 Special Use District, to standardize the review and development of data centers within Marion County. This framework transitions the city away from unpredictable, project-by-project variance approvals toward a predictable system requiring mandatory rezonings, public hearings, and detailed structural, noise, and resource management strategies.

- Developers must obtain a formal, written "will-serve" verification letter from Citizens Energy Group or the local water utility serving the site. This documentation must explicitly verify that the existing public water infrastructure has sufficient capacity to handle the projected daily and peak consumption demands of the data center without disrupting service to existing municipal customers.
- The proposed framework mandates written utility confirmation regarding sanitary sewer availability. The provider must certify that the public network can handle both the volume and chemical composition of the facility's waste and wastewater discharges.
- Applications must include a detailed operational plan that explicitly profiles the facility's cooling technologies and conservation measures. Water managers can review these plans to audit the efficiency of the cooling mechanisms and anticipate localized liquid discharge rates.
- All prospective data centers are restricted from building by-right and must petition for a full rezoning to the SU-47 Special Use District. This process requires a public hearing before the [Metropolitan Development Commission](#), allowing public commentary on resource allocation and local zoning impacts.



4.3 Nashville, Tennessee

The Metropolitan Council of Nashville and Davidson County proposed Ordinance BL2026-1391 to amend Title 17 of the Metropolitan Code of Laws by adding specific data center classifications, definitions, and zoning conditions. The zoning code establishes distinct size tiers including accessory, small, medium, large, and campus categories. This tier system allows planners to apply unique regulatory restrictions based on the cumulative size and operational capacity of the facility. The framework introduces technological standards for cooling infrastructure to manage municipal utility impacts.

- The legislation defines closed-loop systems as operations that constantly reuse and recycle an initial load of water. This requirement reduces the facility's draw on external water sources and minimizes wastewater discharge back into the city network.
- Under the new definition, a closed-loop system cannot use evaporative cooling. This restriction prevents water loss from evaporation and forces developments to adopt alternative dry or liquid technologies.
- The ordinance outlines acceptable alternatives including air-cooled (dry) systems, rear-door heat exchangers, and hybrid dry economizers. Water managers can utilize this list to verify compliance via liquid immersion or direct-to-chip cooling designs.
- The definition of a data center mandates that square footage calculations must include all interior floors and supporting infrastructure. Utility managers can use this metric to evaluate the full scale of external substations, electrical yards, and mechanical yards on the lot.



4.4 San Angelo, Texas

The City of San Angelo, Texas, has adopted Data Center Land Use Regulations under Section 430, alongside dedicated water and sewer ordinances, to establish strict municipal oversight for all future data center developments within city limits. The regulatory framework shifts data centers into a conditional land use category, implementing maximum water-use allotments, mandatory closed-loop cooling technologies, and industrial pretreatment standards to protect local utility capacity and regional water supplies.

- Data centers must utilize closed-loop cooling systems that circulate fluids through sealed piping and air-cooled chillers.
- Facilities are prohibited from installing or switching to open evaporative cooling infrastructure, even during heat waves. The city will refuse to provide water to any facility utilizing evaporative systems.
- Water consumption for the initial filling of a cooling loop is capped at 15.0 gallons per square foot of gross building area.
- Continuous replenishment for minor fluid losses is capped at 3% of the total loop volume per building annually. Any unauthorized water consumption exceeding these established annual caps is prohibited.
- Scheduled draining and refilling of cooling loops are permitted no more than once every three years per building. Operators must submit 30 days of written notice to the city before executing a system flush.
- Spent cooling water containing HVAC additives must undergo industrial pretreatment to remove biochemical oxidation demand and metals before disposal.
- The disposal of chemical cooling water into the open ground or the municipal stormwater system is banned.



5

Community Benefits Agreements

As data center developers face a growing wall of state regulations and strict municipal zoning laws, Community Benefits Agreements (CBAs) have emerged as the primary tool for resolving the standoff between tech giants and local neighborhoods.¹⁸ Historically, tech firms relied on standard tax-incentive packages and vague promises of economic growth to secure local goodwill. However, as the massive, multi-million-gallon daily water loops and intense grid demands of generative AI clusters become a visible strain on small towns, everyday citizens are demanding legally binding guarantees before welcoming a facility into their backyard.¹⁹ CBAs transform neighborhood groups from passive bystanders into active negotiators, giving them the legal leverage to extract direct, long-term resource protections and tangible local investments from multi-billion-dollar corporations.²⁰

Modern data center negotiations are shifting away from handshake deals with city hall toward these enquirable, neighborhood-level contracts.²¹ Rather than settling for basic corporate charity, community coalitions are utilizing CBAs to weave strict hydrological safety nets and utility protections directly into a project's operational blueprint.²² By turning voluntary corporate social responsibility into legally binding, actionable contracts, CBAs ensure that digital expansion cannot happen at the expense of a community's shared environmental and financial future.



Photo: Ted Eytan/Instagram/CC BY-SA 4.0

5.1 Lancaster, Pennsylvania

The City of Lancaster, Pennsylvania, established a legally binding Community Benefits Agreement (CBA) to govern the environmental and operational standards of the planned AI Hub data center campuses. This agreement replaces general zoning for two 75-acre, three-building sites, addressing significant community concerns regarding local utility strain. The contract serves to legally mandate resource conservation, including strict water consumption limits and mandatory recycling, while providing financial mechanisms for compliance.

- The agreement establishes a maximum hard cap of 20,000 gallons of municipal water use per day per campus. This standard prevents unbounded resource exploitation and forces the developer to strictly manage internal system flows.
- Facilities must utilize closed-loop system mechanics designed to continuously recycle and reuse their internal water supplies. This technological mandate limits ongoing liquid consumption and reduces wastewater discharge volumes entering the city sewer network.
- The contract requires the developers to guarantee the proper mitigation, management, and control of environmentally unsafe substances located on or brought to the campuses. This safeguard protects the public watershed and nearby municipal storm networks from chemical contamination stemming from industrial server fluids or maintenance assets.



5.2 Colorado Senate Bill 102 (2026)

Colorado Senate Bill 26-102 was introduced in the 2026 legislative session to establish accountability measures for large-load data centers using 30 megawatts or more. Sponsored by Sen. Cathy Kipp and Rep. Kyle Brown, the proposal aimed to protect consumer rates, ensure grid stability, and manage regional resource impacts. The bill faced opposition from the technology sector and was postponed indefinitely by a Senate committee in May 2026. Key provisions included strict water tracking, utility cost responsibility, and operational constraints to prevent infrastructure strain.

- Data center operators were required to track and submit annual reports on total water consumption to the Colorado Department of Public Health and Environment (CDPHE), assisting in monitoring local industrial water use.
- Utilities were prohibited from supplying large-load facilities unless developers signed minimum 15-year contracts or covered infrastructure costs upfront, ensuring water-pumping infrastructure costs were not unfairly shifted to consumers.
- Interconnection was allowed only if utilities verified the facility would not degrade electrical grid reliability, protecting against outages that could disrupt water treatment operations.
- The legislation banned utilities from providing discounted, volumetric energy rates to large-scale data centers, preventing financial burden on local utility customers.
- The bill mandated community benefit agreements for projects in vulnerable neighborhoods and restricted the use of backup diesel generators to mitigate local noise and air pollution.



5.3 NAACP Template

The NAACP Community Benefits Agreement Template serves as a legally binding framework designed to protect host communities from the utility and environmental impacts of large-scale industrial projects. It establishes enforceable local equity mandates, civil rights protections, and independent oversight structures, moving beyond voluntary corporate promises. The template integrates specific, actionable clauses regarding resource consumption, neighborhood disruption, and environmental degradation. It serves to prevent data centers and similar infrastructure from shifting utility costs and environmental burdens onto marginalized populations. Ultimately, it empowers communities to engage in negotiation, ensuring that development aligns with local needs for transparency and sustainability.

- Developers must log and publicly disclose all water and electricity usage metrics on an annual basis. This reporting system allows utility managers to audit resource demands and assess cumulative strain on the municipal drinking supply.
- Independent environmental impact studies must be executed every five years to track shifting local conditions. Water managers can review these evaluations to identify localized water scarcity risks, watershed contamination, or declines in groundwater levels.
- Legal clauses establish financial penalties and the revocation of public subsidies if a facility violates environmental thresholds. This enforcement protocol prevents operators from exceeding agreed-upon water allocations without facing financial consequences.
- Agreements require the creation of an open-access digital dashboard to share periodic utility metrics.
- Project operators must financially contribute to a local benefit fund scaled to the physical size and resource demands of the development. These funds can be utilized by local entities to upgrade municipal water infrastructure or restore impacted watersheds.



5.4 Gaines Charter Township, Michigan

The Gaines Charter Township Planning Commission evaluated an amended rezoning package and draft Conditional Rezoning Contract submitted by the Microsoft Corporation for a proposed data center campus project. This legally binding agreement consolidates the project area under unified zoning parameters while applying enforceable operational conditions to the properties. The framework aims to manage potential community and infrastructure strains by establishing clear baselines for municipal asset utility. Final approval of the contract binds Microsoft to specific development, utility, and resource conservation standards.

- Microsoft is restricted from withdrawing any groundwater at the data center site to support server cooling or other operational systems. The facility must instead rely on public infrastructure connections to satisfy its daily utility demands.
- The project is required to connect directly to the Byron-Gaines Water System for its basic internal operations such as running bathroom sinks, running kitchen sinks, and flushing toilets.
- The data center development must incorporate a specialized, water-efficient cooling system architecture. Permitted engineering layouts include closed-loop structures, air cooling utilising ambient outside air, or a combination of innovative water-saving designs.
- The contract obligates the developer to pay for its proportionate share of water and sewer services required by the Byron-Gaines Utility Authority. Microsoft must fully fund any downstream water infrastructure upgrades necessary to serve the specific capacity demands of the project.
- Any liquid or wastewater discharge originating from the industrial property must comply with the Michigan Department of Environment, Great Lakes, and Energy Water Resources Division.



5.5 West Des Moines, Iowa

The West Des Moines Water Works (WDMWW) Board of Trustees approved a formal infrastructure and finance agreement with Microsoft Corporation to support the tech company's sixth data center cluster, known as Project Ruthenium. The contract codifies a utility partnership aimed at expanding municipal capacity, improving grid and water reliability, and advancing mutual climate sustainability goals. This legally binding arrangement transitions capital burdens away from residential ratepayers by requiring the developer to fund specialized equipment additions. The resulting infrastructure expansion allows the public utility to handle massive industrial data server cooling requirements alongside standard municipal user demands.

- Microsoft must reimburse the public utility for up to \$13 million to fully fund the installation of a new Aquifer Storage and Recovery (ASR) well system. This critical infrastructure adds 3 million gallons per day (MGD) of capacity to the broader municipal network.
- The financial framework requires the developer to pay 50% of the projected ASR well costs immediately upon the commencement of construction. The remaining capital must be disbursed in two installments.
- The agreement acknowledges \$21.56 million in cumulative capital infrastructure funding previously provided by Microsoft to support the WDMWW distribution network.
- New water main distribution pipelines will be physically extended to service the industrial site in coordination with municipal road improvement projects.
- Upon the execution and verification of private funding from both parties, utility staff will officially withdraw their funding application from the State Revolving Fund. This frees up public state-level loan capacity for other municipal communities.



5.6 El Paso, Texas

The City of El Paso, Texas, executed a Chapter 380 Economic Development Program Agreement with Worldwide LLC (a development entity for Meta) to govern the construction of a multi-billion dollar hyperscale data center campus in Northeast El Paso. The framework establishes an incentive structure based on private capital use, infrastructure coordination, and specific minimum job-creation metrics. The contract binds both parties to a series of land-use commitments and public infrastructure responsibilities intended to promote local economic growth while defining utility integration parameters. It functions as the foundational legal document regulating the project's physical, financial, and utility baseline requirements within the municipality.

- The operational footprint calculations allow for the use of up to 1.5 million gallons of water per day to satisfy server cooling and campus requirements. Water managers utilize this baseline metric to audit local aquifer strain and coordinate systemic capacity demands with El Paso Water.
- The company is legally obligated to design and construct substantial roadway and right-of-way improvements along Stan Roberts Sr. Avenue. This mandate guarantees that necessary utility corridors, including water mains and sewer piping connecting to the site, are established without depleting municipal capital improvement funds.
- The agreement structures coordination between the developer and regional power providers to handle the high electrical load required by the data center's cooling infrastructure. This oversight helps prevent localized power fluctuations that could impact critical municipal water pumping and treatment facilities.
- The City Council has initiated legislative steps to supplement the original utility parameters by negotiating a secondary Community Benefits Agreement.



5.7 Jefferson County, Missouri

The Jefferson County, Missouri, County Council introduced Bill No. 26-04102 to amend Title IV, Chapter 400 of the Code of Ordinances, known as the Unified Development Order (UDO). The ordinance establishes the county's first comprehensive zoning and land-use regulations specifically tailored to data centers to handle the rapid expansion of technology infrastructure. It moves data centers out of ambiguous land-use categories by defining performance standards, physical constraints, and infrastructural review checkpoints. These standards are intended to mitigate the physical footprint and operational strain of data center campuses on surrounding residential populations, the regional electric grid, and local watersheds.

- Before plan approval, developments go through an audit regarding their projected storm water runoff impacts. County planners utilize this framework to assess potential disruptions to existing stormwater collection systems or surrounding natural watershed areas.
- The ordinance mandates an evaluation of the availability and adequacy of public facilities to satisfy industrial resource demands. Water managers can use this checkpoint to verify that distribution pipelines can handle intake volumes without threatening regular municipal customer service.
- Data centers are subject to strict alignment with state and county health codes regarding wastewater disposal and potable water access.
- Industrial data center campuses face continuous enforcement metrics to eliminate off-site hazards to life or property. The framework targets environmental pollution, noise limits, and general industrial nuisances that could impact regional public health, safety, and welfare.



6.1 Pima County, Arizona & Project Blue

Pima County, Arizona illustrates the high-stakes clash between rapid technological growth and desert water scarcity. Situated entirely within the critically water-stressed Sonoran Desert, the region faces severe long-term supply challenges as the Colorado River Basin copes with historic deficits. Despite these intense environmental constraints, Pima County has drawn interest from hyperscale developers looking to leverage the state's favorable tax incentives and robust regional fiber network. Thus, Pima County has become a vital testing ground for local resource defense, where strict municipal oversight, groundwater preservation mandates, and an active, climate-conscious public are pushing back against corporate secrecy to demand unprecedented utility transparency before the taps are turned on.

Project Blue is a massive, \$3.6 billion hyperscale data center campus spanning nearly 300 acres in unincorporated Pima County.²⁴ This was the first hyperscale proposal and prompted a revision of the Pima County Code. This revision is still ongoing, but officials are looking to modify the Specific Plan process to include future cooling technology disclosures, an updated review process, flood control improvements, and a value versus use analysis.

