DATA CENTERS AND THE CLIMATE LANDSCAPE:
AN ACTIONABLE RESOURCE FOR US MAYORS

CLIMATE MAYORS

DATA CENTERS AND THE CLIMATE LANDSCAPE:
AN ACTIONABLE RESOURCE FOR US MAYORS

January 2026

ACKNOWLEDGEMENTS

This report was developed in partnership with **Bloomberg Associates** (Flavio Coppola, Sheetal Shah and Adam Freed). Climate Mayors would also like to extend its appreciation to the following individuals and organizations for their expert review and valuable contributions to the development of this resource:

- Kate Johnson, Cassie Sutherland, Claudia Huerta, Iyad Kheirbek, and Zoë Chafe, **C40 Cities**
- Office of Mayor Kate Gallego: Willa Altman-Kaough, **City of Phoenix**
- Katherine Gajewski, **KG Collaborative**
- Paola Ferreira Miani, Jacqueline Adams, Ruby Wincele, and Kristen Soares, **Climate XChange**
- Louisa Eberle, **Regulatory Assistance Project**
- Noah Goldmann, Alex Lopez, Zach Pierce, and Augusta Gillespie, **Rewiring America**
- Jasmine Chiu and Steve Abbott, **RMI**
- Dr. Margaret Cook, **HARC**
- Amy Turner and Daniel J. Metzger, **Sabin Center for Climate Change Law at Columbia University**
- Tremaine Phillips, **Third Coast Strategies**

ABOUT CLIMATE MAYORS

Climate Mayors is a bipartisan network of over 300 mayors, demonstrating climate leadership through meaningful actions in their communities since 2014. Representing 46 states and over 55 million Americans, Climate Mayors reflect U.S. cities' commitment to climate progress.

Cover photo: Nathan Howard, Getty Images

EXECUTIVE SUMMARY

Data center development is accelerating rapidly across the United States, driven by the growth of cloud computing and artificial intelligence. These projects bring large capital investments but also create outsized demands on local electricity systems, water resources, and land use. For mayors, data centers highlight the broader challenge of managing growth while meeting climate and sustainability goals. **Climate Mayors' objective is to ensure mayors have the resources to shape data center development to reinforce - rather than undermine - local climate, energy and community priorities.** Grounded in needs communicated by mayors, the following information is intended to catalyze peer learning between hundreds of Climate Mayors across the nation, support regional cooperation, and advance strategies that support community sustainability and affordability. This resource focuses on how cities can influence data center development outcomes, even when authority is limited or shared with states, utilities, or regional bodies.

First, cities play a critical role in **shaping where and how data centers are built**. Through zoning, permitting, site plan review, and conditional approvals, cities can guide siting decisions, require design and mitigation measures, and ensure projects align with housing plans, industrial strategies, and long-term land use goals.

Second, while electricity rates and utility planning are largely determined at the state level, **cities can influence whether data center growth raises costs for residents or jeopardizes grid reliability.** Cities can require evidence that new projects will not shift infrastructure costs to other ratepayers, encourage more storage and demand response, and coordinate with utilities and regulators around infrastructure planning.

Third, **cities can set clear expectations around water use, air quality, and noise**, particularly in communities already facing environmental burdens. Data centers can be major water users and rely on backup generation and cooling equipment that affect local air quality and sound levels. Cities can regulate water use where feasible, mandate monitoring and reporting, and adopt enforceable standards to limit cumulative impacts and protect public health.

Fourth, **cities influence whether data center development delivers real local economic value**. Cities can use tools such as performance-based incentives, community benefits agreements, and workforce requirements to strengthen local employment, infrastructure resilience, and accountability over time. By aligning with state and regional economic development agencies, cities can also ensure that incentives, tax policies, and infrastructure investments are justified by public benefit.

This resource equips mayors and senior staff to move beyond reactive decision-making. It offers a practical framework for setting clear standards, engaging communities, coordinating with state and regional partners, and ensuring that data center development supports climate goals, infrastructure affordability, and long-term community priorities.

TABLE OF CONTENTS

INTRODUCTION

As data centers continue to expand across the United States, their individual and cumulative local impacts have become more pronounced. Mayors are increasingly on the front lines of this fast-evolving landscape. Through listening sessions with mayors across the Climate Mayors network, it became clear that mayors need balanced, practical information to help answer key questions about the climate and sustainability impacts of data center development, as well as the policy levers, emerging case studies, and tools available to them. **This resource responds to that need by equipping mayors with actionable guidance to align data center development with local climate and sustainability goals, helping ensure continued progress as this sector grows.**

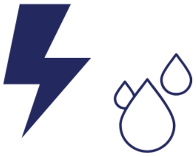
The intense competition to build data centers – many of which need to operate in or near cities – creates a window for mayors to shape outcomes, both within their communities and across broader industry practices. **This resource focuses on how cities can influence data center development through regulation**, **negotiation**, **coalition-building**, **and strategic leadership**, even when construction and operations fall partly outside of direct municipal control. It highlights five key policy areas, illustrated with case studies: **land use planning**, **electricity rates**, **water use**, **air and noise pollution, and economic development**. The outcomes and actions described are not prescriptive, nor are they needed or feasible in every context; cities may choose to focus on a subset of them to align with their local climate and sustainability agenda.

I. WHAT ARE DATA CENTERS AND WHY DO THEY MATTER?

What do data centers mean for cities' climate agendas?

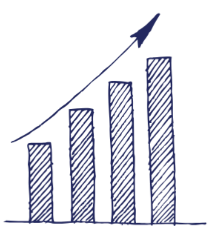
Data centers are the behind-the-scenes infrastructure that keeps digital services running—from cloud tools and artificial intelligence (AI) applications to financial systems, logistics, and government platforms. The computing infrastructure in these data centers operates around the clock and must meet high reliability standards,[1] which drives the demand for very large amounts of energy. Subsequently, this infrastructure generates a lot of heat and thereby requires large cooling systems that can use significant amounts of water and energy. This creates real implications for local utilities and long-term resource planning.

DATA CENTER IMPACTS



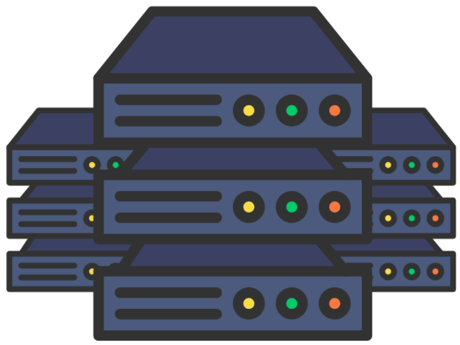
Energy and Water: Data centers have unusually high infrastructure demands. They require large, immediate electricity loads (with hyperscale centers using between 20-100 MW, equivalent to the electricity needed to serve between 16,000 and 82,000 households) and millions of gallons of water per day.

Noise: Equipment at data centers can cause noise levels which contribute to short- and long-term health impacts, including sleep disturbance, cardiovascular effects, and hearing impairment.

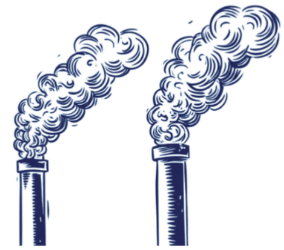


Tax Revenue: Data centers can generate significant property, sales, and income tax revenue.

Jobs: Data centers generate short-term construction jobs, and a limited number of permanent jobs in operations.



Community Investment: Through community benefits agreements and other negotiations, data centers can bring additional discretionary investments for community priorities such as local jobs, energy and water infrastructure, residential energy upgrades, and schools.



Air Quality: Data centers need backup power to cover outages on the grid. Most data centers use fossil fuel generators for backup power, which are usually diesel-powered and emit PM2.5, NOx, and ultrafine particles.

Land Use: Data centers have large footprints (some up to 200-500 acres) with no street activation. These facilities are typically large, windowless industrial buildings or multi-building campuses surrounded by security fencing, electrical substations, and cooling equipment.

As with all development projects, data centers can create positive and adverse effects for localities, residents, and local ecosystems. The image above outlines the impact areas for mayors to be aware of. A more detailed description of each of these impact areas are included in Appendix A.

While it is critical to understand the impacts of individual data centers, it is equally important to understand the **cumulative impact** of data center development where multiple facilities are sited together. This is of particular importance, as recent research shows that data centers are following historic industrialization trends and are clustered in areas with already high levels of pollution and environmental stress (additional information also detailed in Appendix A).[2]

Will data center growth impact our greenhouse gas emissions reduction goals?

Data center development and operations can impact city greenhouse gas (GHG) emission goals and energy systems in several ways:

- **Fossil fuel plant life extension:** Rapid load growth can cause utilities to delay retiring gas or coal plants,[3] derailing short and long term climate reduction goals.
- **New fossil fuel plants**: If new load is met with additional fossil generation, citywide emissions inventories may rise even if a city is otherwise decarbonizing or becoming more efficient.
- **On-site generation from fossil fuel sources:** In regions with limited available grid capacity, some data centers are choosing to rely on on-site generation (typically gas turbines) as a primary power source while awaiting grid connections, in addition to extensive diesel backup systems.

