

August 17, 2026

TO:

Supervisor Hilda L. Solis, Chair  
Supervisor Holly J. Mitchell, Chair Pro Tem  
Supervisor Lindsey P. Horvath  
Supervisor Janice Hahn  
Supervisor Kathryn Barger

FROM:

Amy J. Bodek, AICP   
Director of Regional Planning

Barbara Ferrer, Ph.D., MPH, M.Ed.  
Director of Public Health



**ADDRESSING THE HEALTH AND ENVIRONMENTAL IMPACTS OF DATA CENTERS  
([ITEM NO. 10, APRIL 14, 2026](#))**

On April 14, 2026, the Board of Supervisors (Board) instructed the Departments of Public Health (Public Health) and Regional Planning (DRP), in consultation with the Departments of Public Works, County Counsel, Internal Services Division, Fire, and the Chief Sustainability Office to report back on the following in 120 days:

1. Findings regarding the health, environmental, and safety impacts of data centers on neighboring communities, the impact on electrical and water resources, and a review of how other jurisdictions around the County are regulating data centers within urban areas.
2. A community education and outreach campaign, that is culturally competent and inclusive of multiple languages, to inform residents of potential impacts of advancing technologies and include the County's current ability to provide oversight of these facilities. This campaign should include subject matter experts attending community meetings, and information sessions.
3. Incorporating community and key stakeholder feedback, including from labor partners, community-based organizations, and subject matter experts, to deliver recommendations on how the County should address the health and land use impacts of data center developments in unincorporated Los Angeles County, including, but not limited to, code

amendments and corresponding environmental analysis, and recommended protocols to safeguard the health and wellbeing of impacted residents in surrounding communities.

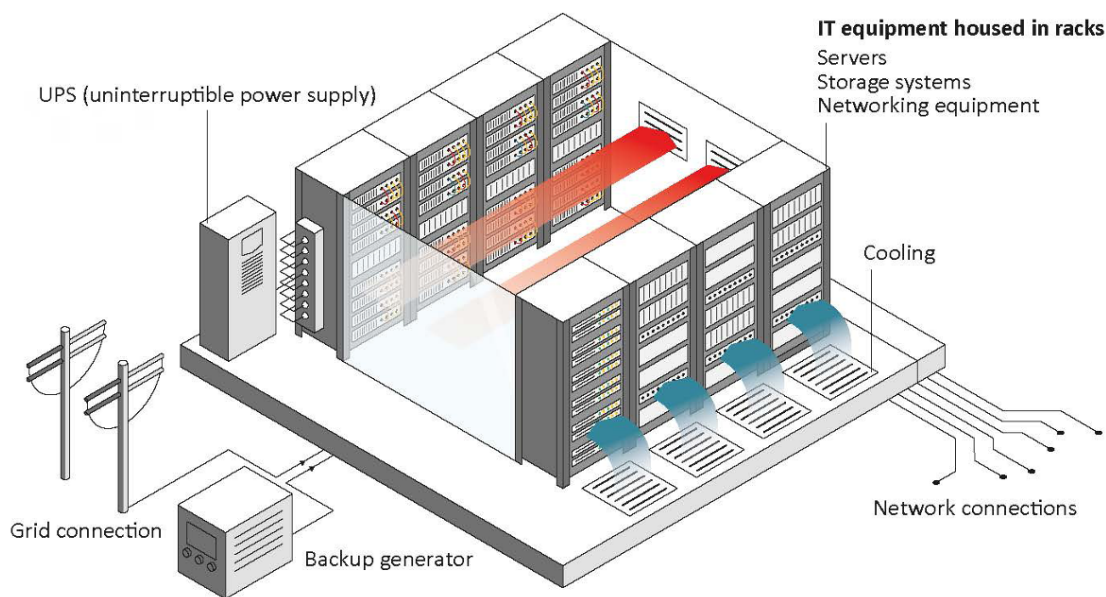
4. Recommendations for the creation of a robust community benefits infrastructure, incorporating emerging information from other impacted jurisdictions across the country, including, but not limited to:
  - a. Minimization of utility rate impacts associated with data center energy usage on surrounding communities;
  - b. Minimization of water utilization;
  - c. Potential requirements for developers to pay for associated costs that impact energy usage, including an associated fee structure, such as environmental health inspection fees, as well as any associated fees utilized for community benefits;
  - d. Requirements for data centers to utilize clean energy sources to minimize environmental health impacts on residents; and
  - e. Requirements for data centers to employ a workforce that is paid a living wage and meet County local hire goals.