Project Blue ignited intense community backlash over its projected fluid resource footprint. In mid-2025, public opposition culminated in a unanimous vote by the Tucson Mayor and City Council to deny municipal water service to the site, explicitly stating that the city would not allocate its drinking water resources to support the facility.²⁵ Seeking to bypass municipal refusal, contractors working on the site illegally hauled approximately 650,000 gallons of city utility water via tanker trucks for construction dust control.²⁶ In response, Tucson Water officials formally revoked the developer's hydrant meters and demanded full financial restitution.²⁷



6.1 Pima County, Arizona & Project Blue

Cut off from municipal infrastructure, the developers shifted their strategy directly to the desert floor. In May 2026, the Arizona Department of Water Resources approved two new commercial groundwater wells for the project under an out-of-state subsidiary, Bobcat Tucson Water LLC.²⁸ While the project was required to transition into a "closed-loop air-cooled" campus, which drastically lowered its operating footprint from hundreds of millions of gallons down to an estimated 15,000 to 20,000 gallons per day (or up to 31 million gallons annually), the circumvention of municipal authority highlighted a gaping vulnerability in regional water security: the state's groundwater codes.²⁹

Local Insight: Inside the City of Tucson Planning Department

Prior to recent developments, Tucson's data center footprint was small, localized, and low-impact. The city historically hosted 11 non-hyperscale data centers, which were primarily small, "mom and pop" networking companies storing data for local small businesses. The largest of these existing facilities is only 34,000 square feet and relies on just one or two backup generators. The arrival of Beale Infrastructure completely upended this small-scale landscape by introducing a corporate ultimatum that bypassed traditional planning collaboration. When Beale opened conversations with the jurisdiction, staff were immediately bound by a strict Non-Disclosure Agreement (NDA) that actively prevented internal and external collaboration. The process was presented strictly as an "approve this or no deal" proposition, leaving no room for planning discussions.

Because the community is highly environmentally conscious and had recently completed its General Plan, the Mayor and Council quickly halted rapid ordinance changes to protect local resources. Tucson has maintained the exact same volume of water from the 1990s to today despite significant population growth, a feat achieved by becoming a highly water-smart community. Faced with friction in the city, Beale shifted strategies by establishing its footprint in unincorporated Pima County and attempting to annex into Tucson solely to secure municipal water access. Concurrently, Beale was negotiating a separate setup in nearby Marana, Arizona. This simultaneous maneuvering confused the public regarding which

6.1 Pima County, Arizona & Project Blue

project was going where, prompting Marana residents to actively travel to Tucson public forums to advise Tucson officials on how to handle the developer.

The public process surrounding the necessary annexation revealed a highly fractured, angry, yet poorly organized community response. Organizers anticipated massive crowds, planning for 500 attendees across four events consisting of two in-person and two virtual sessions. However, only 60 people showed up in total. Of those 60 attendees, only one-third were actual City of Tucson residents, while the remaining two-thirds were residents from Pima County or neighboring municipalities that lacked data center moratoriums and were actively accepting tech applications. While turnout was low, the in-person attendees were visibly angry. To ensure broader, more representative feedback, planners chose to leave the public feedback survey open significantly longer.

Recognizing that the data center trend was moving faster than local policy, planning staff paused to gather intelligence before formalizing policies. They formed a Technical Advisory Committee (TAC) to study infrastructure impacts, regulatory frameworks, energy mixes, and non-potable water alternatives. This collaborative committee brought together a diverse group of regional stakeholders, including Tucson Electric Power (TEP), Arizona State University (ASU), Davis-Monthan Air require Base, and local environmental groups.

Southern regional communities facing similar pressures also joined the outreach process to gather data for updating their own local regulations. Tucson planning staff took all public input, routed it through the TAC, and successfully summarized and vetted the region's core resource priorities.

Tucson is currently in the middle of this regulatory overhaul, navigating two remaining iterations of public input and comment. The overarching goal is not to outright prohibit data centers, but to establish innovative, protective rules. Staff are actively drafting a comprehensive large-scale data center water ordinance to codify resource protections. Planners also approached TEP to initiate early utility conversations, specifically focusing on

6.1 Pima County, Arizona & Project Blue

redefining what legally constitutes a "large-scale" data center based on escalating square footage metrics.

This data center strain has sparked a broader public energy discussion, requiring the data centers, Mayor, and Council to go through a mandated special process to receive direct public feedback on energy impacts. While data centers currently maintain roughly 10 minutes of battery backup to keep servers live while industrial diesel generators kick in, conversations are shifting toward whether these massive battery footprints could eventually help support the broader municipal grid. Currently, however, the developers remain focused strictly on secure energy infrastructure rather than regional water or grid integration infrastructure.

6.2 Rosemount, Minnesota & Meta

Rosemount, Minnesota, is a Midwest proving ground for balancing massive hyperscale industrial momentum with municipal resource stewardship. Located in the southeast portion of the Twin Cities metropolitan area, the city has become a major target for tech development, including Meta's \$800 million, 715,000-square-foot data center campus expected to open in late 2026.³⁰ While developers and city administrators highlight the economic benefits of this massive land-use expansion, the project has pushed regional groundwater allocation and wastewater management into the local spotlight. Peak operational projections estimate that the Meta facility will draw up to 100,000 gallons of water per day from Rosemount's municipal groundwater system.³¹ This demand is compounding broader anxieties across Dakota County, where nearby projects, like the proposed development in neighboring Farmington requiring nearly 3 million gallons per day, have triggered fierce grassroots pushback and legal challenges.³² In Rosemount, Meta is utilizing closed-loop design requirements and strict public utility parameters to manage heavy industrial water loads, establishing a crucial regulatory template for the water-rich but ecologically sensitive Upper Midwest.

The Minnesota Department of Natural Resources (DNR) serves as the state's primary gatekeeper for hydrological security, managing the extraction of public waters to balance economic expansion with natural conservation. As hyperscale data centers rapidly scale their operations across the Twin Cities metropolitan area and in greater Minnesota, the DNR's role has transformed from a routine permitting office into a crucial defensive shield for the state's vulnerable aquifers. Under Minnesota Statute 103G.265, the DNR is legally mandated to manage all regional water resources to ensure an adequate long-term supply for domestic, agricultural, and power generation purposes.³³ The baseline trigger for DNR oversight is remarkably low compared to the massive loads demanded by technology infrastructure. Any entity extracting more than 10,000 gallons of water per day or 1 million gallons per year from surface or groundwater sources must secure a formal Water Appropriation Permit.³⁴ Minnesota law establishes a rigid, sequential hierarchy for water use. First-priority use is strictly reserved for domestic water supplies (household drinking water). Industrial and commercial uses, including data center cooling, are legally relegated to a lower priority class.



6.2 Rosemount, Minnesota & Meta

Historically, a glaring regulatory loophole allowed data center developers to bypass direct DNR scrutiny. Instead of drilling private wells, developers routinely connected directly to municipal water systems. Because the local city already held a large Water Appropriation Permit from the DNR, the tech companies could "hide" behind the municipal allocation, effectively shielding their individual corporate footprints from direct state environmental reviews.³⁵ This systemic blind spot triggered a swift legislative correction. Landmark statutory changes passed by the Minnesota Legislature, like Minn. Stat. §§ 103G.271 and 103G.265, permanently altered how the DNR handles high-volume tech campuses.³⁶

For any data center project projected to consume over 100 million gallons annually (or more than 250,000 gallons per day), developers are legally required to engage in a formal DNR pre-application process. This allows the state to evaluate site-specific hydrological viability long before final site selection occurs.³⁷ The updated laws explicitly state that the DNR's strict regulatory conditions apply regardless of whether a data center uses an on-site well or hooks into a public municipal supply. The DNR now possesses the legal authority to require cities to alter their own municipal water permits to fulfill state-mandated data center conservation rules. Before the DNR can approve a permit for a facility exceeding the 100-million-gallon threshold, the agency must legally prove that public health and watershed health are fully protected.³⁸ Developers must undergo extensive aquifer stress testing to measure how severe drawdown cycles will impact surrounding private and municipal wells. Under DNR scrutiny, operators must prove they have "reasonably considered" alternative water-saving technologies.³⁹ This includes passing audits on potential water recycling, implementing closed-loop dry cooling, and directly funding regional watershed replenishment efforts.

To permanently move away from reactive zoning battles, the state allocated specialized funding to the DNR to build the Water Availability Atlas.⁴⁰ Developed in tandem with the Minnesota Geospatial Information Office, this centralized tool quantifies exactly how much water is available across various regional aquifers.⁴¹ By publishing this real-time hydrological data, the DNR provides local planning boards and state economic groups with a standardized methodology to block tech corridors from pitching hyperscale facilities over highly sensitive, slow-recharging aquifers.

6.2 Rosemount, Minnesota & Meta

Local Insight: Inside the Rosemount Planning Department and Community Engagement Department

Rosemount is historically an industrial hub, hosting roughly ten major manufacturing companies, including a heavy-use oil refinery, but the city possessed no large data centers until recently. The rapid regional expansion of the tech sector changed municipal workflows entirely as promoters actively prospecting local land began flooding the city with requests for daily utility metrics, making formal consumption estimates a standard part of the planning process. When Meta arrived to develop its site on land sold by the University of Minnesota, the city engaged in candid infrastructure negotiations. The City's Public Works department determined that in order to properly serve the site with water supply capacity, a planned trunk watermain would need to be extended. While this utility expansion was already part of Rosemount's long-term master plan, Meta's massive footprint accelerated the construction timeline. Ultimately, Meta paid for 50% of the \$4 million capital cost of this trunk watermain line extension project, and in alignment with standard City policy where all developers cover the expense of infrastructure directly related to their development, Meta paid for 100% of public infrastructure systems such as the public streets and utilities that directly serve the facility.

Public opposition often stems from deep-seated misconceptions about data center infrastructure, water volumes, and corporate subsidies. Residents frequently assume the city gives away valuable infrastructure or sweetens deals at the expense of local taxpayers, but Rosemount actually leveraged intense industry interest to require developers to fund public utility expansions. Furthermore, while the community expressed fears regarding potential groundwater pollution from server farms, public works found these anxieties lacked supporting evidence. A comparative city study matching data centers against other industrial and commercial land uses revealed surprising results. Because Meta's Rosemount facility utilizes closed-loop air cooling, its operational water use is lower than a handful of busy local restaurants, a standard hotel, and other nearby moderate and large-scale industrial and commercial businesses, showing that data center water use is not fundamentally different from other common land uses.

6.2 Rosemount, Minnesota & Meta

Tech firms are highly attracted to Minnesota because the colder climate and perceived abundance of freshwater significantly lower data center utility burdens. Thanks to the local climate, facilities can rely heavily on outside air cooling, keeping peak seasonal water loads low. However, there is a blind spot regarding deep technology access. While the local building department receives structural schematics, developers only provide the Public Works team with high-level summaries of their cooling technology, leaving granular mechanical details strictly undisclosed to utility operators. Instead, the department manages the facility through macro expectations, treating wastewater flow as equally critical to raw water intake, backed by an ongoing obligation for developers to notify the city if their baseline water needs change.

While developers like Meta actively tout Community Benefit Agreements (CBAs), establishing local programs that fund education grants, the city is moving to replace voluntary corporate goodwill with permanent policy. Because Rosemount has no specific design or mitigation standards outside of general standards within the zoning district, city leaders recently enacted a strict one-year data center moratorium to halt new applications. This freeze is designed to give staff the necessary time to study the industry and transform raw data into formalized zoning ordinances and regulatory templates. Rosemount leaders view the pause as a vital necessity, emphasizing the importance of crowdsourcing experiences and noting that sharing operational stories with other regional water managers provides a blueprint that can protect public utilities from all future large-scale water consumers.

6.3 The Dalles, Oregon & Google

The Dalles, Oregon, serves as the foundational legal precedent for data center water transparency, illustrating how technology giants utilize municipal relationships and legal coercion to obscure their resource footprints. Located along the meteorologically dry Columbia River basin, an area severely impacted by multi-year megadroughts, the city has hosted Google's very first corporate-owned data center campus since 2006.⁴² For over a decade, Google and city administrators established an institutional pact to shield the tech giant's resource demands from public scrutiny. Under their early development agreements, the city was contractually obligated to cooperate with Google to aggressively fight public records requests.⁴³

When media outlet The Oregonian/OregonLive filed a formal public records request to track the facility's impact on the local aquifer, the Wasco County District Attorney ruled that the information must be released. Rather than complying, the City of The Dalles launched a preemptive lawsuit against the journalists to block the records.⁴⁴ Backed by over \$106,000 in direct legal funding provided entirely by Google parent Alphabet, the city argued that site-specific water consumption constituted a protected "corporate trade secret" that would place the company at a distinct competitive disadvantage if exposed.⁴⁵ This aggressive positioning effectively blocked local farmers, tribal nations, and conservation groups from understanding the true pace of industrial water depletion in an oversubscribed watershed.

The 13-month legal showdown served as a primary national test of state public records laws. Facing mounting public outrage, the risk of an adverse judicial precedent, and a highly coordinated defense led by the Reporters Committee for Freedom of the Press, the city and Google abruptly capitulated.⁴⁶ In a comprehensive court settlement, the city dropped its lawsuit, agreed to pay \$53,000 to cover the journalists' legal fees, and turned over a 10-year historical spreadsheet of Google's actual annual water draw.⁴⁷



6.3 The Dalles, Oregon & Google

The unsealed records exposed a staggering reality: Google's water consumption had nearly tripled in a five-year window following the opening of a third local data center building, jumping from 113.1 million gallons in 2016 to 355.1 million gallons in 2021. At the time of disclosure, this single tech infrastructure footprint was devouring 29 percent of the entire city's municipal water supply.⁴⁸

The ripple effect of this transparency victory fundamentally altered the corporate landscape. Immediately following the settlement, a Google spokesperson formally announced that the company would permanently abandon its "trade secret" legal defense for site-level utility metrics, making Google the first tech giant to systematically publish site-specific water consumption data across its entire national portfolio.⁴⁹

Despite the milestone disclosure, the underlying resource strain has severely intensified with the onset of the artificial intelligence (AI) boom. By 2024, Google's annual water draw climbed to 434.4 million gallons, accounting for a full third of the city's entire supply.⁵⁰ By 2025, that figure quintupled from its 2012 baseline, skyrocketing to roughly 550 million gallons annually, meaning that nearly 40 percent of all municipal water in The Dalles is now used to cool Google's local servers.⁵¹

To sustain this exponential growth, Google has completed a fourth data center building and is actively finalizing a fifth campus on the site.⁵² This continuous scaling has sparked severe logistical anxiety, as federal laws strictly bar new industrial customers from drawing directly from the main stem of the Columbia River. Consequently, local leaders are desperately seeking alternative water sources to prevent residential shortfalls.⁵³

The city has engaged in a controversial campaign pushing a federal bill (H.R. 655) to cede public lands within the Mount Hood National Forest to the city, which would allow them to double the size of the local Crow Creek Reservoir.⁵⁴ While city officials publicly insist that the reservoir expansion is a long-term municipal plan entirely unrelated to the tech giant, the city's official 2024 Water Master Plan tells a different story.⁵⁵ The long-term planning documentation explicitly builds in provisions for an "unnamed large industrial user" requiring

6.3 The Dalles, Oregon & Google

an average allocation of 1 million gallons of water per day, the exact operational load baseline currently demanded by Google.⁵⁶

While Google has heavily invested \$29 million into municipal utility updates in exchange for a staggering 92 percent property tax discount,⁵⁷ local agricultural operators, fishing industries, and conservation groups note that the Columbia Basin's water rights are completely oversubscribed.⁵⁸ The Dalles stands as a cautionary warning for your nationwide report: even when absolute legal transparency is successfully won, it does not stop the structural, accelerating resource demands of hyperscale infrastructure from displacing a community's environmental safety net.⁵⁹

6.4 Hill County, Texas & RCM Hill, LLC

Hill County, Texas, located in the high-stress Blacklands region between Dallas and Waco, represents a critical intersection of zoning standoffs and extreme resource projections. Coping with an influx of up to eight proposed hyperscale developments that threatened severe grid strain and localized resource depletion, the Hill County Commissioners Court enacted a strict emergency construction pause on May 12, 2026. The "Green Energy and Data Center Moratorium" imposed a temporary one-year freeze on starting new data centers over 1,000 square feet, battery energy storage systems over 5 megawatts, and related substations or cooling infrastructure in unincorporated areas. The emergency measure passed by a narrow 3–2 vote, with Hill County Judge Shane Brassell casting the deciding tie-breaking vote. County Attorney David Holmes explicitly warned the court before the vote that they were walking into a high-stakes legal trap, stating, "You're damned if you do and damned if you don't."⁶⁰ Local officials pushed forward anyway, driven by constituent pressure to protect rural ranchlands, municipal water availability, and overtaxed emergency services.