Conversely, the **large amount of energy required by data centers represents an opportunity for companies to bring new clean energy on the grid**, as companies like Google and Microsoft have done.[4]

Will data centers raise electricity bills for my residents?

In the U.S., electricity costs have been rising in recent years due to several factors, including extreme weather, aging grid infrastructure, grid hardening, and growing demand from electrification and new large industrial loads. The recent surge in data center development is amplifying some of these trends by adding large, concentrated new demand to an already stressed system. Data center load growth was the primary driver of recent capacity price increases in the PJM energy market (the wholesale electricity market for 13 states and Washington, D.C.), increasing capacity prices by an estimated 110%.[5] While data center development does not necessarily mean higher electricity rates for residents, without guardrails, it can contribute to rate increases for several reasons, including but not limited to:

- **Grid upgrades and cost-sharing**: New data centers typically require new generation, substations, transformers, and transmission upgrades. Depending on approaches set by utilities and their state regulators, and particular agreements negotiated with developers, these costs could be paid by the data center or passed on to all customers through rate increases.

- **Extension of aging electricity generation sources**: Given the significant increase in electricity demand driven by data center growth, some utilities are proposing to keep outdated fossil fuel power plants operating beyond their planned retirement dates.[6] This is occurring despite the fact that these plants are often uneconomical, more polluting, and require costly upgrades to remain operational; making them more expensive electricity generation resources for utility customers compared to newer, cleaner alternatives like renewable energy and energy storage.
- **Utility rate and tariff structures**: Commercial and industrial rate structures or discounted "economic development" rates can shift costs to households and small businesses if not carefully regulated.
    - When utilities invest in new infrastructure to serve large loads and that load later declines or disappears, the utility may be unable to recover its costs through electricity sales to the original customer. In such cases, those unrecovered costs can be shifted to other ratepayers. Contractual protections, such as minimum payment obligations from data centers embedded in large-load tariffs, can help mitigate this risk.
- **Data center flexibility requirements**: Like other large energy users, data centers can drive up overall system costs when they require electricity during times of already-high demand. However, some data centers could choose or be required to pursue strategies to flexibly adjust their energy intensity and participate in utility "demand response" programs that smooth out total electricity usage over time and avoid costly spikes.[7]

If paired with the right measures, data center development can put downward pressure on electricity rates by spreading fixed utility costs (the costs to maintain the generation, distribution, and transmission infrastructure that makes up the grid) across a larger volume of electricity sales. This outcome depends on ensuring that data centers pay the full cost of serving their load and do not receive discounted rates that shift costs onto other customers.

Will data center growth affect grid reliability?

Large, concentrated data center loads can strain local and regional power systems, particularly where multiple facilities cluster in the same area. Data centers can saturate transmission and distribution infrastructure, reducing available capacity for other users and creating reliability risks during periods of extreme weather. For instance, both data center cooling load and residential air conditioning demand peaks during a heatwave. There have also been occasions where large clusters of data centers have disconnected from the grid simultaneously during voltage disturbances; an abrupt loss of concentrated load can strain stability and increase the risk of wider outages.[8]

In addition to capacity constraints, rapid data center growth can affect the quality of electricity delivered to homes. Irregular spikes in electricity demand from data centers can cause fluctuations in voltage, known as surges and sags, which, if left unaddressed, may damage sensitive equipment, create sparks, or even lead to electrical fires in homes.[9]

Will data centers impact our water systems and availability?

Data centers consume water directly (onsite, primarily for cooling) and indirectly (offsite, through power generation). Indirect water consumption accounted for about 70% of the total water footprint of U.S. data centers in 2023 but varies significantly by region and energy source.[10]

Though direct water consumption accounts for a smaller percentage of a data center's total water footprint, it can have a compounding effect on existing water risks. Since 2022, about two-thirds of data centers built in the U.S. were located in water stressed areas.[11] Furthermore, over 97% of data center operators purchase water from municipal systems, which can create added pressures in areas with already strained water resources and infrastructure.[12]

Direct water use and consumption varies based on data center size and design, as well as geographic and environmental factors like outdoor temperatures. For example, hyperscalers (large technology companies such as Google, Microsoft, or Amazon, building and operating very large data centers) can use between 500,000 to 5 million gallons per day (GPD), equivalent to the water use of 10,000 to 50,000 people, while smaller data centers can consume less than 100,000 GPD.

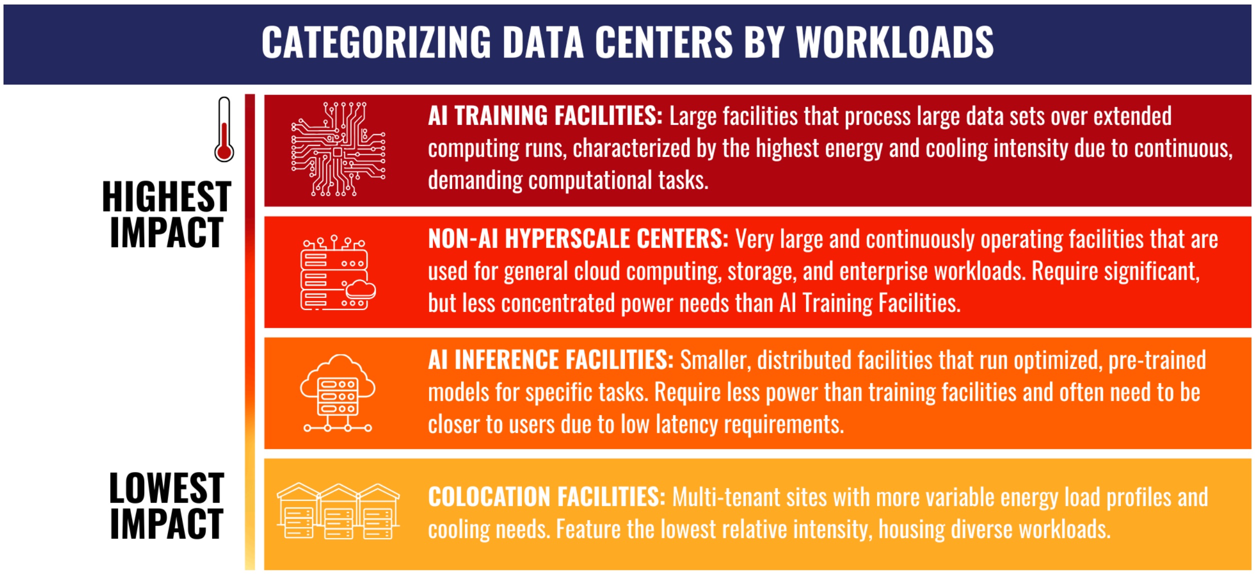
A key driver of on-site water use is cooling, since data centers generate intense heat and must be cooled to protect equipment and maintain operations. Appendix B outlines the different types of cooling systems currently used for data centers and their implications for water and energy consumption. In addition, data centers'cooling effluent can contain elevated concentrations of minerals that need to be treated and discharged, which can overwhelm aging infrastructure. Without water efficiency and reuse methods, these cooling systems can deplete aquifers, exacerbate water stress, affect local water quality, and result in higher water bills for residents. Outside of day-to-day operations, the construction of data centers can sometimes require the removal of groundwater at the site, which can impact local well water supplies.

Why are data centers and their energy use growing so rapidly?

Rapid growth in AI and cloud computing is driving a major expansion of data centers and energy use nationwide, with some regions experiencing more accelerated growth than others (see *FracTracker Alliance's* map of data center development across the US). U.S. data center power demand is projected to rise from about 40 GW today to 106 GW by 2035.[13] This is occurring for two primary reasons. First, the energy needs of individual facilities are growing: while most existing data centers use under 50 MW, many new projects exceed 100 MW, with some proposed at over 1 GW (enough to power 826,000 homes[14]). Second, facilities are getting physically larger: while typical data center sites historically averaged around 40 acres, AI-focused data centers now often require 200–500 acres.[15,16]

Are data centers all the same?

Bloomberg New Energy Finance (BNEF) categorizes data centers into four segments based on their workloads, outlined below. Each has distinct implications for electricity demand, cooling requirements, and siting.



While nearly all data centers developed before 2020 were non-AI hyperscale and colocation facilities, the number of new AI inference[17] and training facilities has been growing rapidly and these data centers are expected to represent over one-third of total data center power demand by 2035.[18]

Much of the planned AI-driven capacity is being built for prospective use and revenues, rather than existing customers and income streams. Competition amongst developers and speculative developments are leading to five to ten times more interconnection requests than the number of actual data centers being constructed.[19] If the anticipated need for data centers is not realized, a future market correction could significantly slow the pace of data center development and potentially create stranded asset infrastructure.

Does data center ownership matter?

Data centers are being developed by different actors, which can impact the levers available to cities to shape their development.

- **Enterprise Data Centers**: Built by companies for their own internal use (e.g., a bank's private facility).
- **Colocation Data Centers**: Built by providers that rent portions of the facility to multiple businesses. These projects may be speculative or have core tenants associated with them.