## INTRODUCTION

Basic components of modern living, such as synchronized traffic lights, or the ability to attend a meeting virtually, all rely on some level of **data management**. Emerging uses of Artificial Intelligence (AI) computational infrastructure also require data management, but to a much greater demand. This significant demand for AI computational infrastructure has the potential to negatively reshape the use of land, water, and energy resources for communities across the country in ways not previously anticipated if not properly regulated.

**Data centers** are part of a broader set of computational infrastructure necessary to manage an increasingly complex and interconnected world. **Traditional data centers** that stored large computational computers (supercomputers) have existed since the mid-1940s, when they were originally developed for government use. In the 1960s, these supercomputers were single, isolated machines that executed complex calculations, typically for universities or large corporations. As computers evolved for commercial application, servers replaced the mainframe, and on-site server rooms required specialized environments, raised floors, and heavy power lines. These single-enterprise data centers served the needs of the individual entity, were costly to run and required specialized staff, space needs and power infrastructure. The limitations of space constraints and the growth of personal computing in the 1990s led to purpose-built data centers in the 2000s. Purpose-built data centers allowed entities to outsource their infrastructure needs, either through third party managed services or co-located facilities. These traditional data centers are in many communities and are hard to distinguish from other commercial or industrial uses. They do not generate excess noise, impact air quality, or require new energy infrastructure to support their operations.

The advent of generative AI technology, cloud computing, the interconnectivity of ‘smart’ consumer devices like cell phones, appliances, and automobiles, and the increased demand for automation, streaming services, data analytics, and data storage has driven the demand for much larger data centers, generally referred to as **hyperscale data centers**. Hyperscale data centers are typically associated with large companies such as Meta Platform, Google Cloud, Microsoft’s Azure and Amazon Web Service, that can remotely support the multi-cloud storage and computational needs of thousands of individual servers. These servers then support individual company and business needs through cloud computing, remote servers, or hosted servers.



Source: IEA (2025)

Although there is no industry-wide consensus on the definition of larger data centers, this report will use the terms hyperscale, distributed and large scale data centers interchangeably. These types of data centers are different from traditional data centers. To be clear, hyperscale or distributed data centers differ from traditional data centers that serve the needs of individual entities in their size and scale, use of resources like power, water, and land, and their negative environmental impacts compared to smaller, traditional data centers.

## **DIRECTIVES 1 and 3: KEY FINDINGS and CONSIDERATIONS**

### **I. Land Use/Economic Development**

#### Land Use Regulations and Legislation

At the time of this report, 15 states are considering temporary moratoria on hyperscale data centers. New York is the first state to enact a statewide moratorium while it investigates potential regulations and guidelines. Several cities and counties in California, Arizona, Georgia,

Illinois, Iowa, Michigan, Missouri, Texas, Utah and Virginia have adopted land use regulations, moratoria, bans, or reports on distributed data centers, and 28 state legislatures and U.S. Congress have adopted or are considering bills on hyperscale data centers, which are summarized in Attachment 1 to this report.

The City of Monterey Park enacted a moratorium in response to a proposed 50 MW data center, and then followed with a local ballot measure, which passed with over 88% of the vote. The measure amends the City's General Plan to prohibit data centers of a certain size, unless it is repealed by voters.

In California, local jurisdictions can adopt a moratorium to temporarily ban any land use, provided specific findings are made demonstrating the land use would result in *current and immediate* threats to health, safety or public welfare. Since the County has not received any applications for a hyperscale data center, it would not be able to substantiate the necessary findings.

Because the County cannot legally make the necessary findings to support a moratorium, the County should focus on developing a zoning ordinance that defines and prohibits hyperscale data centers while still conditionally allowing traditional data centers that support specific uses. The development of a zoning ordinance allows staff and stakeholders sufficient time to clearly define the differences between traditional data centers and hyperscale data centers, develop an appropriate policy for the unincorporated areas, and conduct California Environmental Quality Act (CEQA) review.

#### Market for Hyperscale Data Centers in the Unincorporated Areas

Based on limited discussions with data center developers, Los Angeles County does not appear to be a strong market for hyperscale data centers due to its regulatory environment, lack of availability of sites, and the high cost of land and power. In addition, developers have expressed preferences for jurisdictions with municipal power utilities, such as the City of Vernon, instead of the County's unincorporated communities.

#### Jobs/Employment

An important consideration in the discussion of job creation and data centers is job generation. Construction jobs are temporary in nature while the required and ongoing maintenance, testing, adjusting, balancing, removal and installation of equipment, etc. creates some limited high-skilled job opportunities. Any policy around incentives and/or community benefits should ensure labor protections and efficiencies to support ongoing job creation.