The corporate backlash arrived almost immediately. On May 27, 2026, Texas-based infrastructure developer RCM Hill, LLC filed a sweeping \$100 million federal lawsuit in the U.S. District Court for the Western District of Texas (Waco Division) against Hill County, Judge Brassell, and the two voting commissioners.⁶¹ The lawsuit detailed how the developer had spent 16 months and over \$1 million conducting rigorous due diligence, including environmental, biological, wetland, water, fiber, and gas studies, to prepare a massive 1,235-megawatt hyperscale campus known as "Project Aquila."⁶² RCM Hill had already entered into four binding land contracts to acquire more than 800 contiguous rural acres near Hillsboro, committing to pay landowners over \$80 million (an average of \$100,000 per acre).⁶³ The developer's land agreements and financial backing were completely disrupted by the freeze just as ERCOT advanced the project into its system stability pipelines.

RCM Hill's legal argument targeted the structural limitations of Texas county government, asserting that the moratorium was *ultra vires* (acting beyond legal authority).⁶⁴ Under the Texas Constitution, unincorporated county territories lack the broad zoning and police powers explicitly granted to home-rule cities. RCM Hill produced signed correspondence from Judge Brassell on official commissioners court letterhead verifying that Hill County had



6.4 Hill County, Texas & RCM Hill, LLC

no zoning plans, building permits, or certificate of occupancy requirements in unincorporated areas. By introducing a retroactive, discretionary approval system, the county committed what the developer characterized as an illegal regulatory taking under the Fifth and Fourteenth Amendments, alongside severe breaches of contract and due course of law.⁶⁵

Recognizing that a prolonged federal battle against a multi-billion dollar project could easily push the rural county into bankruptcy, the commissioners court retreated. On June 4, 2026, the Hill County Commissioners Court held an emergency meeting and voted to rescind the data center moratorium entirely.⁶⁶ This swift legal defeat serves as a warning for your national report: without explicit, state-level protective statutes or delegated zoning powers, rural local governments face extreme financial liability if they attempt to independently block tech expansion.⁶⁷

6.5 Saline, Michigan & Related Digital

Saline Township, Michigan, a rural agricultural community located south of Ann Arbor in Washtenaw County, exposes how the rapid artificial intelligence (AI) infrastructure boom is actively targeting farmland and bypassing local democratic planning.⁶⁸ In late 2025, an infrastructure consortium spearheaded by Related Digital pushed to rezone 250 acres of prime agricultural land along West Michigan Avenue.⁶⁹ The intent was to clear the path for "The Barn," a massive, multi-billion-dollar hyperscale data center campus engineered to house OpenAI's legendary 1.4-gigawatt "Stargate" AI supercomputing platform purpose-built for Oracle.⁷⁰ Driven by fierce constituent protests over the massive strain a gigawatt-scale development would place on regional infrastructure, the local planning commission rejected the necessary zoning modifications.⁷¹ The township board quickly followed with a decisive 4–1 vote to deny the project entirely.⁷²

The community's democratic victory was short-lived. Just 48 hours after the public vote, the developer sued Saline Township in the Washtenaw County Circuit Court.⁷³ The lawsuit relied on a highly disruptive legal maneuver known as "exclusionary zoning," arguing that because the township lacked land specifically designated for heavy industrial use, its blanket denial constituted an arbitrary, illegal barring of a legitimate and necessary modern commercial utility under Michigan law.⁷⁴ Legal advisors explicitly warned township officials that their legal leverage was highly limited. Even if they bankrupted the municipality fighting the case, developers could easily partner with a nearby public institution, such as the University of Michigan, to build massive campuses that are entirely exempt from local municipal zoning, public hearings, and local water limitations.⁷⁵

Unable to absorb the astronomical costs of a prolonged legal battle against a multi-billion-dollar consortium backed by Blackstone, the cash-strapped township board was required to sign a court-approved consent judgment to settle the lawsuit.⁷⁶ To mitigate local anger, the settlement requires the developer to grant the township a 12-year industrial tax abatement at a 50% reduction, still guaranteeing a massive \$1.6 million in new annual tax revenue, alongside \$14 million in direct community investments, including a \$10 million contribution to the Saline Recreation Center.⁷⁷ Crucially, the township required a total prohibition on water-intensive evaporative cooling systems.⁷⁸ The final site design mandates a closed-loop



6.5 Saline Township & Related Digital

air-cooled system verified by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) to consume roughly the same amount of water as a standard office building.⁷⁹

Despite these resource protections and a June 2026 celebratory groundbreaking attended by Governor Gretchen Whitmer and OpenAI CEO Sam Altman, the required development sparked severe community hostility.⁸⁰ The intense public friction culminated in the emotional resignation of Township Treasurer Jennifer Zink, who stepped down after facing targeted public death threats and a toxic wave of misinformation.⁸¹ This case highlights a critical lesson for your report: the competitive pressures of the AI infrastructure boom can legally override local democratic decisions, turning quiet agricultural corridors into high-stakes infrastructure battlegrounds.⁸²

6.6 San José, California & Microsoft

The San José Data Center project is a massive industrial development located on an approximately 19.5-acre site.⁸³ The project involves the demolition of existing on-site structures to construct a 396,914-square-foot data center complex consisting of two multi-story data center buildings.⁸⁴ Designed to meet the skyrocketing demands of cloud computing and artificial intelligence, the facility is planned to operate 24 hours a day, seven days a week, and features a dedicated on-site substation to handle its extensive electrical load.⁸⁵

A critical technical and regulatory aspect of the project is its emergency backup power infrastructure, which initially proposed the installation of up to 224 renewable natural gas (RNG) generation units.⁸⁶ Because the facility's total generating capacity is designed to reach up to 99 megawatts (MW), the project falls just under the 100 MW threshold, allowing the developer to seek a Small Power Plant Exemption (SPPE) from the California Energy Commission (CEC).⁸⁷ This exemption process successfully referred the primary environmental oversight back to the City of San José as the lead agency under the California Environmental Quality Act (CEQA).⁸⁸ Throughout 2025 and into early 2026, the city processed essential environmental addendums to refine the project's design, utility pipeline connections, and construction phasing.⁸⁹

While the developer's shift toward renewable natural gas generators aligns with San José's strict municipal decarbonization goals, the project has drawn substantial scrutiny from environmental advocates and local community groups.⁹⁰ Grassroots mobilization in the Alviso area has focused heavily on the cumulative air quality impacts and localized health risks associated with clustering high-density infrastructure near residential communities.⁹¹ Furthermore, community members have leveraged public comment periods to voice concerns over the facility's long-term impacts on local water resources for cooling, demanding absolute corporate transparency regarding utility draws and pushing city planners for stricter operational safeguards.⁹²



6.6 San José, California & Microsoft

Local Insight: Inside the City of San José Office of Economic Development and Cultural Affairs

Unlike many water-stressed Western municipalities that are actively restricting data infrastructure, the City of San José is strategically trying to attract data center developments. This pro-growth stance is heavily driven by distinct financial and resource incentives, as the energy revenue generated from data center operations can reach \$3 million to \$6 million per year per facility in an unrestricted market, injecting substantial capital directly into city utility funds. Furthermore, due to highly successful city-wide conservation campaigns, San José currently possesses a surplus water capacity, and municipal leaders are actively looking to sell more water to industrial users to capitalize on their efficient resource management. This expansion remains manageable because the physical size of server infrastructure in San José is highly compact compared to national trends, with the city's data centers measuring roughly 1/10 to 1/20 the size of the massive hyperscale complexes found in other states. For example, a standard air-cooled data center in San José consumes a minimal 4 acre-feet of potable water per year, which is roughly 1.3 million gallons.

San José does not give technology developers a pass on environmental compliance; instead, data centers are treated exactly like any other heavy industrial developer through a standardized regulatory pipeline. Even in zoning districts where data centers are allowed, developers are legally required to secure a Special Permit that automatically triggers a comprehensive environmental review process. The primary regulatory mechanism governing these reviews is the California Environmental Quality Act (CEQA). If a proposed data center is projected to draw more than 40 megawatts (MW) of energy, it immediately triggers mandatory CEQA regulations. Under this statutory framework, developers must execute a highly detailed environmental impact study that is made completely accessible to the public, ensuring absolute transparency. Furthermore, the California Energy Commission actively assesses the long-term regional water supply, while water usage is strictly monitored during both wet and dry seasonal conditions for both potable and recycled water systems.

6.6 San José, California & Microsoft

To process incoming inquiries smoothly without compromising on safety or compliance, San José relies on institutional synergy through an internal cross-departmental task require known as the Data Center Development Team. This specialized group functions by uniting representatives from the planning, building, fire prevention, public works, water division, and energy departments. To ensure absolute adherence to municipal code, all data center developers must undergo a mandatory second coordination meeting specifically with the CEQA compliance officers and the planning/building teams. This strict process is currently being stress-tested by a massive Microsoft and STACK Infrastructure campus development, which stands as the largest project the city has ever handled. Ultimately, San José's approach demonstrates that aggressive economic recruitment can successfully coexist with rigid, state-mandated environmental review frameworks.

The structural policy limitations analyzed throughout this report emphasize a critical reality for public officials, urban planners, and environmental advocates: managing the intensive resource demands of hyperscale data centers requires moving away from reactive, ad hoc zoning battles toward a standardized, proactive regulatory framework. For decades, local planning commissions and municipal water authorities across the United States evaluated data center developments using outdated guidelines originally written for standard commercial offices or light manufacturing plants. This systemic mismatch allowed multi-billion-dollar technology developers to secure massive water allocations and electrical grid commitments under the cover of absolute institutional secrecy. However, as local water security and grid stability concerns escalate, a growing number of forward-thinking jurisdictions are independently codifying specialized, highly protective infrastructure policies.

This Resources section serves as a centralized, curated compendium of these pioneering regulatory frameworks, mapping out the diverse statutory mechanisms currently being deployed to manage data infrastructure. The following collection gathers real-world legislative examples, municipal water ordinances, state-level natural resource mandates, and localized data center zoning templates from active tech corridors across the country. Rather than viewing data center regulation as a binary choice between unconditional economic promotion or outright prohibition, these frameworks demonstrate how to institutionalize long-term resource protection.

By analyzing these existing policies, report readers can examine the concrete mechanisms used to enquire mandatory multi-agency environmental audits, pierce corporate non-disclosure agreements (NDAs), establish steep volumetric utility fees for industrial cooling water, and eliminate the legal loopholes frequently exploited by tech developers. Ultimately, this collection provides local governments with an actionable toolkit of model language and proven regulatory templates, offering a clear, data-driven roadmap to protect shared public utilities and pristine community aquifers before groundbreaking begins.

7.1 Fairfax County, Virginia

The Fairfax County Data Centers Zoning Ordinance (ZO 112.1-2024-9), adopted on September 10, 2024, revises the zoning permissions and use-specific standards for data centers. The ordinance establishes requirements for where data centers may be located, when special exception approval is required, building and site design, setbacks, equipment screening, and noise compliance. It also includes transitional provisions for applications accepted before July 16, 2024. The ordinance does not establish a separate framework for water resource management, but several provisions govern site development and operational requirements that may be relevant to water resource managers.

- Requires pre-construction and post-construction noise studies demonstrating compliance with the county's Noise Ordinance.
- Requires cooling and ventilation equipment, power generators, and accessory electrical substations to be enclosed within a building or, where enclosure is not feasible, screened by a wall or similar barrier.
- Requires backup generators and other ground-mounted operational equipment to be located at least 300 feet from adjacent residential districts or residential properties, or to be separated from them by the data center building, unless a lesser distance is approved through a special exception.
- Establishes maximum by-right building size thresholds in applicable zoning districts, including an 80,000-square-foot limit in the I-4 District, with larger facilities requiring special exception approval except where otherwise specified.
- Requires special exception approval for data centers that do not meet the ordinance's by-right use standards.
- Requires new data centers to be located at least one mile from a Metrorail station, unless a lesser distance is approved through a special exception.



7.2 Nashville, Tennessee

Metropolitan Nashville Ordinance BL2026-1391 amends the Metropolitan Zoning Code to establish data centers as a distinct land use and creates separate classifications for accessory, small, medium, large, and campus data centers based on size and electrical capacity. The ordinance specifies where each type of data center may be located, establishes zoning approval requirements, and sets standards for site design, operations, permitting, and annual compliance reporting. It also establishes application requirements addressing utility capacity, noise, water consumption, energy use, lighting, and transmission infrastructure.

- Requires all cooling and ventilation equipment to operate using a closed-loop system.
- Requires applicants to submit written confirmation from the water and sewer utility that adequate capacity is available to serve the proposed data center before a zoning permit may be approved.
- Requires applicants to submit a water consumption and sustainability plan identifying the facility's total water requirements, strategies to reduce or mitigate excessive water use, and documentation demonstrating that the facility will not significantly strain local or regional water supplies.
- Requires the water consumption and sustainability plan to assess vulnerability to water scarcity and drought, identify applicable drought monitoring and forecasting systems, describe drought management measures, and identify advanced low-water or water-free cooling systems consistent with the Metropolitan Water Services Department's adopted Drought Management Plan.
- Requires the energy consumption and sustainability plan to describe sustainable practices intended to limit or offset the facility's water use.
- Requires operators to submit an annual compliance report.



7.3 The Sierra Club

The Sierra Club Local Government Resources Guide & Model Policy (Version 7.2) is a model ordinance intended for Pennsylvania municipalities considering regulation of large-load data centers. The document establishes definitions, conditional use requirements, application submittals, siting standards, operational requirements, monitoring, and enforcement provisions. It addresses associated infrastructure, including cooling systems, on-site generation, water and wastewater infrastructure, and cumulative impact review. The guide states that it is a draft for municipal review and recommends solicitor review before adoption.

- Requires applicants to submit a Cooling, Water, Wastewater, and Process Chemicals Plan.
- Requires applicants to disclose water service agreements, capacity reservations, drought contingency provisions, and any priority water service during drought or system constraints.
- Prohibits discharge of cooling fluids, process chemicals, and related wastewater except where authorized by the applicable permitting authority and approved in the municipal record.
- Requires project plans and cumulative impact analyses to identify and evaluate water demand, wastewater, stormwater infrastructure, and cumulative water and wastewater impacts.
- Requires LLDC siting decisions to consider water and sewer capacity; establishes phase-specific caps on water use and wastewater discharge; prohibits water-consuming turbine configurations unless specified conditions are met; and requires applications involving on-site generation to include a plan addressing power-generation water use, wastewater, monitoring, emergency response, and material changes.