- **Cloud & Hyperscale Data Centers**: Built by large tech companies (e.g. Amazon Web Services, Microsoft, Google) or developers building for them. These projects may have more certainty associated with uses and sponsoring companies will remain engaged through operations.

Cities tend to have greater influence in cases involving enterprise and hyperscale data centers, because the end users are visible, long-term actors with broader interests in the region. These companies often operate across multiple sites, rely on public infrastructure and regulatory certainty, and have reputational exposure if projects generate community opposition or environmental concerns. As a result, they are generally more willing to engage with cities on sustainability commitments, infrastructure investments, and community benefits, giving cities greater ability to shape outcomes. By contrast, cities typically have less influence over colocation data centers, where end users may be unknown or change over time.

Are there fire risks associated with data centers?

Data centers can present unique risks for firefighters given their concentration of IT equipment, which can contain large lithium-ion batteries. Fires in data centers can produce dense, corrosive smoke that contains known carcinogens and heavy metal particles. Overheated batteries can also burn so hot that sprinkler systems prevent them from spreading but cannot extinguish them. The International Association of Fire Fighters states that the growing concentration of data centers requires specialized training, planning, and close cooperation between local fire safety personnel and on-site security and engineering teams.[20]

II. How Mayors Can Safeguard Community & Climate Priorities in Data Center Decisions

The current wave of data center expansion has heightened competition among developers and increased their reliance on local political support, infrastructure coordination, and community acceptance. This creates a window for mayors to safeguard climate and community priorities through negotiation, coalition-building, and strategic leadership.

Why this moment creates an opportunity for mayors

- **Data center developers seek certainty and speed**. Proactive engagement on the city side can materially reduce development risk and project delays.
- **Large technology companies face heightened public scrutiny around data center development**. Some technology firms that build and/or use hyperscale data centers are eager to structure deals that demonstrate they are constructive, long-term partners to communities, making mayoral support an important source of legitimacy.
- **Data centers are facing increased public opposition**. Mayors can play a key role in engaging and educating residents, setting clear expectations, and channeling community

concerns into enforceable protections and benefits, strengthening the City's negotiating position with developers and reducing the risk of outright project rejection.

- **Intense competition for computing power has altered the negotiating context for cities**. The race among technology companies to secure additional computing capacity is driving aggressive siting timelines and unprecedented capital deployment, with firms willing to absorb significant near-term losses to maintain a competitive position. This dynamic strengthens cities' negotiating position: where expectations are clearly articulated, standardized across jurisdictions, and predictable, cities are often well-positioned to ask for more, without materially deterring investment.
- **Timing matters**. Cities have the greatest influence over data center projects before key approvals are granted (such as zoning changes, conditional use permits, and interconnection agreements). Once these milestones are secured, cities retain enforcement authority but have far less ability to shape core project outcomes.

Negotiating with Intent

- **Lead with clear requirements and feasible pathways**. Cities should enter negotiations with a well-defined set of expectations (covering where data centers should and should not locate, how they can be designed, and what performance standards apply) with a framing of what is possible and needed within the local context, not solely what is prohibited. Clarity reduces friction, shortens negotiations, and strengthens the City's position.

- **Engage residents early and transparently.** Cities should proactively communicate with affected communities about potential impacts, tradeoffs, and mitigation measures, and use public input to inform clear requirements and community benefits agreements. Early, structured engagement can surface concerns before positions harden and help channel resident feedback into concrete outcomes that strengthen the City's negotiating position, reduce uncertainty for developers, and deliver tangible benefits for residents.

- **Think holistically about engagement**. Companies that develop or lease data center space often have multiple touchpoints with cities and the region beyond a specific project. Negotiations should account for the full range of interactions between the City and the company, including land use approvals, interventions in proceedings at the electric utility regulator level, infrastructure coordination, economic development incentives, cloud or procurement relationships, workforce presence, and public relations. These touchpoints collectively shape engagement and mirror the way that companies, in particular large technology companies, think in their negotiations with cities.

- **Differentiate by developer and user type**. Negotiation strategies should reflect who is building and who will ultimately use the facility:
    - Hyperscale self-builds have a higher public profile.

    - Third-party developers are more sensitive to cost structure, tenant requirements, and standardized approval processes

- **Adjust expectations based on project characteristics**. Cities should calibrate asks based on factors such as facility scale, power and water intensity, proximity to sensitive uses, local environmental conditions, and reliance on public infrastructure. Larger, more impactful projects can reasonably be held to higher standards.

Coordinate Beyond City Boundaries

Data center developers commonly pursue parallel siting discussions across municipalities within the same region, comparing sites, approval timelines, and requirements. Without coordination, this dynamic can trigger a race to the bottom, shifting costs and negative externalities across jurisdictions. Even if data centers are not proposed in your city, negative impacts (in terms of air quality, water, electricity rates) can be experienced regionally. A data center with on-site generation from gas turbines will affect air quality across the region, not just in the municipality where it is located. Coordinated action helps cities align expectations, protect shared infrastructure, and strengthen their negotiating position.

- **Coordinate with peer municipalities.** Sharing information and coordinating on minimum standards, incentives, conditions, and negotiated outcomes can help cities align expectations and avoid undercutting one another.
- **Engage regional and metropolitan partners.** Data center impacts extend beyond city boundaries, particularly for electricity, water, and air quality; regional coordination–such as through air quality districts–can strengthen the case for shared standards and positions.
- **Amplify collective positions at the state level.** Where state policy constrains local authority, coordinated mayoral advocacy can influence public utility commissions, legislatures, or governors' offices. This is particularly crucial as the most important factor for data center developers is speed of access to electricity, which mayors typically do not influence directly (except in the case of a municipal utility).

III. City Policy Levers to Impact Data Center Development

Mayors have access to different policy tools depending on their city's governance structure, delegated powers, local priorities, and the characteristics of individual data center projects. This section outlines the primary levers available to cities across five areas: **land use planning and design, electricity rates, water use, air and noise pollution, and economic development & community investment**. For each area, we identify outcomes that cities may seek to achieve to support sustainable and community-aligned data center development as well as specific policies or actions ("tools") that could be used to achieve these outcomes. These outcomes and actions are not prescriptive, nor feasible in every context; rather, they are intended to serve as a guiding framework and a practical menu of options that cities can draw from based on their unique authority and circumstances. A spreadsheet of all the case studies by policy lever provided in this section can be found here.

Land Use Planning and Design

Site and Design Data Centers to Support Broader City Goals

Before approving a data center project, cities should seek the following land use outcomes:

- **Compatibility with surrounding land uses**. Data centers should not displace housing, constrain industrial growth, or conflict with neighborhood objectives.
- **Efficient use of scarce land**. Facilities should minimize footprint through compact, multi-story design where feasible, particularly in urban and near-urban areas.
- **Reduced environmental and community impacts**. Siting and design should aim to limit noise, heat, water consumption, air pollution, and impacts on sensitive or residential uses.
- **Alignment with infrastructure capacity**. Strive for projects to be located in areas with adequate grid, water, and water treatment capacity.
- **Support for decarbonization and circularity goals**. New construction should strive to minimize GHG emissions, prioritize reuse or adaptive redevelopment where feasible, and be designed for district energy integration or future heat reuse.
- **Development transparency and accountability over time**. Engaging with the public, sharing information at the planning stage and seeking feedback from residents on new development enhances transparency and accountability and can help proactively address public concern. Non-disclosure agreements between data center developers and city officials prevent meaningful dialogue and limit transparency and access to critical information. Once developed, a data center's operational performance should be tracked through benchmarking and reporting, where feasible, without compromising critical infrastructure security.