#### Thresholds/Defining Data Centers

Title 22 of the Los Angeles County Code does not define data centers of any kind. Nationally, data centers are typically defined and classified by their energy demand and scale and can vary in size from 1 MW to 100+ MW; approximately 5,000 to 100,000+ square feet; and approximately 10-100+ acres. Larger facilities house other hardware components, including

switches, routers, and storage devices. In addition, they house infrastructure components such as power and cooling systems, air distribution systems, and uninterruptible power supplies (UPS).

Any facility with a capacity of 50 MW or more, and with back-up power generation, is subject to review by the California Energy Commission (CEC). This process also triggers CEQA review for projects that would otherwise be reviewed by-right by local jurisdictions.

Other considerations for defining data centers include such definitions as self-consuming data centers, in which the data center serves the business premises where it is located; co-locations, in which a data center is shared with another primary use on a site; adaptive reuse, in which a data center is converted from an existing use, such as an office building; and accessory uses, in which a data center is incidental to a primary use on a site, such as a medical office building. All of these nuances would be clearly defined in a future zoning ordinance.

## **II. Health Impacts**

There are various health related impacts associated with hyperscale data centers due to their operational design, functioning, and waste byproducts that include air pollution, noise pollution, wastewater byproducts that strain municipal infrastructure, and increased environmental heat. While health impacts may result from all kinds of data centers, hyperscale data centers due to their size and scale of operation produce the greatest concern associated with these health impacts.

It should also be noted that the health impacts associated with data centers (except where specified) would largely best be addressed through design and development standards and operational guidelines, outside of Public Health's regulatory role. As such standards and operational guidelines are developed by authorized permitting agencies, Public Health could provide subject matter expertise and input on how health impacts could be minimized.

### Air Pollution

Hyperscale data centers represent a potential significant source of both localized and regional air pollution. Many facilities rely on diesel generators for back-up power to prevent operationally catastrophic data loss during electrical outages. Hyperscale data center operations require a significant amount of energy, as a single facility may house dozens of industrial-sized diesel generators that cumulatively provide tens of megawatts (or more depending on the size of the facility) of back-up power that is approximately the equivalent of a small power plant. To ensure that these diesel generators will properly function during an emergency, they must undergo regular monthly testing. During testing, these diesel generators release concentrated plumes of diesel particulate matter (DPM) and nitrous oxide (NOx) that create air pollution in the immediate area of the facility and degrade local air quality in the surrounding neighborhoods. Regionally, the continuous power usage of hyperscale data center computing may strain the local electrical grid resulting in the use of fossil fuel power plants in the larger surrounding areas to increase output. In areas prone to smog, such as LA County, this grid strain has the potential to directly accelerate ozone formation.

The health effects of these emissions can potentially impact the respiratory and cardiovascular systems of residents living near data centers. The increased levels of fine particulate matter (PM<sub>2.5</sub>) and NO<sub>x</sub> released by the diesel generator exhaust has been found to enter deep into the lungs, increasing asthma attacks and worsening Chronic Obstructive Pulmonary Disease. Beyond respiratory damage, long-term exposure to PM<sub>2.5</sub> is associated with increased inflammation throughout the body, leading to higher risks for heart attack, stroke, and hypertension for residents living in adjacent neighborhoods. The compounded effects of these acute local diesel emissions and elevated regional smog disproportionately harm vulnerable populations. This places a cumulative health burden on children (whose lungs are still developing), older adults, and communities already suffering from poor environmental quality and historical pollution.

If hyperscale data centers were to be permitted in unincorporated areas, staff recommends the County could mandate cleaner alternative backup power sources and develop a roadmap to transition diesel backup generators to 100% zero carbon by a set target year.

### Noise Pollution

Unlike typical commercial buildings, data centers operate under constant thermal loads (heat) that require constant around-the-clock industrial cooling. Hyperscale data centers require exponentially more cooling than smaller traditional data centers. The acoustic footprint of these facilities is driven by large-scale machinery, including rooftop air handling units, exterior chillers, cooling towers, and hundreds of high-velocity exhaust fans. When these systems are operating at capacity, they can generate and produce noise that is upwards of 90-100db (whereas County health code establishes a limit range of 40–70db depending on area and time of day). A major factor in this acoustic noise profile is that the cooling equipment primarily produces a continuous, low-frequency noise (typically <100 hertz). This low frequency noise travels further and penetrates residential walls more easily than higher pitched sounds. These continuous low-frequency noises can create physical vibrations in windowpanes and interior walls, making the noise difficult to mitigate with conventional home insulation or closed windows.