7.4 Urban Land Institute

The Urban Land Institute Local Guidelines for Data Center Development provides guidance for local governments on planning for, regulating, and zoning data center development. The document describes site selection considerations, planning and zoning approaches, and a model zoning ordinance that jurisdictions can adapt. It also includes case studies illustrating how communities have planned for and regulated data center development.

- Identifies municipal water supply and wastewater discharge infrastructure as site selection considerations, noting that some data centers require greater municipal water supply than typical industrial development and that water-based cooling may require sewer connections, on-site treatment, or drainage infrastructure.
- States that the climate goals of many hyperscalers and developers are driving demand for recycled rather than potable water.
- Recommends that municipalities identify suitable locations for data centers based on power availability, infrastructure, and environmental impacts and designate more than one potential development area.
- States that development conditions negotiated with municipalities may include infrastructure improvements, environmental protections, and community benefits.
- Recommends zoning standards requiring cooling, ventilation, power generation equipment, and accessory electrical substations to be enclosed or screened where full enclosure is not mechanically feasible.
- Recommends that data center buildings and ancillary equipment in industrial areas adjacent to residential or other noise-sensitive uses be located at least 200 feet away or comply with the commercial-area equipment screening standards.



7.5 York County

The York County Planning Commission Data Center Model Ordinance provides model zoning standards for municipalities regulating data centers. The ordinance establishes requirements for site design, setbacks, noise, utilities, environmental review, safety, screening, decommissioning, and resource-efficient development. It is intended to be incorporated into local zoning ordinances and allows municipalities to modify standards to reflect local conditions.

- Requires written verification from the applicable utility provider that water or other cooling systems will be adequate and will not negatively impact the surrounding region before a certificate of occupancy is issued.
- Requires an environmental and community impact analysis evaluating the proposed development's impacts on water supply, sewage disposal, stormwater, wastewater, wetlands, floodplains, waters of the Commonwealth, and other environmental resources, including measures to mitigate adverse impacts.
- Recommends that municipalities require applicants to clearly describe water needs, water use, water availability, recycling and release procedures, and local and regional impacts on water resources.
- Encourages low-impact development practices, including minimizing impervious surfaces, utilizing reclaimed water for cooling when available, installing water-efficient landscaping, and incorporating systems that limit the use of finite natural resources.
- Requires projects near rivers, streams, lakes, wetlands, reservoirs, floodplains, or ponds to protect, establish, or enhance riparian forest buffers; establishes minimum buffer widths and management requirements; and prohibits earth disturbance, land development, and material storage within required riparian buffer areas.



7.6 Climate XChange

The Climate XChange State Policy Toolkits for Data Center Regulation provides model state policy recommendations addressing the water impacts of data centers and the disclosure of environmental, economic, and community information. The toolkits recommend using state permitting, licensing, and other regulatory processes to establish enforceable standards for water management, environmental review, and public disclosure. They also identify examples of proposed or enacted state legislation illustrating each policy approach.

- Recommends requiring data centers to meet water efficiency standards, use specified water-efficient technologies, and maximize the use of non-potable water, stormwater runoff, and water recycling.
- Recommends requiring wastewater quality standards that exceed federal baselines for pollutants such as PFAS, and requiring a full environmental review with a plan to mitigate adverse water impacts and engage affected communities before construction.
- Recommends requiring disclosure of water use, water sources, wastewater discharges, conservation efforts, and environmental and community impacts through permit, license, construction, grid connection, water permit, and other regulatory processes.
- Recommends issuing water permits only if a data center will not adversely impact watershed health or water supply, conducting state assessments of water impacts and water service costs, and using the resulting information to inform future water regulation and management planning.
- Recommends requiring notification of affected communities, disclosure of study results, opportunities for public participation before construction, statewide and facility-specific impact studies, and limiting or prohibiting non-disclosure agreements.
- Recommends using fees, tax revenue, and noncompliance fines from data centers to invest in water conservation and infrastructure.



7.7 The Seven Gateways Framework

The Stop Bad Data Centers' Seven Gateways Framework, developed by the Halt the Harm Network, provides a strategic roadmap for communities to challenge data center developments across seven distinct phases, from land acquisition to operational oversight. By breaking down the development lifecycle, this tool empowers local advocates to leverage specific regulatory, environmental, and financial intervention points to mitigate impacts, such as water usage and grid strain.

- Gateway 1 details the initial phase of data center development, focusing on identifying and securing land through monitoring zoning boards, public records, and utility plans. The stage emphasizes early community engagement to ensure public participation regarding land use and environmental impacts.
- Gateway 2 focuses on the critical phase where data center developers negotiate grid capacity and power infrastructure with utility providers and regional transmission organizations. This stage offers community oversight opportunities to challenge power-purchase arrangements and protect local ratepayers from infrastructure costs.
- Gateway 3 focuses on securing water rights and environmental permits for data centers, providing a critical, state-mandated window for the public to challenge project impacts. This phase is utilized to scrutinize cooling infrastructure, audit water usage, and leverage independent evidence to demand strict conservation conditions or permit denials.
- Gateway 4 focuses on the critical, vulnerable phase where data center developers negotiate for extensive, long-term public subsidies and tax exemptions, requiring public hearings. Advocates can challenge these demands by highlighting the disparity between developer claims and the reality of low job creation, shifting the debate toward fiscal responsibility and the misuse of public funds.



- Gateway 5 focuses on the capitalization phase, where developers seek large-scale financing while facing risks from documented community opposition, including regulatory friction and ESG criteria. Advocates can disrupt this phase by generating negative media and filing permit challenges to increase financial liabilities and impact credit approval.
- Gateway 6 focuses on securing construction and operational permits, including site grading, structural safety, and emergency infrastructure approvals, even after initial project approval.
- Gateway 7 focuses on the long-term enforcement phase, where communities monitor active data centers for ongoing pollution, local disruptions, and regulatory violations. Advocates can disrupt this phase by creating independent watch logs and using public records to expose discrepancies between operational impacts and developer promises.

7.8 Freshwater Society

The Freshwater Society's Data Center and Large Water Users framework offers science-based, regional planning tools designed to manage the high water demands of data centers while protecting groundwater in Minnesota. It advocates for early, structured developer engagement, promoting circular water use and reserving high-quality water for essential needs rather than cooling.

Data Centers and Water Use Considerations

The Freshwater Society's Data Centers and Water Use briefing highlights the risks rapid data center expansion poses to local aquifers, emphasizing the heavy water burden of conventional cooling systems. It advises local governments to implement strict, cumulative water impact evaluations and demand dry cooling or recycled water use to prevent long-term community depletion.

Best Practices for New Data Center Developments

The Freshwater Society's guidelines establish critical environmental and structural mandates for managing high-volume industrial water consumption in data centers, emphasizing closed-loop cooling systems and alternative, non-potable water sources to protect public utilities. The framework advises municipalities to implement transparent developer agreements and structured public review processes to ensure sustainable infrastructure expansion. This comprehensive approach aims to mitigate risks associated with rapid data center growth, prioritizing water recycling to safeguard groundwater and balance technological development with natural resource protection. You can read the full report at the Freshwater Society.



Cleanview U.S. Data Center Map & Tracker

The Cleanview U.S. Data Center Map & Tracker monitors active and proposed digital infrastructure sites across many U.S. counties to provide transparency in an opaque market. The platform tracks operating facilities alongside a massive pipeline of planned projects.

FracTracker Alliance Open U.S. Data Centers Tracker

The FracTracker Alliance Open U.S. Data Centers Tracker is an interactive, public-access tool that maps operational, permitted, and proposed data centers, highlighting their reliance on fossil fuels and geographic clustering. The platform serves as a tool for public accountability, linking infrastructure data with local advocacy efforts to address the environmental impacts of AI expansion. This resource will allow you to download an XLS version of the data with no sign-up, making it one of the most accessible platforms to date.

Data Center Map

Data Center Map is a global interactive portal and research index that maps over 5,000 co-location facilities across 130 countries, serving as a primary resource for analyzing digital infrastructure and internet exchange points. The platform facilitates detailed searches for data center providers, offering filtering options based on power, cooling, and sustainability certifications.

Data Center Proposal Tracker

The Data Center Proposal Tracker is a collaborative, citizen-run mapping platform that tracks and visualizes proposed data center developments and energy infrastructure across the United States. By aggregating local records to map planned facility boundaries, the tool aims to bridge transparency gaps for communities facing rapid, AI-driven infrastructure expansion.

In land-use planning, municipal boundaries frequently fail to contain the environmental, economic, and infrastructural consequences of large-scale development. Traditional zoning models vest primary police power within individual cities or towns, allowing local boards to exercise exclusive jurisdiction over projects proposed within their borders. However, large developments generate impacts that inevitably spill over into neighboring communities. This operational reality creates a profound structural mismatch: a host municipality may eagerly approve a project to capture localized tax revenues, while adjacent jurisdictions are left to absorb downstream burdens, such as depleted shared aquifers, congested regional roadways, and strained multi-county utility grids.

To bridge this governance gap and protect inter-jurisdictional resources, a select cohort of states enforces specialized land-use mechanisms known as Developments of Regional Impact (DRI) or state-enabled macro reviews. These statutory frameworks legally alter the traditional hierarchy of local control by introducing an upper-tier layer of regional or state review once a project crosses pre-determined geographic, environmental, or utility consumption thresholds. Rather than permitting a single town board to fast-track an approval in isolation, DRI laws mandate that qualified projects undergo a comprehensive evaluation by an independent regional planning commission, a quasi-judicial district panel, or a state environmental agency. By compelling a holistic examination of a project's cumulative regional footprint, these frameworks ensure that larger public interests and shared natural resources are safeguarded before local permits can be finalized.

By examining the specific triggers, legal provisions, and jurisdictional variations of these programs, this section highlights how regional review frameworks function as vital checkpoints for balancing localized growth with regional environmental and infrastructural sustainability.

9.1 Georgia

Georgia's Developments of Regional Impact (DRI) process is a state-coordinated review procedure for large developments that may affect more than one local government. Before a local government makes a final decision on a qualifying development, the project is reviewed by the applicable Regional Commission, which evaluates potential regional impacts and provides findings and recommendations. The DRI process is advisory and is intended to inform, rather than replace, local land use decisions.

- Requires proposed developments that meet established DRI thresholds to undergo regional review before a local government issues final development approval.
- Requires the Regional Commission to evaluate a project's impacts using state DRI review standards, including effects on water supply, wastewater infrastructure, stormwater management, groundwater resources, and water quality.
- Requires applicants to submit information describing the proposed development and its anticipated infrastructure and environmental impacts as part of the DRI review.
- Requires consultation with state agencies and other reviewing entities when a project may affect their areas of responsibility, including agencies with water resource and environmental oversight responsibilities.
- Requires the Regional Commission to prepare a Development of Regional Impact report containing findings and recommendations for the local government's consideration before it makes its final decision.
- Requires the local government to consider the DRI report during its decision-making process and to notify the Regional Commission of its final action on the development.



9.2 Massachusetts

Massachusetts' Developments of Regional Impact (DRI) process, administered by the Cape Cod Commission, provides regional review of development projects that may have significant impacts extending beyond municipal boundaries. Projects meeting DRI thresholds or referred by a municipality are reviewed by the Commission, which evaluates consistency with regional policies, conducts a public hearing, and issues a decision approving, approving with conditions, or denying the project. The process is intended to coordinate regional and local review while addressing impacts to Cape Cod's natural and built resources.

- Requires developments meeting DRI thresholds or referred by a municipality to undergo regional review before receiving final local approval.
- Requires the Commission to evaluate a project's consistency with regional policies and standards, including those addressing water resources, wastewater, stormwater, and natural resource protection.
- Requires applicants to submit information and technical analyses needed to evaluate potential regional impacts.
- Requires a public hearing as part of the DRI review process before the Commission issues a decision.
- Authorizes the Commission to approve a project, approve it with conditions, or deny it based on the DRI review.
- Authorizes approval conditions to address identified regional impacts and requires compliance with those conditions as part of project approval.



9.3 Vermont

Vermont's Act 250 program is the state's land use and development review process for projects that meet statutory jurisdictional thresholds. Qualifying developments must obtain an Act 250 land use permit before proceeding. District Environmental Commissions review applications using ten statutory criteria addressing environmental, natural resource, infrastructure, and community impacts and may issue permits, approve permits with conditions, or deny applications based on compliance with those criteria.

- Requires qualifying developments to obtain an Act 250 permit before development may proceed.
- Requires projects to demonstrate that they will not result in undue water pollution, including consideration of headwaters, wastewater disposal (including wastewater and stormwater), water conservation, floodways, streams, shorelines, and wetlands.
- Requires projects to demonstrate that sufficient water is available to meet the needs of the proposed development.
- Requires projects to demonstrate that they will not unreasonably burden an existing water supply.
- Requires projects to demonstrate that they will not cause unreasonable soil erosion or adversely affect the land's capacity to retain water.
- Requires projects to demonstrate consistency with Act 250 criteria addressing energy conservation, public and private utility services, and applicable local or regional plans.



9.4 New Hampshire

New Hampshire's Developments of Regional Impact (DRI) process provides a mechanism for municipalities to evaluate development proposals that are likely to affect more than one municipality. When a local land use board determines that a proposal has the potential for regional impacts, it must notify affected municipalities and regional planning commissions and consider comments received before making a final decision. The DRI process does not transfer permitting authority from the local board but incorporates regional review into local land use decisions.

- Requires local land use boards to determine whether a proposed development has the potential to affect more than one municipality before acting on the application.
- Requires local land use boards to notify affected municipalities and the regional planning commission when a proposal is determined to be a Development of Regional Impact.
- Requires notified municipalities and the regional planning commission to have an opportunity to review the proposal and submit comments before a final local decision is issued.
- Requires the local land use board to consider comments received during the regional review process before making its decision.
- Authorizes the regional planning commission to provide recommendations regarding potential regional impacts identified during its review.
- Provides that the DRI process supplements, rather than replaces, the local land use permitting process, with the local board retaining final decision-making authority.



9.5 Maine

Maine's Site Location of Development Act (38 M.R.S. § 484) establishes the permitting criteria for developments that require review by the Maine Department of Environmental Protection. Before issuing a permit, the Department must determine that a proposed development satisfies statutory review criteria addressing environmental resources, public infrastructure, natural resources, and community impacts. The Department may approve, approve with conditions, or deny a permit based on whether the application meets these criteria.

- Requires applicants to demonstrate that the development will have sufficient groundwater or surface water available for its reasonably foreseeable needs.
- Requires applicants to demonstrate that the development will not cause an unreasonable reduction in the quantity or quality of groundwater or surface waters available to existing users.
- Requires applicants to make adequate provision for stormwater management.
- Requires applicants to demonstrate that the development will not unreasonably harm significant natural resources, including freshwater wetlands and other protected natural resources identified in the statute.
- Requires applicants to make adequate provision for wastewater disposal and other public services needed to serve the development.
- Authorizes the Maine Department of Environmental Protection to impose permit conditions necessary to ensure compliance with the statutory approval criteria.