Tools to Achieve These Outcomes

Land use authority varies by jurisdiction, but it is often one of the strongest tools cities have to shape data center development. Cities can use a combination of zoning, permitting, and conditional approvals to translate these outcomes into enforceable requirements:

LAND USE PLANNING AND DESIGN	EXAMPLES AND RESOURCES
Define data centers as their own class within zoning codes or as "large-load customers" or "high impact facilities", enabling cities to craft tailored rules for these uses.[21]	***Chandler, AZ,*** *defined data centers in their zoning code as "A facility or portion of a facility housing networked computer systems and telecommunications equipment used for remote storage, processing, and distribution of data."*

LAND USE PLANNING AND DESIGN	EXAMPLES AND RESOURCES
Create zoning and overlay districts to designate appropriate areas for data centers, or to restrict them in locations where they would conflict with housing, employment, or neighborhood plans.	***Atlanta, GA,*** *prohibits data centers within its Beltline Overlay district, which is a major transportation route with protected green spaces and trails that run throughout the city, and within ½ a mile of transit stations.* ***Prince William County, VA,*** *created Data Center Opportunity Zone Overlay Districts (DCOZOD) to "promote the development of data centers within areas of the County where there is existing infrastructure that could adequately support the proposed use."*
Establish clear siting criteria within permitting processes, including requirements related to grid capacity, water use and discharges, flood risk, and proximity to sensitive uses.	***Fairfax County, VA,*** *amended their zoning ordinance to prohibit new data centers from being built within one mile from a Metro station and 200 feet from residential property lines.* ***Yorktown, VA,*** *requires that data centers have a "letter from the electric utility purveyor indicating sufficient proximity and availability to a substation and transmission lines to serve the proposed data center [to] be submitted to the Department of Planning and Development Services." This is meant to ensure availability of grid capacity to serve the data center.*
Adopt design standards addressing building height, footprint, enclosure of equipment, perimeter landscaping, and noise mitigation to reduce land use and community impacts.	***Phoenix, AZ,*** *requires a 30-foot-wide perimeter landscape setback around data centers, architectural components for buildings exceeding 100 feet, and landscaping that provides 75% shading on sidewalks.* ***Tempe, AZ,*** *requires data centers to be set back 500 feet from residential/sensitive uses.* ***York County, VA,*** *requires data centers and their ancillary equipment to be set back 200 feet from all property lines and 500 feet from any residential dwelling.* ***Prince William County, VA,*** *prohibits the use of chain-link or barbed wire fences, among other design requirements around data centers.*
Require conditional-use permits (CUPs) in designated locations that incorporate	***Loudon County, VA,*** *amended their Zoning Ordinance and Comprehensive Plan to eliminate*

LAND USE PLANNING AND DESIGN	EXAMPLES AND RESOURCES
performance-based requirements and other measures, including: heat-reuse readiness or co-location with district energy systems, benchmarking and reporting of energy and water use (subject to security considerations), embodied-carbon limits and reuse/deconstruction requirements for new construction, noise and air quality mitigation, a decommissioning bond to ensure the site can be safely dismantled at the end of its useful life, and/or community benefit commitments aligned with local priorities (e.g., energy efficiency, weatherization, or other affordability and clean energy projects).	*data centers as a by-right use within the county. This elimination means that proposals are reviewed by staff and sent to the public planning commission for a public hearing, providing an opportunity for community input.* ***Dublin, OH,*** *reclassified data centers from a permitted use to a conditional use in specified innovation/research-oriented districts, which requires additional public review.* ***Phoenix, AZ,*** *adopted a zoning text amendment that requires data centers to provide estimated annual "Power Consumption (MW)" and "Water Consumption (gallons)", and includes a requirement to demonstrate utility service/capacity for the project as part of the special-permit framework.* ***Atlanta, GA,*** *requires special-use permits for data centers, which require the disclosure of water and energy usage, tree removal during construction, and new powerline development.*
Enact temporary moratoria, where needed, to pause approvals while cities update outdated zoning or permitting standards in response to rapid market change.	***Prince George's County, MD,*** *enacted a six-month moratorium on new data center development in September 2025.* ***Aurora, IL,*** *enacted a 180-day moratorium in September 2025 on new data center and warehouse developments to give City staff time to "research best practices and safeguards implemented through zoning ordinances and building codes; study the environmental, stormwater, and utility impacts of data centers; assess fiscal impacts, including long-term service and infrastructure costs; develop potential zoning or performance standards; and report findings and recommendations to [Council] within three months."* ***The Southern Nevada Water Authority*** *enacted a moratorium on commercial and industrial projects using evaporative cooling systems.*

Electricity Rates

Protect Residents from Electricity Rate Increases

Unless data centers are located within the service territory of a municipal utility, cities do not typically directly control cost allocation or recovery, rate design, or interconnection standards. However, they can still play an important role in shaping how the infrastructure needed to serve large new electricity users, such as data centers, is evaluated and approved, and can influence state-level proceedings and other processes that impact electricity rates. When evaluating a data center project, cities should aim for the following outcomes:

- **No cost-shifting onto residents or small businesses**. Data centers should pay for the infrastructure required to serve them (including new generation, substations, feeders, and transmission upgrades) so that these costs are not passed on to ratepayers through rate increases. Cities should press their electric utilities, project owners and developers, and state energy regulators to demonstrate that their projects will not increase residential or small-business electricity bills.[22] As an example, Microsoft recently pledged to "pay our way as a company, to ensure that our data centers don't increase electricity prices."
- **Commitments to additional clean energy procurement.** Data centers should purchase or contract for *new* clean energy, on the same regional grid where consumption occurs,and with hourly matching of generation and consumption (24/7 carbon-free energy) if possible, rather than relying on Renewable Energy Certificates (RECs) from existing clean sources. This ensures that the additional power demand from data centers adds to local or state renewable energy energy capacity, helps retire outdated, costly and harmful fossil generation, and doesn't squeeze out other buyers from the RECs market.
- **Grid-supportive design**. Facilities should include on-site battery storage, participate in utility demand-response programs, and incorporate flexible and interruptible load capabilities into their operations to reduce strain on the grid during peak demand, extreme weather, and other contingency events.
- **Investment in community efficiency and renewables.** Rewiring America[23] estimates that developer investment in heat pumps, rooftop solar, and residential battery storage, energy efficiency, distributed generation and electrification solutions could reduce system-wide demand, ease grid constraints, reduce household energy costs, and meet the growing energy demand from data centers while supporting cities' climate objectives.
    - *While not a direct implementation of this approach, Minnesota's bill HF16 illustrates how policymakers are linking data center development with broader energy system investments: the bill would extend tax breaks for data centers while requiring them to pay $2 to $5 million into a weatherization fund for low-income Minnesotans.*[24]

- **High-efficiency operations**. Cities should require best-in-class efficiency standards, typically measured through Power Usage Effectiveness (PUE),[25] to minimize overall electricity consumption and reduce pressure on grid capacity and infrastructure.

Cities with a Municipal Utility

Cities with municipal utilities often have the strongest ability to influence electricity rates and system impacts.

MUNICIPAL UTILITY	EXAMPLES AND RESOURCES
Design special tariffs for data centers that require full cost recovery and prohibit cost-shifting. This ensures that each negotiated rate goes through an open proceeding to ensure that costs are not socialized by default and interventors can test potentially imprecise cost allocation claims.	***Oregon's*** *POWER Act created a separate rate utility class for data centers, so costs associated with their energy needs are not absorbed by residents.*
Scrutinize special contracts as these contracts are prone to cost shifting as they are confidential and allow utilities to exploit accounting subjectivity.	*A resource on special use contracts can be found here.*
Require 100% additional clean energy procurement for the facility's load, on the same regional grid where consumption occurs and with hourly matching.	*Microsoft signed long-term power purchase agreements with AES Corporation to procure approximately 475 MW of new utility-scale solar capacity across* ***Michigan***, ***Missouri***, *and* ***Illinois***. *The projects represent new-build renewable generation intended to supply clean electricity into the regional grids where Microsoft operates, contributing to the expansion of carbon-free power supply without reliance on existing assets or fossil fuels.* ***In Nevada***, *Google is pursuing a clean transition tariff with NV Energy that is currently under review by the Public Utilities Commission of Nevada. Under the proposal, Google would source electricity from a 115-MW geothermal facility, at a price modestly above NV Energy's standard cost. The tariff is structured to insulate other ratepayers from cost impacts while enabling Google to advance its goal of operating on 24/7 carbon-free energy by 2030.*
Design electricity rates so large data center customers are encouraged to reduce or shift	***In Washington***, *the Grant County Public Utility District does not offer an interruptible tariff or*

MUNICIPAL UTILITY	EXAMPLES AND RESOURCES
their power use during peak periods. Demand charges and peak pricing can reward data centers that adjust operations when the grid is under strain, helping lower system costs and improve grid reliability for other customers.	*tariff-based demand response program; instead, it negotiates such arrangements on a customer-by-customer basis.*
Require on-site storage or microgrid capabilities to support grid reliability.	***Aligned Data Center in the Pacific Northwest** will be deploying a battery system in early 2026, which will provide a 31-MW/62-MWh battery storage, enabling the data center to connect sooner to the grid, as it is used during peak demand. Note that this deployment was market-driven and not the result of negotiations with public authorities.*
Tie interconnection approval to developer-funded grid upgrades.	***The Cheyenne Light, Fuel and Power Company** as well as the **Idaho Power Company** have special contract or tariff provisions that require large load customers to cover new electric infrastructure, line extension, and upgrades for interconnection facilities to cover the costs of serving their new electricity demand.*
Mandate participation in demand-response or emergency load-shedding programs.	***The Michigan Public Services Commission** approved a data center in Washtenaw County with the condition that in an emergency situation, the utility will shut off the data center's power before interrupting other customers. Note that, due to data center's strict reliability requirements, curtailment of electricity for data centers may result in the use of backup generators, with negative air quality consequences if those are powered by fossil fuels.*
Require project co-benefits and explore shared infrastructure investments.	***Lansing, MI,** is working with a data center developed by Depp Green that will supply heat from the facility back to Lansing Board of Light and Water's hot water system, which is expected to bring $1.1 million in annual natural gas savings through reduced demand.*

Cities with State-Regulated Utilities

In investor-owned utility service territories, mayors can use land use tools to prevent new data centers from impacting electricity rates or system reliability. Mayors have indirect but meaningful leverage with utilities, data center developers, and state energy regulators and policymakers.