The health effects of this 24/7 industrial noise can lead to neurological and physiological stress responses in exposed communities nearby. The continuous noise can penetrate residential structures and prevent nearby residents from quality sleep leading to chronic fatigue, cognitive impairment, and diminished immune function over time. Because the human auditory system remains active during sleep, constant exposure to this industrial sound keeps the autonomic nervous system in a persistent state of arousal. This chronic physiological arousal triggers the release of stress hormones such as cortisol. Being exposed to prolonged low-frequency noises has been found to be associated with adverse health outcomes, including elevated blood pressure, increased resting heart rate, and a higher risk of cardiovascular disease. Furthermore, continuous exposure to this type of noise pollution is also associated with psychological stress that may lead to anxiety, irritability, and overall decreased quality of life for residents in the surrounding community.

To address local noise pollution from hyperscale data centers the County Noise Code (Title 12) could be updated to establish a health-based threshold for low frequency and continuous noise and to require strong noise mitigation measures, such as:

- Requiring developers to conduct noise studies that assess emissions during peak operations and include data on use of emergency power sources; and
- Requiring the development, implementation, and monitoring of site-specific noise prevention and mitigation plans that comprehensively address multiple sources and types of noise pollution.

These noise mitigation measures through updates to the County's Noise Code (Title 12) would only apply in unincorporated areas of the County, for which the County and the Department of Public Health, have jurisdiction. Cities could also be encouraged to adopt these noise mitigation measures into their noise pollution ordinances or other municipal regulations addressing hyperscale data centers that would be enforced at the local municipal level.

The County could also consider incentivizing the use of liquid cooling systems for new data facilities as these systems do not require the use of large exhaust fans and other noise-emitting exterior equipment. A trade-off of shifting to liquid cooling is the increased use of hazardous chemicals in the site's operations.

#### Wastewater (Blowdown) and Municipal Infrastructure Strain

To prevent algae growth, mineral scaling, and corrosion of data center cooling systems, many hyperscale data centers regularly use industrial chemicals such as biocides, anti-corrosives, and scale inhibitors. As water cycles through the cooling infrastructure, heavy metals such as lead, copper, and zinc can also leach from piping and mechanical components. After water evaporates during the cooling process, the concentration of these chemicals and leached metals steadily increases. As a result, these facilities periodically flush the accumulated mixture ("blowdown") into the local municipal wastewater system.

The introduction of this blowdown can place a specific burden on municipal wastewater infrastructure. Municipal treatment plants are designed and scaled to process standard domestic wastewater. The regular discharge of blowdown can introduce high volumes of water with elevated levels of heavy metals and chemical. If large amounts of blowdown overwhelm the treatment facility, it can potentially impair the plant's operational efficacy and may cause the utility to exceed its discharge limits.

While scientific studies have not directly linked hyperscale data center wastewater discharges to specific health outcomes in surrounding communities, the chemical compounds and metals involved carry established toxicological risks. If municipal treatment systems are overburdened and fail to adequately filter these industrial compounds prior to discharge, there is a potential risk of these elements entering local water supplies. Chronic, low-level ingestion of heavy metals like lead and copper, along with industrial chemicals, have been found to cause gastrointestinal issues and place strain on organs (such as the liver and kidneys). Additionally, certain anti-corrosive byproducts and scale inhibitors resist degradation and can accumulate in local watersheds. Ultimately, the potential indirect health risks to the community are closely tied to the operational strain these facilities can place on local water treatment capabilities.

In general, hyperscale data center developers are shifting to the use of closed-loop water systems, which both reduce the depletion of local municipal supplies and prevent continuous

wastewater release from flowing directly into local sewage systems. The County could develop incentives to further support this market-driven shift; however, closed-loop systems require higher use of electricity and indirectly contribute to other associated negative outcomes.

### Environmental Heat: Localized Warming and Community Health Risks

Data centers generate considerable heat and usually manage this by pumping the hot exhaust outside, which raises localized temperatures and worsens the Urban Heat Island effect. When heat is simply vented outdoors from the data center, the warming creates a public health risk to those living in the surrounding area. This constant heat exhaust can prevent natural nighttime cooling, depriving nearby residents of the chance to recover from daytime heat stress. This constant heat burden and the resulting stress is associated with higher rates of heat-related illnesses and ER visits.

Measures to prevent and mitigate local impacts from facility heat exhaust include design options such as heat dissipation buffers and targeting exhaust equipment to direct heat farther up and away from nearby neighborhoods.

### **III. Energy Use**

Hyperscale data center development has grown significantly over the prior decade due to consumer demand and advances in computing technology. This has led to a tripling of energy load growth in the United States since 2014, and by 2030, this demand could double again. California currently ranks third in the number of hyperscale data centers, and they account for approximately 2% of peak energy demand. By 2040, they are expected to account for 9% of peak demand, representing a significant increase in energy consumption.