9.6 Colorado

Colorado's Areas and Activities of State Interest Act (House Bill 1041; C.R.S. § 24-65.1) authorizes local governments to identify, designate, and regulate matters of statewide concern, including developments of regional impact. Rather than establishing a single statewide permitting program, the Act authorizes local governments to adopt regulations governing designated matters and to review permit applications using locally adopted criteria consistent with the statute. The Act also establishes procedures for designation, permit review, public notice, hearings, and coordination with state agencies.

- Authorizes local governments to designate and regulate developments of regional impact through locally adopted regulations.
- Identifies major new domestic water systems, major sewage treatment systems, and major extensions of those systems as activities of state interest that may be designated and regulated.
- Requires a permit before a designated development of regional impact or activity of state interest may proceed.
- Requires public notice and an opportunity for a public hearing before a permit decision is made.
- Requires notice to affected state agencies, which may provide comments during permit review.
- Authorizes local governments to approve, approve with conditions, or deny permit applications consistent with the Act and locally adopted regulations.



While the intensive water consumption of large-scale infrastructure frequently dominates local headlines, the air quality impacts of these facilities present an equally complex regulatory issue. Managing hyperscale facilities requires operational resilience, a demand historically met by installing industrial diesel backup generators. When a localized grid failure or a weather anomaly threatens power continuity, these generators must instantly activate. However, the combustion of diesel fuel at this scale introduces a severe environmental trade-off: the immediate release of massive volumes of nitrogen oxides, which are primary air pollutants that serve as precursors to ground-level ozone and regional smog.

Because a single large industrial campus can house many individual generators, its collective potential to emit pollutants elevates the facility into a major stationary source of air pollution. This structural reality shifts project oversight from standard municipal zoning boards to state environmental agencies and regional air quality management districts. If a project crosses statutory major source thresholds, it requires complex operating permits, mandatory public comment periods, and thorough engineering reviews.

Adding to this challenge is an operational distinction that dictates the severity of regional enforcement: testing engines under baseline emergency definitions versus using them for active grid participation, such as peak-shaving or demand-response programs. Shifting a facility's operational role from emergency back-up to an active grid resource changes its regulatory classification, requiring much more stringent emissions-control standards. Meeting these higher standards generally requires operators to invest in chemical after-treatment technology, such as catalytic conversion systems. This section provides a sample of the evolving regulatory landscape governing industrial nitrogen oxide emissions.

10.1 The Clean Air Act (CAA)

The Clean Air Act (CAA) establishes the federal framework for regulating emissions from stationary sources, including nitrogen oxides (NO_x), through EPA regulations and federal and state permitting programs. Major new or modified stationary sources may be subject to Prevention of Significant Deterioration (PSD) or Nonattainment New Source Review (NNSR), depending on the area's attainment status and applicable statutory and regulatory thresholds.

Applicability Criteria

- PSD (Attainment Areas): Generally applies to major new stationary sources or major modifications meeting the applicable major-source threshold (typically 250 tpy for data centers unless another statutory threshold applies).
- NNSR (Nonattainment Areas): Applies to qualifying major new or modified sources in nonattainment areas. Major-source thresholds for ozone precursors (including NO_x) range from 100 tpy to 10 tpy, depending on the area's nonattainment classification.
- Title V: Applies to stationary sources meeting the applicable statutory and regulatory criteria.



10.1 The Clean Air Act (CAA)

Requirements

- Requires qualifying major new or modified stationary sources to undergo New Source Review (NSR).
- Requires qualifying projects in attainment areas to obtain a PSD permit and projects in nonattainment areas to obtain emissions offsets consistent with the Clean Air Act and the applicable State Implementation Plan.
- Requires applicable stationary sources to obtain Title V operating permits and comply with applicable permit conditions.
- Authorizes EPA to establish National Ambient Air Quality Standards (NAAQS) and New Source Performance Standards (NSPS) for regulated pollutants and stationary source categories.

10.2 Oregon

Oregon's Tier 4 Streamlined Air Contaminant Discharge Permit (ACDP) establishes standardized air permitting requirements for qualifying data centers with emergency engine generators. The permit regulates emissions from emergency power generation through emissions limits, operating restrictions, pollution control requirements, monitoring, testing, recordkeeping, and reporting. It also incorporates applicable federal standards for stationary compression ignition engines and establishes plant site emissions limits and source risk limits.

Applicability Criteria

- Applies to qualifying data centers with emergency engine generators permitted under Oregon's Tier 4 Streamlined ACDP.
- Covers diesel-fired emergency generators and associated pollution control equipment identified in the permit.
- Limits non-emergency NO_x emissions to 39 tons per year or the facility's approved Plant Site Emissions Limit (PSEL), whichever applies.
- Limits total annual NO_x emissions from all emergency engine operation to less than 99 tons on a rolling 12-month basis through restrictions on fuel use.



10.2 Oregon

Requirements

- Requires emergency engines to use ultra-low sulfur diesel (ULSD) containing no more than 15 ppm sulfur (0.0015% by weight) or qualifying renewable diesel meeting specified standards.
- Requires emergency engines to comply with 40 CFR Part 60, Subpart IIII emission standards and associated fuel, operation, maintenance, monitoring, and recordkeeping requirements.
- Requires installation and operation of emission controls, including Selective Catalytic Reduction (SCR) and diesel particulate filters, with continuous monitoring of key control device operating parameters.
- Establishes Plant Site Emission Limits (PSELs) for PM, PM₁₀, PM_{2.5}, NO_x, CO, VOCs, and greenhouse gases, evaluated over rolling 12-month periods.
- Establishes annual and daily source risk limits for ULSD used during non-emergency engine operation.
- Requires monthly emissions calculations, periodic source testing, and annual reporting demonstrating compliance with emissions limits and permit conditions.
- Limits NO_x emissions during regularly scheduled testing and maintenance to 50 pounds per hour and establishes operational restrictions for testing, maintenance, and dispatch operations.

10.3 Maryland

Maryland COMAR 26.11.09.08 – Control of NO_x Emissions for Major Stationary Sources establishes Maryland-specific emissions standards and operating requirements for major stationary sources of nitrogen oxides (NO_x). The regulation applies to qualifying installations based on their potential to emit and county location, establishes NO_x emission standards for fuel-burning equipment, specifies compliance demonstration methods, and requires monitoring, testing, operator training, and recordkeeping.

Applicability Criteria

- Applies to installations with a potential to emit ≥ 25 tons/year of NO_x located in Baltimore City or Anne Arundel, Baltimore, Calvert, Carroll, Cecil, Charles, Frederick, Harford, Howard, Montgomery, or Prince George's Counties.
- Applies to installations with a potential to emit ≥ 100 tons/year of NO_x located in Allegany, Caroline, Dorchester, Garrett, Kent, Queen Anne's, St. Mary's, Somerset, Talbot, Washington, Wicomico, or Worcester Counties.
- Establishes additional requirements based on fuel-burning equipment heat input capacity (≤ 100 MMBtu/hr, >100 – 250 MMBtu/hr, and ≥ 250 MMBtu/hr) and for combustion turbines with a capacity factor greater than 15%.

Requirements

- Establishes NO_x emission standards for major stationary sources and fuel-burning equipment, including emission limits expressed in pounds of NO_x per million Btu of heat input.



10.3 Maryland

- Requires compliance to be demonstrated using continuous emissions monitoring systems (CEMS) or EPA-approved stack testing, depending on the installation.
- Allows Department- and EPA-approved alternative emission standards and emissions averaging when specified conditions are met.
- Requires fuel-burning equipment with a rated heat input capacity of 250 MMBtu/hr or greater to install combustion controls or other technologies meeting specified NO_x emission rates and to operate certified NO_x CEMS or another approved monitoring method.
- Requires fuel-burning equipment with a rated heat input capacity of 100 MMBtu/hr or less to conduct annual combustion analyses, optimize combustion, maintain records for at least two years, and provide operator training every three years.
- Requires low-capacity-factor fuel-burning equipment operating more than 500 hours per year to perform annual combustion analyses and requires combustion turbines with a capacity factor greater than 15% to meet an hourly average NO_x emission rate of 42 ppm when firing gas or 65 ppm when firing fuel oil, or the applicable Prevention of Significant Deterioration (PSD) limit, whichever is more restrictive.

10.4 California

California does not regulate air permits at a centralized state level; instead, it delegates authority to Air Quality Management Districts (AQMD) like the Bay Area AQMD. BAAQMD General Requirements establishes the Bay Area Air District's general permit framework for new, modified, and existing stationary sources. It requires an Authority to Construct before installing or modifying equipment that may emit, reduce, or control air contaminants, and a Permit to Operate before operating that equipment.

Applicability Criteria

- Sources may be exempt from Authority to Construct and Permit to Operate requirements only if they meet listed exemption criteria; one general exemption requires actual emissions of each listed pollutant, including NO_x, to be either less than 10 pounds per highest day or, if above that level, less than 150 pounds per year per pollutant.
- Internal combustion engines and gas turbines are exempt only if their maximum output rating is 50 brake horsepower or less, or if another listed exemption applies.
- A source is expressly subject to permitting if emissions of any regulated air pollutant, excluding greenhouse gases, are greater than 5 tons per year after abatement.
- A modification includes certain increases in potential to emit; for toxic air contaminants and hazardous air pollutants, the rule uses risk thresholds of greater than 1.0 in one million cancer risk or greater than 0.20 chronic hazard index.
- An Authority to Construct expires after two years unless renewed; most renewals are limited to one additional two-year period and are contingent on current BACT and offset requirements.



10.4 California

Requirements

- Requires an Authority to Construct before installing or modifying equipment that may emit air contaminants.
- Requires a Permit to Operate before operating equipment that may emit, reduce, or control air contaminants.
- Requires permit applications to include enough information for the Air Pollution Control Officer to determine emissions and air quality impacts.
- Authorizes permit conditions needed to ensure compliance with federal law, California law, or District regulations, including devices for measuring or analyzing emissions or ground-level air contaminant concentrations.
- Requires permit holders to notify the APCO within 30 days after changes in hours of operation, fuels, process materials, or throughput that might increase emissions.
- Requires the permit to operate and permit conditions to be accessible to equipment operators on site or electronically.

10.5 Ohio

Ohio Administrative Code Chapter 3745-110 establishes Ohio's Reasonably Available Control Technology (RACT) requirements for nitrogen oxides (NO_x) emissions from qualifying stationary sources. The rule applies to specified combustion equipment, including stationary internal combustion engines and combustion turbines, based on facility emissions, source type, and location. It establishes source-specific NO_x emission limits, compliance methods, exemptions, monitoring, recordkeeping, and provisions for alternative RACT determinations and emissions averaging.

Applicability Criteria

- Applies to stationary internal combustion engines, stationary combustion turbines, boilers, and reheat furnaces located at qualifying facilities.
- In the Cleveland and Cincinnati areas, applies to listed source types at facilities with a potential to emit ≥ 100 tons/year of NO_x, and to facilities in specified Cleveland-area counties with a potential to emit 50–100 tons/year of NO_x.
- Outside the Cleveland and Cincinnati areas, applies to the listed source categories and to new or modified sources issued permits after January 1, 2008, unless a more stringent federal New Source Performance Standard applies.
- Exempts, among others, standby engines and turbines operating less than 500 hours in any consecutive 12-month period, stationary internal combustion engines smaller than 500 horsepower, and stationary combustion turbines with an energy input capacity less than 20 MMBtu/hr.



10.5 Ohio

Requirements

- Limits NO_x emissions from stationary internal combustion engines greater than 500 horsepower to 3.0 grams per horsepower-hour, regardless of whether they burn gaseous fuels, diesel, distillate oil, or dual fuels.
- Establishes NO_x emission limits for stationary combustion turbines based on turbine size and fuel type, including limits as low as 25 ppmvd for natural gas-fired turbines and 65 ppmvd for diesel- or distillate-fired turbines rated 3.5 MW or greater.
- Allows compliance to be demonstrated using stack testing or continuous emissions monitoring systems (CEMS) with specified averaging periods.
- Allows approved emissions averaging programs if they achieve NO_x reductions at least equivalent to the otherwise applicable RACT requirements and requires annual demonstration reports.
- Allows owners or operators to submit a source-specific RACT engineering study when prescribed emission limits are technically infeasible or economically unreasonable, subject to Ohio EPA approval.



10.6 Illinois

35 Ill. Adm. Code Part 217 – Nitrogen Oxides Emissions establishes Illinois-specific NO_x emission standards and compliance requirements for stationary sources. The rule applies to specified combustion sources based on source type, location, and potential NO_x emissions, and establishes emission limitations, testing, monitoring, recordkeeping, reporting, and emissions averaging provisions. Permits for affected sources may also be required under Illinois air permitting regulations.

Applicability Criteria

- Applies to stationary sources emitting or having the potential to emit ≥ 100 tons/year of NO_x in the Chicago or Metro East ozone areas before July 1, 2025.
- Beginning July 1, 2025, generally applies to listed industrial combustion units located in the Chicago or Metro East ozone areas at sources with a potential to emit ≥ 50 tons/year of NO_x, where the individual emission unit emits ≥ 15 tons/year of NO_x.
- Defines potential to emit as emissions based on design or maximum production capacity and 8,760 operating hours per year, or as established in a federally enforceable permit.

Requirements

- Requires affected emission units to operate using good air pollution control practices to minimize NO_x emissions.
- Requires compliance with applicable emission limits using a 30-day rolling average beginning July 1, 2025, with new or modified units required to comply within 180 days after initial startup.



10.6 Chicago, Illinois

- Requires initial performance testing, compliance certification, or continuous emissions monitoring (CEMS) or predictive emissions monitoring (PEMS), depending on the source and compliance method.
- Requires records to be maintained for at least five years, including operating hours, fuel use, emissions data, startup, shutdown and malfunction events, maintenance activities, and monitoring data.
- Allows sources to demonstrate compliance through an approved emissions averaging plan if specified eligibility and reporting requirements are met.