STATE-REGULATED UTILITIES	EXAMPLES AND RESOURCES
Negotiate community benefits agreements with data center developers that fund priority infrastructure, through land use approvals and development agreements. Cities can require developers to contribute to or fully finance grid upgrades that improve local reliability and support broader electrification goals, including solar PV and battery storage, heat pumps, home retrofits, and EV charging infrastructure, and participation in virtual power plants.	***In Arkansas,*** *Google announced a $25 million Energy Impact Fund to support energy affordability initiatives in Crittenden County and the surrounding region, with investments focused on home weatherization, advanced energy efficiency technologies, and workforce development in the local energy sector.*
Condition land use approval on: ● Written confirmation from the serving utility or regulator that required grid upgrades will be funded by the project under cost-causation principles (customer pays for the cost they create on the system) and will not be recovered from other ratepayers; ● An evaluation of the project's impact on peak load, local reliability, distribution constraints; ● Developer-funded grid upgrades; ● Additional renewable procurement; ● Storage or flexible load; ● Target Power Usage Effectiveness; and ● Participation in utility grid-support programs, e.g., demand response programs.	*Examples of codes and standards that could be used include the* ***EU's Energy Efficiency Directive****, which requires energy audits, performance standards, and public reporting.*
Engage with state legislators, who set the underlying policies for how state regulators (often known as state public utility commissions, PUCs) oversee utilities. Several state legislatures are considering bills on approaches to data center interconnection, electricity rates, and demand response.	*Example forthcoming in future iterations.*
Engage with the state PUC,[26] **in order to:** **Participate in Integrated Resource Planning (IRP) proceedings** and ensure they incorporate reasonable projections for data center growth. IRP is a process required in 30+ states, by which utilities forecast future electricity needs (often over a 10-15 year window) and identify resource options to meet those needs and model projected load growth over time. Data center load growth needs	***The New York State Public Utilities Commission*** *directed Con Edison to only submit "non-emitting" solutions for data center energy needs. This includes "transmission, demand-side projects such as demand response (programs where customers get paid to reduce energy usage when demand is high) or energy efficiency, storage and renewable energy."*

CLIMATE MAYORS

STATE-REGULATED UTILITIES	EXAMPLES AND RESOURCES
can often be overestimated, so it is important for municipalities to be involved with the IRP process to ensure that projections are not overestimated and therefore a cause of utility rate increases. **Advocate for priorities specific to data center development**, including dedicated data center rate classes or tariffs; cost-causation principles; renewable procurement requirements; integrated planning that fully accounts for large new loads; transparency in regulated utility service negotiations with data centers; and fully contested proceedings on data center tariffs, as such proceedings allow for concerned stakeholders to bring forth evidence, fully review utility proposals, and help ensure state regulators have sufficient evidence to limit rate impacts on other customer classes.	***The Michigan Public Services Commission*** *recently approved a tariff for customers in excess of 100 MW. The rate structure requires these large customers to sign long-term power contracts with steep penalties for early exit, and for the utility to demonstrate that an individual large customer will shoulder all of the additional interconnection and transmission costs.* ***The Georgia Public Service Commission (PSC)*** *adopted a new rule requiring new Georgia Power customers whose peak load exceeds 100 MW to cover the upstream generation, transmission, and distribution costs incurred by the project. Additionally, any new contracts between Georgia Power and large-load customers must be submitted to the PSC for review.*
Use the renegotiation of franchise agreements with utilities[27] to set expectations on planning, transparency, and cost allocation, where the timing of the franchise cycle allows, recognizing that these agreements are long-term and may not be open for renegotiation when new data center projects are proposed.	*A resource on lessons learned from franchise agreements can be found here.*
Coordinate with peer cities to create joint positions on rate and infrastructure issues, including IRPs, increasing influence in state-level proceedings. Engage with other cities through intergovernmental agreements, in order to cooperate on common zoning and land use definitions for data centers, infrastructure planning and cost sharing, and requirements for on-site generation or demand response participation.	*Example forthcoming in future iterations.*

Water Usage

Enable Sustainable Water Use in Data Centers

Goals and priorities for sustainable water use will vary by geography, environment, and jurisdiction. Before approving a project, cities should aim for the following outcomes in relation to data centers' direct water use and cities' water resources and authority:

- **Prevent impacts to aquifers and local water supplies.** Data center developers and owners, in conjunction with cities and municipalities, should ensure site selection considers local aquifer, groundwater, and ecological health, as well as any natural hazards. The construction process and day-to-day operations should integrate water efficiency measures and onsite wastewater recycling, as well as real-time monitoring to proactively identify and address any impacts to local water supplies.

- **Implement the best available technology.** Data centers should utilize the most water and energy efficient cooling systems available to them according to their load size and local environmental conditions, and, when possible, waterless cooling. For example, data centers in dry climates or water stressed regions should be mandated to install water recycling or direct liquid cooling with air cooled chillers, and use renewable sources for the increased energy demand.
- **Coordinate with water utilities.** Both public and private water utilities should engage in long-term coordination and planning with data center developers and operators. This includes integrating data center water use into asset management and master plans, requiring regular reporting on water use and consumption, and requiring data centers to pre-treat effluent before discharging.
- **Pursue infrastructure investments.** Modern and efficient water infrastructure is critical to long-term data center operations. Cities dealing with capacity constraints and funding gaps in municipal water and wastewater infrastructure have an opportunity to negotiate investments in upgrades and new construction from data center developers and owners.
- **Improve transparency and reporting.** Regular and accurate reporting from data centers on their water use is critical for both water management and community trust. Cities should refrain from entering into agreements that shield developers from disclosing estimated water and energy use or potential health impacts. Once data centers are operational, they should submit annual, publicly available consumption reports to water suppliers. Reports should be audited by third parties.

Tools to Achieve these Outcomes

These are several policy levers and resources cities can leverage to monitor water use and mitigate potential impacts.

GENERAL RECOMMENDATIONS	EXAMPLES AND RESOURCES
Conduct water availability assessments and environmental screens on the current state of, and potential impacts to, groundwater, aquifers, and ecosystems on or adjacent to the data center sites. These assessments should include existing sources of heavy water consumption (like agriculture or other industrial activity) and water system capacity constraints (like failing wastewater infrastructure) to better project cumulative impacts. Findings should be made publicly available and used to inform data center siting and permitting approvals.	*Cities can use holistic tools like the World Resources Institute Aqueduct Water Risk Atlas (which identifies multiple types of water risks) and Green Grid's Water Use Impact (WUI) calculator (a metric that combines water stress and onsite water consumption) to model current and future risks.*
Update building codes and design standards with requirements specific to water use in data center construction and operations, including closed loop systems, onsite water recycling, and, where possible, waterless technologies to cool data centers, as well as real time water and wastewater monitoring systems to track onsite Water Use Effectiveness (WUE).[28] Design standards should include rack designs that prioritize efficient heat capture.	***Tucson, AZ,*** *requires users expecting to use more than 7.4 million gallons/month to submit an application with a water conservation plan that includes a description of water use and projected annual/monthly/daily demand, efforts to reduce consumption and improve efficiency, and periodic updates.*
Engage in regional water resource coordination to develop and strengthen approaches to assessing water risks, negotiating infrastructure investments, and promoting environmental conservation and protection.	*The* ***Southern Nevada Water Authority*** *enacted a moratorium on commercial and industrial projects using evaporative cooling systems*
Require that data center owners submit audited reports on estimated water use and consumption to obtain a business license and periodic reports on actual water use and consumption during operation. In dry climates or water stressed areas, owners should include their estimated WUI in applications and include actual WUI scores in their subsequent reports.	***Detroit, MI,*** *has a water benchmarking ordinance that requires buildings of a certain size (including data centers) to report their annual water usage. Public disclosure is then meant to encourage efficiency improvements year to year.*
Where states manage groundwater rights, **collaborate with the state to set daily withdrawal limits** and require that developers apply for water withdrawal permits for any surface or groundwater withdrawals of potable or non-potable water above a specific threshold. State agencies should	*In* ***Virginia,*** *projects for surface water withdrawals that total more than 10,000 gallons per day from non-tidal waters require a Surface Water Withdrawal permit from the Department of Environmental Quality before withdrawing surface water or disturbing a wetland or stream by clearing, filling, excavating, draining or ditching.*

GENERAL RECOMMENDATIONS	EXAMPLES AND RESOURCES
conduct thorough environmental reviews as part of the permit approval process.	*In **New York**, a Department of Environmental Conservation permit is required for any type of non-agricultural water withdrawal system having the capacity to withdraw 100,000 gallons per day or more of surface or groundwater.*

Cities with a Municipal Water Utility

Cities with municipal utilities often have the strongest ability to influence water use and system impacts.

CITIES WITH MUNICIPAL WATER UTILITIES	EXAMPLES AND RESOURCES
Require that large quantity customers submit a conservation plan with their water application and provide regular reports on their WUE, set daily consumption limits, and/or prohibit municipal water departments from supplying potable water for cooling systems.	***Marana, AZ,** prohibits the provision of potable water for a data center principal/accessory uses.* ***Phoenix, AZ,** requires developments consuming more than 500,000 gallons of water a day to offset this by using at least 30% recycled or conserved water.*
Leverage and enforce the Clean Water Act's (CWA) pretreatment regulations for industrial users to set discharge limits and, if necessary, require pre-treatment of cooling effluent.	*Example forthcoming in future iterations.*
Integrate data center water use and consumption into master and asset management plans. These updates should be based on real-time monitoring and annual reporting from data center operators.	***Dublin, OH,** requires: "All new development must connect to the public water and sewer system operated by the City of Dublin (in coordination with the City of Columbus, which supplies the water). As part of any proposed development project, an applicant must demonstrate that adequate capacity is available to serve the proposed development and ensure the required infrastructure for water and sewer is designed to meet City of Dublin standards and Ohio EPA requirements. Additionally, any proposed new development has to meet the City of Dublin's Stormwater Management Design Manual requirements related to stormwater."*
Require that operators pay for upgrades to, or any new construction of, water and wastewater infrastructure needed to service their data center. These costs should not be passed on to ratepayers, and the municipality should retain ownership of new and upgraded infrastructure.	***Dalles, OR,** signed a $28.5 million agreement with Google to improve the city's water system, including two wells, two reservoirs, a pump station, and a sanitary sewer, and transferred full ownership of the new facilities to the city following construction. Google also financed an Aquifer Storage and*

CITIES WITH MUNICIPAL WATER UTILITIES	EXAMPLES AND RESOURCES
	Recovery System, which collects surplus surface water during rainy seasons for use in dry seasons and transferred ownership to the city.

Cities with a Private Water Utility

Cities with a private water utility can still influence water use and system impacts by coordinating with state agencies and regulators that oversee water rights, permitting, and utility operations.

CITIES WITH PRIVATE WATER UTILITIES
Work with the state to mandate and regulate asset planning and wastewater management between utilities and data centers.
Work with the state to regulate and enforce State Pollutant Discharge Elimination System (SPDES) programs (in those states authorized to implement CWA programs).[29]

Air Quality and Noise

Minimizing Noise and Air Pollution

Before approving a project, cities should seek the following outcomes:

- **No additional public health burden:** Data centers should not materially worsen local air quality or noise exposure, especially in communities already facing cumulative pollution and health risks.
- **Cumulative impacts explicitly addressed:** Air quality and noise impacts should be evaluated in the context of existing industrial activity and clustered data center development, not assessed project-by-project in isolation.
- **Best-available mitigation as the default:** Developers should utilize the cleanest feasible backup power technologies, advanced noise controls, and design strategies that minimize emissions and sound at the property boundary.
- **Predictable, transparent, enforceable performance standards:** Noise and air quality limits should be clearly defined, measurable, and enforceable over the life of the facility, not just at the time of approval. Monitoring data on air quality and noise should be regularly collected and made publicly available, with clear consequences for non-compliance.
- **Protection of nighttime conditions:** Special care should be taken to limit noise at night, recognizing that continuous low-frequency noise and intermittent generator testing can have outsized health and quality-of-life impacts.

Tools to Achieve these Outcomes

CITY LED ACTIONS FOR AIR QUALITY & NOISE	EXAMPLES AND RESOURCES
When evaluating permitting applications, conduct an independent environmental screen of existing sources and levels of noise and air pollution, including the cumulative impact of data centers. These assessments should be made available for public comment and review.	***New York City's*** *City Environmental Quality Review (CEQR) is a comprehensive framework for environmental decisionmaking by City agencies. Under CEQR:* • *An air quality assessment determines a proposed project's effects on ambient air quality, including NOx emissions and pollutants from increased vehicular traffic.* • *A noise assessment determines proposed project's potential effects on existing noise sensitive uses and/or locations.* • *Public comment periods are mandated by state and city rules at certain steps of the environmental review process.*
Prohibit on-site fossil fuel generation for primary or routine operations, through land use powers, building codes (when possible), or under a city's mandate to protect public health. Cities should ban or strictly limit the use of on-site fossil-fueled generation (including natural gas turbines or engines) as a primary or extended power source, allowing fossil fuel-based systems only for true emergency backup where no feasible alternative exists.	*Example forthcoming in future iterations.*
Restrict the use of diesel generators for backup power, and mandate alternative backup energy sources like battery storage, hydrogen fuel cells, or natural gas. If diesel generators are used, update backup generator permits to require the newest, Tier IV models.	***New York City*** *Local Law 38 of 2015 mandates that all new and registered stationary generators (excluding emergency generators) must meet Tier IV emissions standards in order to receive a renewed certificate of operation.*
Restrict generator operation to emergencies and tightly defined testing windows. Permits could explicitly prohibit non-emergency economic dispatch (such as for compensated demand-response operations) or routine grid-support operation of on-site generators, and limit testing to daytime hours with caps on annual run hours.	*Example forthcoming in future iterations.*

CITY LED ACTIONS FOR AIR QUALITY & NOISE	EXAMPLES AND RESOURCES
Where multiple facilities are located or significant fuel deliveries will be needed, require a traffic analysis and transportation plan for construction and fuel delivery trucks. Emissions from these trucks should be incorporated in environmental reviews and planning.	*Example forthcoming in future iterations.*
Update design codes and siting guidelines to mandate that exterior HVAC equipment, backup generators, and other industrial equipment are enclosed with acoustic barriers and a minimum buffer from residential or sensitive uses.	***Tempe, AZ,*** *requires that data center backup generators be located in an enclosed building with necessary ventilation.* ***Fairfax County, VA,*** *requires mandatory setbacks from residential areas (at least 200 feet), pre- and post-construction noise studies, and requirements for physical noise barriers for equipment.*
Establish strict noise limits through zoning or other ordinances, which could be tied to pre-operational ambient noise. Ordinances should address noise from individual developments and cumulative sources.	***Divide County, ND,*** *has the strictest noise limits for data centers at 50 dBA for daytime operations and 45 dBA at night.* ***Phoenix, AZ,*** *stipulates that noise levels cannot exceed 55 dBA during the day and 45 dBA from 10 pm to 7 am for data centers adjacent to residential areas.* ***Marana, AZ,*** *sets maximum decibel levels by type of property and time of day. For example, in residential areas, data centers cannot make noise greater than 55 dBA during the day or night.*
Set frequency-specific limits. Traditional noise regulations often use dBA (A-weighted) measurements, which may fail to capture the low-frequency humming characteristic of data center fans. Many ordinances are now adding dBC (C-weighted) standards to regulate these low-frequency "bass" sounds.	***Chicago, IL's,*** *Municipal Code (Article VII, Noise & Vibration Control) includes octave-band maximum sound pressure levels (tables by octave band center frequency) for manufacturing districts along residence/business-commercial district boundaries.*
Mandate independent noise impact studies both before construction (modeling) and within 60 days of occupancy to ensure actual operational noise meets limits.	***York County, VA,*** *requires a sound study be conducted to evaluate existing ambient noise prior to project development and modelling predicted noise generation after development, including generators and ancillary equipment. Upon construction, data centers cannot "produce any sound that exceeds the existing ambient noise captured in the sound study or 55 dBA, whichever*

CITY LED ACTIONS FOR AIR QUALITY & NOISE	EXAMPLES AND RESOURCES
	is greater, when measured from the boundary of the property on which it operates."
Ensure a robust public noise complaints and monitoring process and levy meaningful fines for operators that violate noise limits. If necessary, cities should update their zoning codes to increase maximum fines. Repeated violations should result in certificate of occupancy revocation.[30]	***Chandler, AZ,*** *requires early neighbor notification and meetings focused on project design and sound-mitigation for proposed data center projects.*

City-state coordination

Many cities will need to collaborate with the state to regulate the use of backup generators and mitigate impacts to air quality.