A Systemic Issue

The geographic variety, regulatory hurdles, and legal outcomes detailed across the preceding case studies are not isolated local anomalies; rather, they are indicative of a systemic breakdown in infrastructure oversight occurring across the United States. As the artificial intelligence (AI) boom and hyperscale computing demand increases, the nation faces an unprecedented resource crisis that goes beyond state lines and regional watersheds. By examining the common mechanisms through which policies are routinely circumvented, ranging from corporate non-disclosure agreements (NDAs) to legal maneuvers like "exclusionary zoning" lawsuits, this analysis shows how a fragmented regulatory landscape leaves the nation's public utilities, electrical grids, and aquifers vulnerable to corporate exploitation.⁹³

This governance issue is rooted in an outdated regulatory structure. The majority of the nation's environmental protection laws, local zoning frameworks, and municipal utility guidelines were drafted decades before the concept of cloud computing existed, let alone the resource-intensive reality of modern AI clusters.⁹⁴ Consequently, the legal definitions governing "commercial office use" or "light industrial development" are exploited by tech developers to build massive, utility-scale infrastructure directly into residential and agricultural communities.⁹⁵

This report highlights the profound imbalance of power within modern utility negotiations. When multi-billion-dollar technology corporations enter rural or suburban jurisdictions, they do not merely buy land; they engage with local governments that lack the specialized hydrogeological staff, technical advisory bodies, and financial resources needed to properly verify massive industrial claims.⁹⁶ By using their economic influence and threatening costly litigation, developers effectively create a race to the bottom among competing municipalities.⁹⁷

Patchwork Oversight

The rapid expansion of hyperscale data centers and artificial intelligence (AI) clusters has exposed a fragmented regulatory landscape across the United States. No single federal agency oversees the site-specific resource extraction of the data center industry. Instead, oversight falls to a disconnected patchwork of state environmental agencies, public utility commissions, municipal planning boards, and outdated regional water management codes. An analysis of infrastructure deployment across multiple states reveals a systemic legal and operational vulnerability: local communities are ill-equipped to negotiate with giant tech firms.⁹⁸ When data center developers use non-disclosure agreements (NDAs), state tax incentive overrides, and corporate legal maneuvers like "exclusionary zoning," local municipal planning departments are frequently bypassed, leaving regional water security vulnerable.⁹⁹

A primary policy limitation nationwide is the legal ease with which state-level economic development frameworks can override local municipal autonomy. Across the industrial Midwest and the South, states historically passed statutory tax incentives to court technology investments, offering sweeping exemptions on sales, property, and software taxes for facilities meeting minimum square-footage thresholds.¹⁰⁰ However, these economic promotion laws were written without matching environmental guardrails.

As a result, when a rural town council or municipal planning commission votes to deny a hyperscale rezone to protect its local water table, corporate developers have a valid legal argument. Because small, cash-strapped municipalities cannot afford prolonged court battles against private equity giants, they are frequently subject to court-approved consent judgments that override their own democratic planning votes.¹⁰¹

Regulatory Loopholes

A disconnect exists between the agencies that control land use and the agencies that regulate the water table. This creates a major regulatory blind spot that developers can exploit. If a data center developer cannot secure a direct state groundwater pumping permit due to regional aquifer stress, they can shift strategies by requesting a municipal annexation. By hooking directly into a local city's pre-existing water grid, the developer effectively hides its potentially massive volumetric footprint behind the city's mass utility allowance, bypassing state-level environmental impact reviews entirely.¹⁰²

Additionally, national policy fails to address the direct trade-off between energy consumption and water consumption. In the American Southwest and the Colorado River Basin, acute desert water scarcity has prompted local governments to pass strict ordinances prohibiting the use of potable municipal water for evaporative server cooling.¹⁰³ While this successfully transitions facilities into "closed-loop air-cooled" configurations, air cooling demands vastly more electricity to operate.

This shift creates a secondary, off-site environmental strain. To meet the massive electrical demand of an air-cooled hyperscale campus, regional utilities must heavily tax the electrical grid. In states like Texas and Virginia, this surge in demand requires fossil-fuel-burning power plants to run at maximum capacity.¹⁰⁴ Because these power plants rely on water-intensive steam turbines and evaporative cooling towers, the water consumption is not eliminated, it is simply transferred from the data center site to an out-of-state power generation station, drawing from shared regional watersheds without any coordinated regulatory oversight.¹⁰⁵

The widespread use of government Non-Disclosure Agreements (NDAs) has severely eroded public transparency across all 50 states. Regional economic development corporations and municipal utility directors routinely sign strict corporate non-disclosure terms during early-

stage negotiations.¹⁰⁶ These agreements legally block public servants from disclosing projected electrical loads, wastewater discharge chemical profiles, and water extraction estimates to their own constituents or neighboring jurisdictions.

By the time an infrastructure project goes public for a mandatory zoning or annexation vote, the utility agreements are virtually finalized. This secrecy prevents neighboring towns from assessing the cumulative impact on shared aquifers. One municipality may welcome a data center for its immediate tax revenue, completely unaware that the facility's long-term groundwater drawdown will compromise the municipal wells and driving up utility costs for the entire region.¹⁰⁷

Water resource managers cannot effectively plan for future demand if they do not know how much water large facilities will use. State legislatures should require greater transparency from corporations and eliminate the policies that allow major water withdrawals to remain hidden from public oversight.

- **Statutory Prohibition of Government-Industry NDAs:** States must pass legislation explicitly prohibiting municipal utility boards, county commissioners, and local economic development departments from signing non-disclosure terms regarding public resource capacities. All inquiries concerning utility load demands must be part of the public record from day one.
- **Mandated Pre-Negotiation Infrastructure Disclosures:** Before any local jurisdiction can schedule a formal land-use, zoning, or annexation hearing, developers must file standardized infrastructure impact statements. These statements must detail peak daily water intake, chemical and thermal wastewater discharge profiles, and steady-state electrical grid demands in public records.
- **Real-Time Automated Consumption Reporting:** Federal legislation should mandate that all data centers exceeding 10,000 square feet install automated meters.¹⁰⁸ These meters must stream real-time water and energy consumption data directly to state environmental agencies and a publicly accessible national database managed by the EPA.

To protect small municipal planning boards from corporate litigation and protect vulnerable regional watersheds, state zoning and environmental codes require immediate restructuring.

- **Remove Loopholes Using Mandatory State Audits:** States must pass statutes that separate data center utility permissions from general municipal zoning rights.¹⁰⁹ Any data center projected to consume over 100 million gallons of water annually must pass a standalone state environmental review and receive a direct state water appropriation

permit, regardless of whether they drill private wells or hook directly into a city water grid.

- **Protect Municipalities from Exclusionary Zoning Lawsuits:** State legislatures should clarify in municipal codes that denying an intensive, utility-scale infrastructure project because of environmental concerns or limited local resource capacity does not constitute "exclusionary zoning." This protection would allow municipalities to make land-use decisions based on legitimate environmental and infrastructure constraints without facing costly lawsuits intended to force rezoning.
- **Require Independent Aquifer Stress Testing:** Before any regulatory body can approve a high-volume water permit for a data center, developers must fund independent, multi-year hydrogeological modeling and aquifer stress testing. Permits must be legally denied if the modeling indicates that localized drawdown cycles will compromise agricultural wells, municipal drinking supplies, or slow-recharging aquifers.

To ensure that local taxpayers do not subsidize corporate server cooling, policies must shift the entire financial burden of infrastructure expansion directly onto developers.

- **100% Capital Expense Shift for Utility Expansions:** Local ordinances must mandate a total financial shift, requiring data center developers to pay all upfront and long-term maintenance costs for extending trunk lines, expanding municipal wastewater treatment facilities, or constructing high-capacity booster stations.
- **Condition State Tax Exemptions on Closed-Loop and Non-Potable Requirements:** States must reform their economic development incentive programs. Sales and property tax exemptions must be legally removed from any facility that utilizes aquifers for evaporative server cooling. State financial incentives should be reserved strictly for facilities that deploy closed-loop dry-cooling technology, use recycled graywater, or operate outside of water-stressed basins.

- **Apply "Blowdown" Wastewater Surcharges:** Municipalities should implement utility surcharges on the highly concentrated, mineral-rich "blowdown water" returned to municipal sewers from data center cooling loops. These surcharges will offset the heavy chemical and thermal treatment burdens placed on public wastewater treatment plants.
- **Require Grid-Balancing Battery Integration:** To mitigate the extreme off-site energy-water trade-off, data center operators should be legally required to integrate their massive on-site battery backup systems into the local public utility framework. During peak summer grid strain, these battery footprints must be capable of feeding power back into the public grid, lowering the operating burden on water-intensive fossil-fuel power plants.

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Planning / Permitting Survey

Timestamp	Name	Title/Role	City	County	State	What is/are the water source(s) for your jurisdiction?	How many million gallons per day (MGD) would you consider being large water user?	Do large water users provide a consumption estimate when applying for a permit/rezoning?
4/21/2026 6:43:35		Deputy Director, Building and Zoning Services Department	Columbus	Franklin	Ohio			No
4/27/2026 11:25:29		Planning Deputy Director		Pima	Arizona	Groundwater, Water Reuse/Recycled Water	Not sure	No
4/28/2026 16:43:33		Lead Planner	Tucson	Pima	Arizona	Groundwater, Water Reuse/Recycled Water, Central Arizona Project (CAP)	None for this department	Yes
5/1/2026 9:14:57		Director of Development Services	Aurora	Kane / Will / DuPage / Kendall	Illinois	Surface Water, Groundwater	Not something I have access to data wise	No
5/4/2026 11:43:18		Large-Load Energy Customer Development Lead	San Jose	Santa Clara	California	Surface Water, Groundwater, Water Reuse/Recycled Water	Not Sure	Yes
5/20/2026 9:49:32		Public Works Director	Rosemount	Dakota	Minnesota	Groundwater	No defined threshold	Yes
5/20/2026 11:51:37		Community Development Director	Rosemount	Dakota	Minnesota	Groundwater	None for this department	Yes
5/27/2026 8:18:33		Manager of Strategic Communications	Nashville - Metro Water Services	Davidson	Tennessee	Surface Water	Every development proposing greater than 3500 GPD in water use is required to undergo a capacity analysis.	Yes

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Planning / Permitting Survey

If yes, is that estimate required or voluntary?	Are you updated by the user if the consumption is projected to change?	When receiving data center proposals, are you having to undergo zoning amendments?	Do data centers provide cooling technology details to you?	If yes, which types have you encountered?	Is the water usage from data centers publicly available?	Where can the water usage data be found?	How often is the water usage data reported?
		All building projects, new or renovated in the city must undergo zoning review before proceeding					
	No	Yes	Not Sure		No		
Required	Yes	Yes	Yes	Evaporative Cooling Towers, Closed-Loop Cooling	No		
	No	Yes	Yes	Evaporative Cooling Towers, Closed-Loop Cooling, Water Reuse/Recirculation	Yes	Record Request	Monthly
Required	No	No	Yes	Evaporative Cooling Towers, Closed-Loop Cooling	Yes	Department Website	Upon permitting and review follow-up
Informally required; no application questions, no plans to add it	Yes	Yes	No	Closed-Loop Cooling	No		
Developers inquire if the system has capacity	Yes	Yes	Yes	Evaporative Cooling Towers, Closed-Loop Cooling, Water Reuse/Recirculation	No		
They must obtain a capacity letter	They are only allowed to use what they have paid for in capacity fees according to their capacity letter. If they need additional capacity they must resubmit	This would be Metro Codes, not Metro Water Services (MWS)	At this time, MWS has not received any plans or formal requests for data centers		No		

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Planning / Permitting Survey

Has data center water demand raised concerns about impacts to:	In states with water rights systems, has data center development intersected with existing water rights or allocation constraints?	How does your department/agency perceive the water use of data centers relative to other large water-demand uses (e.g., irrigated agriculture, industrial operations, golf courses, cooling ponds)?	Does your department/agency have an agreement or approach to working with data centers that could serve as a model?	Has your community considered or enacted a Community Benefits Agreement (CBA) with data centers?	If yes, what were the main provisions of the agreement?	What information was most difficult to obtain during discussions with a data center developer or operator?
Overall water supply reliability (municipal, agricultural, industrial, environmental), Water rights allocations, Infrastructure capacity constraints, Stormwater	Unsure	Roughly the same	Currently working on a framework	No		NDA used, Project Blue hired a professional to represent them
Overall water supply reliability (municipal, agricultural, industrial, environmental), Water rights allocations, Infrastructure capacity constraints	Yes	Roughly the same	Yes - willing to share	Yes		The legal team made "Community Benefits Agreements" sticky. There are currently "Development Agreements" but CBAs and DAs should go hand in hand. Never talked to Bealle or anyone directly, Silven and Bangs was used as consultant mediaries.
Overall water supply reliability (municipal, agricultural, industrial, environmental)	Unsure	Slightly higher	We have an adopted ordinance that can be seen online. Then each individual development has to undergo its own agreement, so tailored to each setup.	Yes	Using additional green energy sources, paying into a sustainability bank, agreeing to regular sound testing along with some other smaller items.	Sound data was the most difficult. As part of our permit process most of the systems and setups were easy to get information on prior to construction. Water data is easy for us to track as we run our own water department. Easy and regular access to data on consumption making it easy to track.
None	Unsure	Roughly the same	No	No		Energy usage is harder because data centers work with PG&E during initial build out. The City and PG&E share data under a utility agreement with permission from the data center.
Overall water supply reliability (municipal, agricultural, industrial, environmental), Environmental flows, Infrastructure capacity constraints, Misconceptions about groundwater pollution	Not Applicable	Roughly the same	No	No		There was a strong desire to keep moving forward with proposals that weren't fully developed from the developers. The city needed more information, developers were still refining details actively as discussions were ongoing, but still talking about timelines and schedules. Million-dollar decisions can't be approved with so much uncertainty.
Overall water supply reliability (municipal, agricultural, industrial, environmental), Infrastructure capacity constraints	Not Applicable	Significantly lower	No	No		Not specifically; any interactions/disclosures are to their benefit. Seeing that evolve from the industry. Years ago, they would have not disclosed anything, but because there are so much current concerns.
		We have not evaluated this comparison				

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Water Utility Survey

Timestamp	Name	Title/Role	Company Name	City	County	State	What is/are the water source(s) for your company?	How many million gallons per day (MGD) is considered a large water user?
4/21/2026 8:18:20		Development Manager	Prince William Water	Woodbridge	Prince William	Virginia	Surface Water	0.02
4/22/2026 11:12:39		Utilities Analyst	Town of Leesburg	Leesburg	Loudoun	Virginia	Surface Water	We haven't defined- we look at each application individually.
4/30/2026 13:43:27		Assistant Administrator	City of Columbus - Division of Water	Columbus	Franklin	Ohio	Surface Water, Groundwater	2" and larger meter = >100,000 gallons per day

Do large water users have a separate rate structure?	If yes, is it an increasing, decreasing, or flat rate structure?	Do large water users provide a consumption estimate when establishing service?	If yes, is that estimated required or voluntary?	After the initial water demand proposal, were follow-up discussions had with developers to reevaluate/negotiate proposed water demands?	Do data centers provide cooling technology details to you?
Yes	Capacity fees for industrial users based on max day	Yes	Required	Yes	Yes
Yes	We have different classes and rate structure and the water user is placed in appropriate category.	Yes	We have established projected gallons per day estimates for different uses, or we can use their established water/sewer bills.	Yes	Water cooled or closed loop are the categories communicated. Specific technology within these categories are not detailed.
No	We don't have a large user rate, we have a commercial/industrial rate that is flat.	Yes	Voluntary	No	No

Is the water usage from data centers publicly available?	For the purposes of this research, would you share the water use for data center clients?	Are you required to report water usage by data centers to regional or state authorities?	Who are you required to report data center water usage to?	How often are you required to report?	Describe any interactions you've had with data centers in the past.
Yes	Yes	No			Our water and sewer system has a large number of data center customers, data centers under construction and data centers in the planning phase.
No	A formal FOIA request could be submitted and reviewed.	No			Planning, design and construction interactions for their projects.
No	No	No			Some large users have provided estimated average day demand, max day demand, and diurnal patterns for evaluation on impacts to the distribution system.