CITY-STATE COORDINATION ON AIR QUALITY	EXAMPLES AND RESOURCES
Work with the state to **mandate air quality permits** for industrial backup generators. Permitting requirements should include that NOx and PM emissions tests be conducted within 30 days of permit application or renewal with continued annual reporting, as well as annual generator tune ups.	*The* ***Washington State Department of Ecology*** *issues air quality permits to data centers to limit air pollution that comes from diesel-powered backup generators. Permit requirements include a health impact assessment and regular testing.*
Work with the state to **establish standards for NOx and PM emissions from distributed energy sources**.	*The* ***New York State Department of Environmental Conservation*** *adopted NYCRR Part 222, which requires that compression-ignition engines (which are used in diesel generators) with nameplate ratings greater than or equal to 750 horsepower must have an NOx emission rate less than 0.50 grams per brake horsepower-hour.*
Work with the state to **prohibit generator testing and maintenance on days with high air pollution forecasts.**	*The* ***New Jersey Department of Environmental Protection*** *requires that emergency generators shall not be used for normal testing and maintenance on days with forecasted "unhealthy" air quality as defined in the EPA's Air Quality Index.*
Work with the state to **set annual hourly limits on non-emergency use of diesel generators**, including maintenance, testing, and demand response.	*A 2025 EPA clarification allows backup generators to operate for up to 50 hours per year to prevent interruptions to local power supply, when the engine is dispatched by the local balancing authority or local transmission and distribution system operator.*

Economic Development & Community Investment

Maximizing Local Economic Value

Many state and regional economic development agencies are competing to attract data center projects through incentives and other forms of public support. While significant economic development incentives are often provided at the state-level, cities should coordinate closely with these entities to align expectations, avoid working at cross-purposes, and ensure that state or regional incentives reinforce local priorities. At the same time, before offering their own incentives or public support, cities should seek the following economic development outcomes:

- **Public value commensurate with public cost.** Incentives, tax abatements, or infrastructure investments should deliver clear benefits that justify foregone revenue and public expenditure.
- **High-quality, future-proof facilities.** Public support should favor "gold-standard" projects that exceed baseline requirements on energy efficiency, water stewardship, resilience, and community integration.
- **Local economic participation.** Data center development should support local employment (where possible), workforce development, and local supply chains, rather than delivering primarily capital-intensive benefits with limited local spillovers.
- **Alignment with citywide infrastructure and climate priorities.** Economic development tools should reinforce city goals related to decarbonization, water consumption, grid resilience, utility affordability, and heat recovery.
- **Accountability over time.** Incentives should be performance-based, with clear metrics, reporting requirements, and consequences for non-compliance.

Tools to Achieve These Outcomes

Cities can use economic development authorities and negotiated agreements to align data center projects with public priorities.

ECONOMIC DEVELOPMENT & COMMUNITY INVESTMENT	EXAMPLES AND RESOURCES
Require Community Benefits Agreements (CBAs) to secure enforceable commitments such as local hiring and purchases, workforce training, public infrastructure investments, or community-scale energy and resilience improvements. Cities can also develop a standardized CBA menu of pre-approved community benefits, co-designed with residents and businesses, giving developers clear expectations and reducing one-off negotiations while increasing certainty and	***The Lancaster, PA,*** *City Council approved a community benefits agreement associated with a data center development that includes a $20 million upfront financial commitment and a set of enforceable environmental and quality-of-life protections. The agreement is structured to secure funding during construction while placing clear operational conditions on noise, air quality, and commitments to procure clean energy.*

ECONOMIC DEVELOPMENT & COMMUNITY INVESTMENT	EXAMPLES AND RESOURCES
consistency across projects. Setting up a Community Advisory Group to oversee the establishment and implementation of the CBA ensures continued community engagement and accountability.	
Limit tax abatements, exemptions, or financial incentives to projects that meet clearly defined "gold-standard" criteria related to energy efficiency, on-site clean energy, water reuse, and heat-reuse readiness.	*Example forthcoming in future iterations.*
Tie eligibility for incentives to specific project features, including on-site clean energy generation or storage, non-potable water use, heat recovery, and measurable **local employment outcomes**	***Indianapolis, IN,*** *redesigned its incentive framework to center equity outcomes, restructuring tax abatements to better align with broader municipal policy goals. A similar approach could be applied to data center development by embedding eligibility criteria that tie public incentives to measurable sustainability performance and to commitments for local workforce participation.* *In* ***Michigan,*** *the state's tax incentive program for data centers requires developers to meet certain sustainability criteria such as using water from the municipal utility (rather than groundwater), procuring clean energy, and meeting energy performance targets.*
Include clawbacks or step-down mechanisms that allow cities to recapture incentives if developers fail to meet agreed performance or reporting requirements.	*Example forthcoming in future iterations.*
Condition public investments in roads, substations, water lines, or other enabling infrastructure on **developer contributions and alignment with broader city plans**.	*Example forthcoming in future iterations.*
Carefully design Tax Increment Financing (TIF) tools to **capture and allocate a portion of the additional property tax revenue generated by data centers for reinvestment in priority infrastructure or community benefits.** Note that TIF does not generate additional revenue: it earmarks tax revenue that would have gone to the general fund for a specific use, which can help	***Atlanta, GA,*** *uses Tax Allocation Districts (TADs) to capture the growth in property tax revenue and reinvest it back into the community. These funds support projects such as infrastructure improvements, park and street upgrades, and new housing. The City currently has eight TADs, each guided by its own redevelopment plan. Any data centers built within these districts would add to the*

ECONOMIC DEVELOPMENT & COMMUNITY INVESTMENT	EXAMPLES AND RESOURCES
build local support for the development as part of a broader negotiation effort.	*tax base and help generate additional revenue for reinvestment.*
Adjust tax structures to better capture the value created by data center development and redirect it toward local priorities.	***Henrico County, VA,*** *is implementing a 550% increase in taxes on equipment for data centers, which is being invested into a community housing fund for residents making 60% to 120% of the area median income.*

Conclusion

As data center development accelerates, the choices cities make today will shape not only local outcomes but the broader trajectory of this rapidly expanding sector. Mayors have a unique ability to ensure that growth aligns with community priorities—protecting resources, strengthening resilience, and advancing climate and energy goals. By engaging early and consistently in the policy, regulatory, and planning processes that influence data centers, cities can secure clearer benefits, mitigate risks, and set expectations that reflect the needs of their residents.

Just as importantly, mayors do not have to navigate this landscape alone. Continued collaboration across the Climate Mayors network will be essential for sharing emerging practices, coordinating approaches, and elevating a unified voice on issues that transcend any single jurisdiction. By learning from one another and working collectively, cities can help shape a data center ecosystem that supports innovation while upholding the values of sustainability, equity, and long-term community well-being.

APPENDIX A

DATA CENTER CONSIDERATIONS FOR CLIMATE AND ENERGY IMPACTS

Energy and water: Data centers have unusually high infrastructure demands. They require large, immediate electricity loads (with hyperscale centers using between 20-100 MW, equivalent to the electricity needed to serve between 16,000 and 82,000 households) and continuously operate,[31] which can create challenges for the electricity grid. In 2023, data centers consumed significant shares of electricity in Virginia (26%), North Dakota (15%), and Oregon (11%).[32] Data center cooling systems (which can utilize a combination of air, water, or liquid refrigerants) can be a significant driver of electricity consumption and, in many cases, require substantial water use. Cooling systems that use less or no water often have higher energy demands.

Air quality: To meet reliability standards, data centers need backup power to cover outages on the grid. Most data centers use fossil fuel generators for backup power, which are usually diesel-powered and emit PM2.5, NOx, and ultrafine particles (in California, 90% of back-up generators are powered by diesel).[33] Increased particulate exposure contributes to asthma, ER visits, cardiovascular disease, and premature mortality, especially in already overburdened areas. In Virginia alone, backup generators from data centers are estimated to cause 14,000 asthma cases per year.[34]

Noise: Noise exposure can cause a number of short- and long-term health impacts, including sleep disturbance, cardiovascular effects, and hearing impairment. The World Health Organization states that continuous exposure to sound levels above 70 dB(A) can cause hearing impairment.[35] The noise generated by data centers can vary based on the type of cooling system and equipment they utilize.[36] Data centers can produce continuous noise from cooling equipment and intermittent high-level noise from backup generators, with outdoor HVAC systems often measuring 55-100 dB(A) and diesel generators reaching 85-100+ dB(A) during testing or operation.[37] For comparison, normal conversations can rate 60-70 dB(A), lawnmowers 80 to 100 dB(A), sports events 94 to 110 dB(A), and sirens from emergency vehicles 110 to 129 dB(A).[38]

Land use: Data centers have large footprints with no street activation: these facilities are typically large, windowless industrial buildings or multi-building campuses surrounded by security fencing, electrical substations, and cooling equipment. Given their large size, data center campuses can crowd out housing, industrial, or mixed-use redevelopment. These factors make it essential for cities to evaluate proposals early and ensure they align with local climate goals, infrastructure plans, master plans, and long-term land use objectives.

Tax revenue: As large capital investments with economic activity on-site, data centers can generate significant property, sales, and income tax revenue. Data centers typically pay two primary types of property taxes: real property tax, which applies to the land on which they are built and the permanent structures that sit upon it; and personal property tax, which is assessed on non-permanent assets such as the servers inside data centers. The latter can be quite substantial given the high value of equipment. Loudoun County, VA, which hosts the world's largest concentration of data centers, projects $1.37 billion in computer equipment tax revenues in 2026.[39] In some cases, tax revenues are foregone or offset as incentives to attract developers; while tax incentives can be established at the state level, they can affect municipalities due to loss in tax revenue from the state.

Jobs: Data centers generate short-term construction jobs, and a limited number of permanent jobs in operations. Unless developer agreements or regulations specifically require local hiring, many of the construction jobs can go to transient workers who specialize in data center construction, not local workers.

Investment: Through community benefits agreements and other negotiations, data centers can bring additional discretionary investments for community priorities such as local jobs, energy and water infrastructure, residential energy upgrades, and schools.

Frontline communities**:** In California, the median pollution burden score for locations of all existing and planned data centers is 7 out of 10 (with 10 representing the highest pollution burden).[40] Across the U.S., communities within one mile of data centers deal with higher levels of PM2.5, NO_2, and diesel particulate matter, and are disproportionately communities of color.[41]

APPENDIX B

DATA CENTER WATER COOLING SYSTEMS

Cooling systems consist of a loop of cooling fluid that pulls heat from the computing equipment, and heat rejection equipment that pulls heat from the cooling fluid. The different types of cooling fluid and heat rejection equipment vary in their water and energy efficiency. While cooling technology is rapidly evolving to reduce water and energy use, a system's total water consumption depends on which heat rejection system and cooling fluid are paired:

Low water / High energy

- **Cooling fluid: Closed loop and water recycling systems**, which reuse chilled water as the cooling fluid, reduce water consumption by 50%-75% compared to evaporative cooling (if paired with water efficient heat rejection equipment) but increase energy demands and costs.[42]
- **Heat rejection: Air-cooled chillers**, which use ambient air and mechanical fans to remove heat from cooling fluid, are more energy intensive and generally used in data centers with lower density racks.[43]

High water / Low energy

- **Cooling fluid: Evaporative cooling systems**, which cool hot air by passing it over water-soaked pads that are continuously moistened. These systems are less energy-intensive but can consume millions of gallons of water per day.
- **Heat rejection: Water cooled chillers** use water from a cooling tower to remove heat from cooling fluid. They are more energy efficient than air cooled chillers for higher density racks.

Low water / Low energy

- **Cooling fluid:** Some hyperscale data centers, particularly in Europe, use **Direct Liquid Cooling (DLC)**, which pipes liquid coolant (not water) directly onto servers or chips and is especially effective for high density racks to absorb heat in a closed loop system. DLC systems are both water and energy efficient, but costly, and must still be paired with heat rejection equipment. According to a 2024 survey of data center operators, 22% of respondents in the U.S. were using DLC, although nearly half of those used it on fewer than 10% of their racks.[44]

Water and wastewater monitoring are also key considerations, as this data is critical to understanding and mitigating potential impacts. In 2021, only 10% of data center operators tracked water use across their facilities.[45] Of those that did not track water use, 63% said there was no business justification for doing so, suggesting that water costs are relatively low compared to other operating costs.

CITATIONS

[1]Reliability standards describe how continuously a data center must operate from a business standpoint (typically allowing little to no downtime) and are achieved through redundant power supplies, backup generators, multiple network connections, and continuous cooling so services remain available even during grid outages or equipment failures. Hyperscale data centers typically aim for "seven 9s" uptime (99.99999%).

[2]https://kaporfoundation.org/datacenters-envt-health/

[3]https://www.utilitydive.com/news/load-growth-plant-retirements-blackouts-doe/752408/

[4]See, for example, Google's geothermal project in Nevada: https://www.utilitydive.com/news/google-fervo-nv-energy-nevada-puc-clean-energy-tariff/719472/

Microsoft commits to procuring 10.5GW of new clean energy from Brookfield: https://bep.brookfield.com/press-releases/bep/brookfield-and-microsoft-collaborating-deliver-over-105-gw-new-renewable-power

[5]https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2025/2025q3-som-pjm.pdf

[6]https://www.utilitydive.com/news/a-fraction-of-proposed-data-centers-will-get-built-utilities-are-wising-up/748214/

[7]Utility regulator directs Con Ed to address reliability concerns

[8]https://www.reuters.com/technology/big-techs-data-center-boom-poses-new-risk-us-grid-operators-2025-03-19/

[9]https://www.bloomberg.com/graphics/2024-ai-power-home-appliances/

[10] https://www.eesi.org/articles/view/data-centers-and-water-consumption

[11]https://www.bloomberg.com/graphics/2025-ai-impacts-data-centers-water-data/

[12]https://www.wateronline.com/doc/u-s-water-related-expenditures-data-centers-exceed-us-b-through-0001

[13]]BloombergNEF. US Data Center Outlook 2H 2025: The Boom Gets Bigger. December 1, 2025.

[14]Average U.S. household electricity consumption is about 10,566 kWh per year, or roughly 28–30 kWh per day, which corresponds to an average continuous power draw of approximately 1.2 kW. https://www.eia.gov/consumption/residential/data/2020/c%26e/pdf/CE8.5.M.2020.AverageSiteElectricityConsumption.pdf

[15]http://www.techtarget.com/searchdatacenter/feature/The-increasing-concern-of-data-center-land-acquisition

[16]https://cushwake.cld.bz/Data-Center-Development-Cost-Guide-2025

[17]AI inference refers to customers using trained models to generate predictions or responses in real time.

[18]BloombergNEF. US Data Center Outlook 2H 2025: The Boom Gets Bigger. December 1, 2025.

[19]https://www.utilitydive.com/news/a-fraction-of-proposed-data-centers-will-get-built-utilities-are-wising-up/748214/

[20]City of Phoenix Planning and Development Department, "Health and Safety Impacts: Data Centers." City of Phoenix, Phoenix, AZ, 2025.

[21]Large load customer is a term used by the Federal government.

[22]https://rmi.org/large-energy-users-want-power-heres-how-to-protect-other-ratepayers-from-the-costs/

[23] https://www.rewiringamerica.org/newsroom/press-releases/peak-demand-report-2025

[24]https://www.mprnews.org/story/2025/06/18/data-centers-face-new-regulations-in-minnesota

[25]PUE is defined as the ratio of total facility energy use to energy used by IT equipment. A PUE of 1 indicates perfect efficiency, meaning all electricity is used directly by computing equipment, not for cooling or other uses. Note that discussions on the best metric for data center energy efficiency are evolving, as PUE doesn't account for efficiencies in the energy use of the compute load itself.

[26]https://pubs.naruc.org/pub/41BBF1F5-ED6E-79C8-CC25-14E9721A6E8B

[27]An electricity franchise agreement is a negotiated contract between a municipality and an electric service provider. In 30 states, municipalities have authority to negotiate their franchise agreements; this makes it an important tool to advance their objectives. https://www.sciencedirect.com/science/article/abs/pii/S0301421520303554

[28]WUE is defined as total water used by a facility divided by IT equipment energy use, expressed in L/kWh. Lower WUE values indicate more water-efficient operations, but the metric does not capture local water scarcity or the source of water. Source: www.thegreengrid.org/system/files/store/WUE_v1.pdf

[29]The EPA manages National Pollutant Discharge Elimination System programs in Massachusetts, New Hampshire, Idaho, and New Mexico. Other states have their own SPDES program

[30]https://docs.google.com/document/d/1x8KsCVOhJS97rxzdd_bWW4Me1Errpj6ggyU5dAdNKUM/edit?pli=1&tab=t.0

[31] While all data centers operate continuously, their energy demand profiles vary according to the categories described in the previous section. AI training facilities have significant spikes in their load demand when the training models are being run; while these spikes have more acute impacts on the grid, it makes this category well-suited to demand-response programs. Non-AI hyperscale centers have "flatter" load profiles, which are more predictable but potentially less flexible and less suited to demand-response programs. AI inference facilities have load shapes that match user activity (for example, there is more ChatGPT inference-driven demand during the workday than at night). Co-location facilities' load profiles are harder to predict due to the variety of their tenants.

[32]https://www.pewresearch.org/short-reads/2025/10/24/what-we-know-about-energy-use-at-us-data-centers-amid-the-ai-boom/

[33]https://www.businesswire.com/news/home/20211006005088/en/New-Study-Shows-a-Rapid-Increase-of-Diesel-Fueled-Backup-Generators-Across-California

[34]https://arxiv.org/abs/2412.06288

[35]https://www.who.int/publications/i/item/a68672

[36]https://ketchumandwalton.com/5-sources-of-noise-in-data-centers-how-to-control-it/

[37]https://www.techtarget.com/searchdatacenter/tip/Understanding-the-impact-of-data-center-noise-pollution

[38]https://www.nidcd.nih.gov/news/2020/do-you-know-how-loud-too-loud

[39]https://www.bizjournals.com/washington/news/2020/10/19/loudoun-data-center-revenue-growth.html

[40]https://www.techpolicy.press/data-center-boom-risks-health-of-already-vulnerable-communities/

[41]Communities Close to EPA-Regulated Data Centers Face Heightened Air Pollution – Environmental Data and Governance Initiative

[42]https://www.grundfos.com/media/latest-news/whitepaper--water-circularity-can-reduce-water-stress-and-boost-

[43] Rack density refers to the amount of electrical power and computing equipment packed into a single server rack.

[44]https://intelligence.uptimeinstitute.com/sites/default/files/2024-05/Uptime%20Institute%20Cooling%20Systems%20Survey%202024_0.pdf

[45]https://uptimeinstitute.com/uptime_assets/4d10650a2a92c06a10e2c70e320498710fed2ef3b402aa82fe7946fae3887055-2021-data-center-industry-survey.pdf