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Local Contact Log

Date Contacted	Contact Name (if applicable)	Department/Company	County/Municipality	State	Type	Contact Method	Response	Responder	Response Date
4/13/2026		Utilities	Manassas	Virginia	City Department	Email	None		
4/13/2026		Planning	Manassas	Virginia	City Department	Email	None		
4/13/2026		Prince William Water	Prince William	Virginia	County Department	Email	Survey Completed		4/17/2026
4/13/2026		Planning	Prince William	Virginia	County Department	Email	None		
4/13/2026		Planning/Zoning	Loudoun	Virginia	County Department	Email	Forwarded		4/14/2026
4/13/2026		Loudoun Water	Loudoun	Virginia	Water Utility	Web Form	Survey Sent		4/16/2026
4/13/2026		Zoning	Fairfax	Virginia	County Department	Web Form	Emailed Info		4/21/2026
4/13/2026		Fairfax Water	Fairfax	Virginia	Water Utility	Web Form	Emailed Info		4/15/2026
4/14/2026		Planning	Carrollton	Texas	City Department	Web Form	Emailed Info		4/15/2026
4/14/2026		Planning	Lewisville	Texas	City Department	Email	None		
4/14/2026		Utilities	Lewisville	Texas	City Department	Email	None		
4/14/2026		Development	Denton	Texas	City Department	Email	None		
4/14/2026		Water and Wastewater	Denton	Texas	City Department	Email	None		
4/14/2026		Development	Denton	Texas	County Department	Email	None		
4/14/2026		Ribbonwood MUD No. 1	Denton	Texas	Municipal Utility District	Email	None		

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Local Contact Log

Date Contacted	Contact Name (if applicable)	Department/Company	County/Municipality	State	Type	Contact Method	Response	Responder	Response Date
4/14/2026		Ponder Farms MUD	Denton	Texas	Municipal Utility District	Email	Not Applicable		4/15/2026
4/14/2026		Rocky Top Ranch MUD	Denton	Texas	Municipal Utility District	Email	None		
4/14/2026		Tradition MUD No. 2C	Denton	Texas	Municipal Utility District	Email	None		
4/14/2026		The Lakes Fresh Water Supply District of Denton County	Denton	Texas	Fresh Water Supply District	Email	Not Applicable		4/15/2026
4/14/2026		San Antonio Water System	San Antonio	Texas	Water Utility	Web Form	Forwarded		4/22/2026
4/14/2026		Planning	San Antonio	Texas	City Department	Web Form	None		
4/14/2026		Development	San Antonio	Texas	City Department	Web Form	None		
4/14/2026		Water Utilities	Dallas	Texas	City Department	Email	Forwarded		4/16/2026
4/14/2026		Planning	Dallas	Texas	City Department	Email	Forwarded		4/15/2026
4/14/2026		San Jose Water	San Jose	California	Water Utility	Email	Not Applicable		4/15/2026
4/14/2026		Planning	San Jose	California	City Department	Email	Meeting Set		4/21/2026
4/14/2026		Planning	Santa Clara	California	City Department	Email	None		
4/14/2026		Water and Sewer Utilitites	Santa Clara	California	City Department	Email	None		
4/14/2026		Three Community Water Supply Corporation	Bexar	Texas	Water Utility	Phone Call	None		
4/16/2026		Planning and Development	Santa Clara	California	County Department	Email	None		

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Local Contact Log

Date Contacted	Contact Name (if applicable)	Department/Company	County/Municipality	State	Type	Contact Method	Response	Responder	Response Date
4/16/2026		Santa Clara Valley Water	Santa Clara	California	Water Utility	Phone Call	Emailed Info		4/17/2026
4/16/2026		San Francisco Water Power Sewer	Santa Clara	California	Water Utility	Email	Forwarded		4/16/2026
4/17/2026		Building and Zoning	Cook	Illinois	County Department	Email	None		
4/17/2026		Planning and Development	Chicago	Illinois	City Department	Web Form	None		
4/17/2026		General	Chicago	Illinois	City Department	Web Form	None		
4/17/2026		Public Works	DuPage	Illinois	County Department	Email	None		
4/17/2026		Building and Zoning	DuPage	Illinois	County Department	Email	Not Applicable		4/17/2026
4/17/2026		Water and Sewer	Aurora	Illinois	City Department	Email	None		
4/17/2026		Development Services	Aurora	Illinois	City Department	Email	Survey Completed		4/30/2026
4/17/2026		Waterworks	Los Angeles	California	County Department	Web Form	Not Applicable		4/23/2026
4/17/2026		Planning	Los Angeles	California	County Department	Email	Meeting Set		4/22/2026
4/17/2026		Planning	Los Angeles	California	City Department	Email	Emailed Info		4/17/2026
4/17/2026		Water and Power	Los Angeles	California	City Department	Web Form	Referred to Resource		4/30/2026
4/17/2026		Utilities	Sacramento	California	City Department	Email	None		
4/17/2026		Planning	Sacramento	California	City Department	Email	None		

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Local Contact Log

Date Contacted	Contact Name (if applicable)	Department/Company	County/Municipality	State	Type	Contact Method	Response	Responder	Response Date
4/17/2026		Water Resources	Sacramento	California	County Department	Email	Not Applicable		4/20/2026
4/17/2026		Environmental Management	Sacramento	California	County Department	Email	None		
4/17/2026		Public Works	Westmont	Illinois	City Department	Email	None		
4/17/2026		Community Development	Westmont	Illinois	City Department	Email	Survey Sent		4/20/2026
4/18/2026		City Water, Light, and Power	Springfield	Illinois	City Department	Email	None		
4/18/2026		Planning and Economic Development	Springfield	Illinois	City Department	Email	None		
4/18/2026		Building and Zoning	Sangamon	Illinois	County Department	Email	None		
4/20/2026		Utilities	Mesa	Arizona	City Department	Email	None		
4/20/2026		Planning	Mesa	Arizona	City Department	Email	Forwarded		4/20/2026
4/20/2026		Planning and Development	Phoenix	Arizona	City Department	Email	None		
4/20/2026		Water Services	Phoenix	Arizona	City Department	Email	None		
4/20/2026		Development Services	Pima	Arizona	County Department	Web Form	Meeting Set		4/21/2026
4/20/2026		Metro Water	Pima	Arizona	Water Utility	Email	None		
4/20/2026		Southwestern Utility Management	Pima	Arizona	Water Utility	Email	None		
4/20/2026		EPCOR	Pima	Arizona	Water Utility	Email	None		

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Local Contact Log

Date Contacted	Contact Name (if applicable)	Department/Company	County/Municipality	State	Type	Contact Method	Response	Responder	Response Date
4/20/2026		Tucson Water	Tucson	Arizona	City Department	Email	None		
4/20/2026		Planning and Development	Tucson	Arizona	City Department	Email	Meeting Set		4/23/2026
4/20/2026		Building & Zoning Services	Colombus	Ohio	City Department	Email	Survey Completed		4/21/2026
4/20/2026		Columbus Water & Power	Colombus	Ohio	City Department	Email	Forwarded		4/21/2026
5/14/2026		Planning	Nashville	Tennessee	City Department	Email	Not Applicable		5/15/2026
5/14/2026		Metro Water Services	Nashville	Tennessee	City Department	Phone Call	None		
5/14/2026		Memphis Light, Gas, Water	Memphis	Tennessee	Water Utility	Email	Forwarded		5/14/2026
5/14/2026		Planning and Development	Memphis	Tennessee	City & County Department	Web Form	None		
5/14/2026		Building and Codes	Clarksville	Tennessee	City Department	Email	Not Applicable		5/14/2026
5/14/2026		Clarksville Gas & Water	Clarksville	Tennessee	City Department	Email	None		
5/14/2026		East Montgomery Utility District	Montgomery	Tennessee	Water Utility	Email	None		
5/14/2026		Building and Codes	Montgomery	Tennessee	County Department	Email	None		
5/14/2026		Public Works/Engineering	Rosemount	Minnesota	City Department	Email	Meeting Set		5/18/2026
5/14/2026		Community Development/Building	Rosemount	Minnesota	City Department	Email	Meeting Set		5/18/2026
5/14/2026		Public Works	Becker	Minnesota	City Department		None		

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Local Contact Log

Date Contacted	Contact Name (if applicable)	Department/Company	County/Municipality	State	Type	Contact Method	Response	Responder	Response Date
5/14/2026		Planning & Zoning	Becker	Minnesota	City Department	Email	None		
5/14/2026		General	Hennepin	Minnesota	County Department	Web Form	Not Applicable		5/18/2026
5/14/2026		General	Dakota	Minnesota	County Department	Web Form	None		
5/14/2026		Land Use Planning	Dakota	Minnesota	County Department	Email	None		
5/14/2026		Planning & Zoning	Sherburne	Minnesota	County Department	Email	Not Applicable		5/18/2026
5/14/2026		Department of Environmental Protection	Manhattan	New York	City Department	Email	None		
5/14/2026		Department of Public Service	Manhattan	New York	State Department	Email	None		
5/14/2026		Planning & Zoning	Buffalo	New York	City Department	Email	None		
5/14/2026		Buffalo Water	Buffalo	New York	City Department	Web Form	None		
5/14/2026		Office of Building, Zoning, Planning, Administration & Enforcement	Orangetown	New York	City Department	Email	None		
5/14/2026		Environment & Planning	Erie	New York	County Department	Web Form	None		
5/14/2026		Erie County Water Authority	Erie	New York	Water Utility	Email	None		
5/14/2026		Environmental Resources	Rockland	New York	County Department	Email	Not Applicable		5/15/2026

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Data Center Contact Log

Initial Contact Date	Owner / Operator	Site Name	Address	Contact Method	Response	Response Date	Cooling Details
3/19/2026	STACK Infrastructure	NVA02	9590 Hornbaker Rd, Manassas, VA 20109	Email	None		No
4/13/2026	Iron Mountain	VA-1	11680 Hayden Rd, Manassas, VA 20109	Email	None		No
4/13/2026	QTS	Manassas 1	9400 Godwin Dr, Manassas, VA 20110	Email	None		No
4/13/2026	DataBank	IAD2	1764A Old Meadow Ln, McLean, VA 22102	Web Form	None		No
4/13/2026	H5	H5 Data Centers' Virginia	4050 Lafayette Center Dr, Chantilly, VA 20151	Email	None		No
4/13/2026	CoreSite	VA1	12100 Sunrise Valley Dr, Reston, VA 20191	Email	None		No
4/13/2026	CyrusOne	NVA5-NVA7	21350 Pacific Blvd, Sterling, VA 20166	Web Form	Survey Sent	4/28/2026	Yes
3/19/2026	STACK Infrastructure	NVA01	22080 Pacific Blvd, Sterling, VA 20166	Email	None		No
4/13/2026	Equinix	DC2	21715 Filigree Ct, Ashburn, VA 20147	Email	Survey Sent	4/13/2026	Yes
3/19/2026	Hayden Technologies, LLC	Google Loudoun County Data Center	20491 Goose Landing Ln, Leesburg, VA 20175	Email	None		No
3/19/2026	Digital Realty	DFW26	2501 State Highway 121, Lewisville, TX 75056	Email	None		No
4/13/2026	Core Scientific	Denton 1	8171 Jim Christal Rd, Denton, TX 76207	Email	None		No
4/13/2026	CyrusOne	DFW1	1649 W Frankford Rd, Carrollton, TX 75007	Web Form	Survey Sent	4/28/2026	Yes
4/13/2026	Stream Data Centers	SATA1	9550 Westover Hills Blvd, San Antonio, TX 78251	Web Form	Too busy	4/21/2026	Yes
4/13/2026	QTS	San Antonio 2	8535 Potranco Rd, San Antonio, TX 78251	Email	None		No

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Data Center Contact Log

Initial Contact Date	Owner / Operator	Site Name	Address	Contact Method	Response	Response Date	Cooling Details
3/19/2026	Digital Realty	SAT1	9999 Westover Hills Blvd, San Antonio, TX 78251	Email	None		No
4/13/2026	Equinix	DA1	1950 N Stemmons Fwy, Dallas, TX 75207	Email	Survey Sent	4/13/2026	Yes
4/13/2026	DataBank	DFW1	400 S Akard St, Dallas, TX 75202	Web Form	None		No
3/19/2026	Digital Realty	DFW12	2440 Marsh Ln, Carrollton, TX 75006	Email	None		No
4/13/2026	Equinix	SV1	11 Great Oaks Blvd, San Jose, CA 95119	Email	Survey Sent	4/13/2026	Yes
3/19/2026	Digital Realty	SJC10	641 Walsh Ave, Santa Clara, CA 95050	Email	None		No
4/13/2026	HostDime	HostDime Los Angeles	600 W 7th St, Los Angeles, CA 90017	Live Chat	Declined	4/13/2026	No
4/13/2026	Equinix	LA1	600 W 7th St, Los Angeles, CA 90017	Email	Survey Sent	4/13/2026	No
4/13/2026	CoreSite	LA1	624 S Grand Ave, Los Angeles, CA 90017	Email	None		No
4/13/2026	Vantage Data Centers	CA1	2820 Northwestern Pkwy, Santa Clara, CA 95091	Phone Call	None		Yes
4/13/2026	Prime	SMF01-01	2407 Ak St, McClellan Park, CA 95652	Email	None		Yes
4/13/2026	NTT Data	CA1	1200 Striker Ave, Sacramento, CA 95834	Web Form	None		Yes
4/13/2026	QTS	Sacramento 1	1100 N Market Blvd, Sacramento, CA 95834	Email	None		Yes
4/13/2026	Equinix	CH1	350 E Cermak Rd, Chicago, IL 60616	Email	Survey Sent	4/13/2026	No
4/13/2026	Equinix	CH4	350 E Cermak Rd, Chicago, IL 60616	Email	Survey Sent	4/13/2026	No

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Data Center Contact Log

Initial Contact Date	Owner / Operator	Site Name	Address	Contact Method	Response	Response Date	Cooling Details
3/19/2026	Digital Realty	ORD10	350 E Cermak Rd, Chicago, IL 60616	Email	None		No
4/13/2026	CyrusOne	CHI1-CHI3	2705-2905 Diehl Rd, Aurora, IL 60502	Web Form	Survey Sent	4/28/2026	Yes
4/14/2026	365 Data Centers	365 Data Centers Chicago	427 S La Salle St, Chicago, IL 60605	Web Form	None		No
4/13/2026	Equinix	CH7	111 Plaza Dr, Westmont, IL 60559	Email	Survey Sent	4/13/2026	No
4/13/2026	Stream Data Centers	ORDB	1925 Busse Road, Elk Grove Village, IL 60007	Web Form	Too busy	4/21/2026	No
4/13/2026	Edged	ORD01-1	2835 Bilter Rd, Aurora, IL 60502	Email	None		Yes
4/13/2026	CoreSite	CH1	427 S La Salle St, Chicago, IL 60605	Email	None		No
4/13/2026	DataBank	ORD1	600 South Federal St, Chicago, IL 60605	Web Form	None		No
4/13/2026	EdgeCore	Mesa Campus	3856 S Everton Ter, Mesa, AZ 85212	Email	None		Yes
4/13/2026	NTT Data	PH1	10256 Elliot Rd, Mesa, AZ 85212	Web Form	None		Yes
4/13/2026	Aligned	PHX-01/02/03	2500 W Union Hills Dr, Phoenix, AZ 85027	Email	None		Yes
4/13/2026	Ark	Tucson, Arizona Data Center	1215 E Pennsylvania St, Tucson, AZ 85714	Email	None		Yes
4/14/2026	Login	Arizona Colocation	1855 N 6th Ave, Tucson, AZ 85705	Web Form	None		No
4/14/2026	Winsor Consulting Group, LLC	Winsor Data Center	3821 E Broadway Blvd, Tucson, AZ 85716	Web Form	None		No
4/14/2026	Cologix	COL3	585 Scherers Ct, Columbus, OH 43085	Web Form	None		Yes

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Data Center Contact Log

Initial Contact Date	Owner / Operator	Site Name	Address	Contact Method	Response	Response Date	Cooling Details
4/14/2026	Racksquared	Racksquared Data Centers	325 E Spring St, Columbus, OH 43215	Web Form	None		No
4/14/2026	Google	Google Lockbourne Data Center	5076 S High St, Lockbourne, OH 43137	Email	Survey Sent	4/13/2026	No

Building-Wide Cooling

Centralized Chilled Water Plant with Open-Loop Evaporative Heat Rejection

- How it works: A centralized machine (a chiller) inside the facility cools an internal, sealed loop of water and pumps it through pipes to cool the server room. The leftover heat is sent to giant cooling towers on the roof. Water is sprayed into the open air inside these towers so a portion of it evaporates, dumping the server heat into the atmosphere.
- Water Use: High
- Impact: Requires a continuous supply of municipal tap water to replace the volume lost to evaporation and to purge mineral scaling (blowdown).

Centralized Chilled Water Plant with Evaporative Condensing Units

- How it works: This system eliminates detached rooftop cooling towers by integrating the evaporation process directly onto the chiller units. Hot chemical refrigerant gas travels through sealed metal tubes inside the outdoor unit, while municipal water is sprayed directly onto the outside of these pipes. The water evaporates right on the hot metal surface to instantly chill the refrigerant inside.
- Water Use: Moderate to High
- Impact: Structurally operates as a closed loop because the primary heat-carrying fluid never touches the air. However, because it relies on active water evaporation on the pipe surfaces to shed heat, it still requires a continuous municipal water connection during warm weather.

Closed-Loop Air Cooling

- How it works: Heat from the data center is sealed inside pipes and pumped to massive outdoor fan units (dry coolers). These fans blow outside air across the pipes to cool the liquid down, recirculating the same water continuously with minimal losses.
- Water Use: Low
- Impact: Eliminates most on-site water usage, removing operational strain on local municipal water grids or aquifers.

Direct Expansion (DX) Air Conditioning

- How it works: Uses a chemical refrigerant loop (rather than water) to absorb heat inside the server room and pump it directly to outdoor exhaust fans using a compressor.
- Water Use: Zero
- Impact: Completely water-independent and cheap to install for smaller footprints, but consumes significant electricity at scale.

Direct Evaporative Cooling

- How it works: Often called "swamp cooling," this system pulls raw outside air directly into the building through a water-saturated medium or water mist. The moisture instantly drops the temperature of the air before it is blown directly through the server racks.
- Water Use: High
- Impact: Highly energy-efficient but heavily water-intensive in hot, arid climates. It requires advanced indoor air filtration to prevent outdoor pollution and humidity swings from harming motherboards.

Indirect Evaporative Cooling

- How it works: Clean server room air passes through one side of a sealed metal heat exchanger plate. Outside air is pulled into the other side of the plate and sprayed with water to chill the metal. The two air streams never mix.
- Water Use: Low to Moderate
- Impact: Uses roughly 50% less water than direct evaporative systems because it can run in a "dry mode" without water when outdoor air is cool enough. It keeps the data hall perfectly clean and dry.

Waste Heat-Driven Absorption (or Adsorption) Chillers

- **How it works:** This system replaces electricity-intensive mechanical compressors with a thermal-chemical process. It captures thermal energy either from an on-site microgrid power generator (like gas turbines or fuel cells) or recycled high-grade server exhaust water. This heat drives a chemical loop (typically water acting as a refrigerant mixed with lithium bromide salt as an absorbent) to evaporate and condense fluid, producing chilled facility water with almost zero grid-electricity consumption.
- **Water Use:** Moderate to High (Requires standard external cooling towers to reject the secondary chemical loop heat).
- **Impact:** Drastically slashes data center electricity demand by converting waste heat directly into cold utility loops.

Geothermal / Deep-Water Source Cooling

- **How it works:** This technology bypasses traditional rooftop evaporative towers and fan fields by using natural earth elements as a permanent heat sink. For geothermal setups, a closed loop of sealed piping is buried deep underground to reject heat directly into the earth via conduction. For deep-water setups, naturally cold water is pumped directly from the bottom of a lake or ocean through an intake pipe to a land-based facility heat exchanger. The server room's heat is transferred to this cold-water source before it is returned safely to its origin, ensuring the natural water and internal facility fluids never mix.
- **Water Use:** Zero (The internal process loop is sealed, and it consumes no municipal tap water for open evaporation).
- **Impact:** Represents the absolute peak of facility-level energy efficiency, completely eliminating outdoor mechanical noise, water consumption, and rooftop real estate demands.

Membraneless Liquid-to-Air Dehumidification (Liquid Desiccant Chilling)

- How it works: This system completely removes the traditional "cooling coil" barrier. Warm air from the data center is passed directly through a stream of liquid desiccant (a highly concentrated salt-water solution). The desiccant absorbs moisture and heat straight out of the air simultaneously. The solution is then pumped to a water-independent outdoor unit where the heat is released, and the liquid is regenerated to be used again.
- Water Use: Zero to Low (It captures atmospheric water rather than continuously evaporating it).
- Impact: Provides extreme climate control in ultra-humid environments without using massive compressors, dropping power consumption significantly.

Thermal Energy Storage (TES) via Phase Change Materials (PCMs)

- How it works: Massive storage tanks filled with specialized organic bio-waxes or hydrated salts are integrated into the facility's central cooling infrastructure. During off-peak night hours, when ambient outdoor air is cooler and electricity rates are lower, the chiller plant runs at maximum efficiency to freeze these chemical compounds. During the blazing-hot peak daylight hours, the facility pumps its warm water loops through the melting phase change materials to absorb the server heat. This allows the data center to drastically scale back its mechanical chillers and run them at a highly reduced, optimized capacity during peak electricity demand.
- Water Use: Zero (The material stays strictly sealed inside internal thermal vats).
- Impact: Allows a data center to completely disconnect its power-heavy cooling equipment from the electrical grid during peak daylight hours, protecting municipal power grids from rolling blackouts.

Server Room Cooling

Closed-Loop Air Distribution

- How it works: Indoor fan units constantly distribute the hot air coming out of the servers, blow it across sealed metal coils filled with chilled water to cool it down, and push it back onto the data center floor. The air inside the room is recycled continuously.
- Water Use: Zero (The indoor air handling units themselves consume zero water, but they must be connected to one of the building-wide systems to operate).
- Impact: Keeps indoor humidity and dust perfectly stable, isolating the delicate server environment from the outside world.

Cold Aisle Containment (CAC)

- How it works: Racks are arranged in long rows, and physical doors and ceiling panels are built to lock the cold supply air into a single alleyway. Servers draw from this isolated pool of cold air and blast their hot exhaust out into the rest of the room.
- Water Use: Zero
- Impact: An exceptionally low-cost architectural method to prevent cold air from mixing with hot air, drastically maximizing the efficiency of the room's cooling units.

In-Row Cooling Units

- How it works: Instead of putting large cooling fans against the perimeter walls of the room, compact cooling units are placed directly inside a row of server cabinets, sandwiched between active server racks. They pull hot air out of the hot aisle and blast cold air out the front from just inches away.
- Water Use: Zero (Relies entirely on connected facility plumbing).
- Impact: Drastically minimizes air-travel distance and thermal mixing, making it ideal for targeting localized hot spots.

Overhead / Ceiling-Mounted Refrigerant Modules

- How it works: Instead of utilizing perimeter wall-mounted air handlers or row-level cabinets, specialized cooling modules are suspended directly from the ceiling, hanging over the server rows or hot aisles. These overhead hanging units draw rising hot air upward, pass it across integrated pumped-refrigerant or chilled-water coils, and drop the newly chilled air straight down into the cold aisles via gravity and localized fans.
- Water Use: Zero (Operates as a sealed internal white space component).
- Impact: Completely frees up valuable white space floor real estate, allowing operators to pack more compute racks onto a tight urban land parcel.

Enclosed / Clean-Room Computing Cabinets

- How it works: Individual server racks are completely hermetically sealed from the ambient air of the room. The cabinet features its own internal closed-loop fans and built-in air-to-water heat exchangers integrated directly into the side or frame of the single enclosure. The air loops continuously inside the single locked box, preventing any thermal air mixing with the rest of the facility.
- Water Use: Zero (Controlled entirely by closed internal loops).
- Impact: Eliminates the need to construct complex architectural hot/cold aisle plastic or glass containment walls across the data hall.

Thermosiphon Heat Exchangers

- How it works: A passive, gravity-driven system that uses zero electrical pumping power. A liquid refrigerant sits inside a loop attached to the back of the server rows. As the hot server exhaust hits the coil, the liquid inside instantly boils into a gas and rises naturally to a condenser unit mounted above the ceiling grid. Once cooled by outdoor air, the gas condenses back into a liquid and drops right back down to the server level via gravity.
- Water Use: Zero (Strictly sealed internal loop).
- Impact: Removes the massive electricity overhead usually demanded by thousands of motorized fans running inside the data halls.

In-Row Coolant Distribution Units (CDUs)

- **How it works:** A hybrid row-level machine built for data halls undergoing a slow transition to liquid hardware. These stand-alone cabinets sit inside the server row. They pull water-glycol out of the building's standard chilled-water lines and use high-internal internal heat exchangers to safely convert that facility water into a purified, safe fluid stream. It then pumps that fluid straight to nearby liquid-ready server racks, managing row-level liquid density dynamically.
- **Water Use:** Zero (Isolated safely behind a closed secondary loop).
- **Impact:** Allows older, air-cooled data center halls to dynamically mix standard air racks and high-density liquid AI clusters right next to each other on the same floor.

Hardware-Level Cooling

Rear Door Heat Exchangers (RDHx)

- **How it works:** The standard metal back door of a server rack is replaced with a radiator panel filled with chilled fluid. As the internal server fans blow hot air out the back of the machine, it passes through this door and is chilled back to room temperature before it can heat up the rest of the room.
- **Water Use:** Zero (The closed door loop recirculates internal fluid safely).
- **Impact:** Allows data centers to deploy high-density compute racks without needing a complete hot/cold aisle containment architectural overhaul.

Liquid-Ready Infrastructure Taps

- **How it works:** Pre-installed mechanical plumbing valves, manifolds, and connections built directly into a data center's floor or walls during construction.
- **Water Use:** Zero
- **Impact:** Provides a future-proof building design. It allows standard air-cooled data halls to seamlessly plug in advanced liquid-cooled server loops later on without structural demolition or facility downtime.

Direct-to-Chip (Cold Plates) Cooling

- How it works: Small, sealed copper plates with internal microchannels are bolted directly on top of the server's highest-heat chips (CPUs and GPUs). A treated water-glycol mixture cycles through these plates to absorb heat directly off the silicon die surface before carrying the fluid away through sealed tubes.
- Water Use: Zero (Operates as a strictly sealed, recirculating internal hardware loop).
- Impact: The primary industry solution for modern AI hardware clusters, as liquid cools high-wattage chips vastly faster than air currents ever could.

Immersion Cooling

- How it works: Entire server blades (motherboards, memory, and processors) are completely submerged inside a giant vat filled with a specialized dielectric fluid (synthetic oils or fluorocarbons) that conducts heat but does not conduct electricity. The fluid absorbs heat directly from every surface of the running computer.
- Water Use: Zero (The specialized dielectric chemical fluid is sealed inside the vats).
- Impact: The absolute maximum density cooling technology available. It completely eliminates the need for server fans, drastically lowering energy use for the highest-performing supercomputers and AI training arrays on earth.

Thermoelectric Cooling (TEC) Chips

- How it works: A solid-state electronic technology that relies on the Peltier effect rather than moving fluids or gases. Small, flat semiconductor pellets are sandwiched directly between the hot processor die (CPU/GPU) and a cold plate. When an electric current passes through the TEC device, it forces heat to rapidly transfer from one side of the pellet to the other, creating a hyper-cooled contact surface that instantly pulls heat away from the silicon.
- Water Use: Zero (Solid-state component).
- The Policy Impact: Allows extreme, immediate temperature control over specific localized hot spots on a chip, though it requires significant additional electricity to power the Peltier effect.

Microfluidic On-Chip Cooling

- How it works: Instead of bolting a copper cold plate onto the exterior top casing of a processor, microscopic cooling channels are etched directly inside the silicon structure of the chip itself during semiconductor manufacturing. Treated dielectric coolant or purified fluid pumps directly through the interior of the active chip, removing heat from the core transistors before it can migrate to the surface.
- Water Use: Zero (Sealed completely within a closed-loop hardware chassis).
- Impact: Maximizes thermodynamic efficiency, allowing future AI super-chips to run at extreme clock speeds without experiencing thermal throttling.

Two-Phase Direct-to-Chip (Evaporative Cold Plates)

- How it works: An evolution of the standard single-phase cold plate. Instead of pumping a liquid water-glycol mix that stays liquid the entire time, this system uses a low-boiling-point dielectric chemical liquid. As the fluid passes through the copper plate bolted to the GPU, the immense heat causes the liquid to actively boil and vaporize into a gas inside the microchannels. This state change absorbs vast amounts of heat away from the silicon far faster than a standard liquid stream.
- Water Use: Zero (Chemical fluid remains sealed inside a closed loop).
- Impact: The premier engineering solution for handling high-power AI accelerators that generate extreme thermal spikes beyond the capabilities of standard water-glycol cold plates.

Jet Impingement Cold Plates

- How it works: Instead of letting fluid flow smoothly across a flat copper plate, micro-nozzles inside the cold plate blast high-velocity jets of coolant directly at the exact points on the silicon die where the processing cores heat up the most. This breaks down the thermal boundary layer instantly, forcing rapid heat extraction from localized hot spots.
- Water Use: Zero (Contained inside a sealed chip assembly).
- Impact: Eliminates internal core throttling on custom high-performance computing silicon, allowing processors to run at maximum performance continuously.

In accordance with emerging transparency standards for research, data analysis, and reporting, this statement outlines the specific role artificial intelligence (AI) played in compiling and finalizing this report.

This document was developed through human-led investigative research and statutory cross-referencing, utilizing Large Language Model (LLM) technology strictly as a supportive tool. AI engagement was limited to source identification, structural formatting, and citation editing:

- AI assisted in the preliminary discovery of potentially relevant source materials. The researcher independently verified every identified source and cross-referenced materials when possible.
- AI organized research data into standard policy briefing templates, establishing consistent headings and layouts. The researcher reviewed all content post-AI handling to ensure accuracy was maintained during the editing process.
- AI automated the formatting of endnotes and converted full-length citations into shortened repeat notes. It edited citations to comply with the Chicago Manual of Style (17th/18th Edition). The researcher manually verified each final citation against its source material.

To protect the integrity of this document, AI was not used to draft findings, generate speculative data, or formulate policy claims. Every statutory bill number and court document reference was manually checked against original official records.

The researcher maintains sole accountability for the factual accuracy, arguments, and conclusions presented in this report. Please contact the researcher directly if you notice any inaccuracies or errors in this report at jstahl016@gmail.com.