Last year, Pacific Gas & Electric (PG&E), which supplies power to much of Silicon Valley, reported that the amount of hyperscale data center energy demand waiting to be connected to the grid was equivalent to more than 10% of California's current total generation capacity, enough electricity to power roughly 8 million homes. In Southern California Edison's territory, which includes large portions of LA County, demand has been more moderate. Projections are that demand could reach 0.45 gigawatts (GW) by 2045, whereas PG&E demand is expected to be 2.3 GW. Increases in data center energy demand have potential implications for LA County, including energy affordability, greenhouse gas emissions, and grid reliability.

### Energy Affordability

Nationally, as well as in California, retail electricity prices have increased faster than inflation due to a variety of factors. While studies do point to hyperscale data centers driving rate increases in the mid-Atlantic region, in particular, in California they have not been the main driver of these increases. The difference in data centers' impact on local and regional retail electricity rates can be largely attributed to variances in state and regional regulatory structures, as well as local and regional market conditions.

Between 2020 and 2025, electricity prices in California rose over 60%, a substantial increase that adds cost pressure to households and businesses. These increases are largely the result of wildfire mitigation expenditures, deferred distribution and transmission investments, Net Energy Metering rate structures, increased electrification of homes, businesses, and vehicles, and investor-owned utility (IOU) profits. While hyperscale data center growth is a component of increased electricity usage in Southern California, they are not the largest source of past and anticipated load growth.

Much of the impact this type of development has on energy prices will be dependent on state action since utility rates are set by the California Public Utility Commission (CPUC). Current and developing guardrails, such as Electric Rule 12, 15, and 16, are already in place, and the CPUC opened a new Order Instituting Rulemaking on Advanced Electric Rate Design (Rulemaking 26-02-002) that looks directly at whether a new rate tariff for hyperscale data centers should be established to prevent cost-shifting to everyday ratepayers. A number of developing measures and legislative proposals will further address this issue. SB 57 (Padilla) authorized the CPUC to evaluate the financial impact of large data centers on the electric grid, and this will be published by January 1, 2027. Pending SB 886 (Padilla), if enacted, would establish separate electricity tariffs for large-load customers, including larger data centers, and requires them to prefund grid upgrade costs. This would help prevent cost shifting of infrastructure investments if a facility ceases or reduces operations. Because of the speculative nature of demand right now, establishing “take or pay” type model would help address the potential risk of these infrastructure investments. Additional bills under consideration, such as SB 1168 (McNerney) and AB 222 (Bauer-Kahn), aim to address data center-related costs and data transparency.

Because of high energy prices, long interconnection times, and significant regulatory requirements in place in California, hyperscale data centers often look to develop in neighboring states with fewer barriers. At the same time, California’s robust information technology, aerospace, medical science, entertainment, and other critical sectors do benefit from local data centers to maintain their cutting edge and provide low latency services to businesses and residents in our region. With proper rate structures, data centers could offset rising utility prices for all users because fixed distribution and transmission costs are spread across greater loads as well as the higher average load factors (average power use versus peak power use) for data centers can increase utilization of electric grid infrastructure.

Aside from supporting current bills and CPUC rulemaking, the County could limit the size of new data centers of any kind by their electricity load, and work with the California Energy Commission to adopt higher energy efficiency standards for data centers within Title 24 codes.

#### Greenhouse Gas Emissions and Air Quality

California and LA County have some of the most ambitious carbon neutrality goals as well as clean energy goals in the nation. California’s energy supply is 67% clean energy, reflecting that it is on track to meet the State’s 2045 zero carbon grid goal. Nearly 31,000 MW of clean energy resources have been brought on since 2019, and more than 75,000 MW of additional clean

energy supply is expected to be added by 2040, reflecting the State's commitment to both achieve a clean energy system, while building grid reliability.

The CEC produces an annual Energy Demand Forecast, which serves as a key planning tool for California energy agencies. In 2024, it began integrating projected data center load growth into the forecast, and based on its analysis, data centers will not impact the State's 2045 zero carbon grid goal. Additional measures at the state and local level could be adopted to require or encourage data centers to invest in and utilize clean energy resources. Michigan, Oregon, and Minnesota recently passed laws that aim to align data center development with their clean energy goals, and California has proposed legislation, SB 886 (Padilla) and SB 887 (Padilla), that would support this. The County can also support a clean energy grid transformation through implementation of Goal 7 actions in the Our County Sustainability Plan and updating of the Renewable Energy Ordinance.

The County could consider requiring new facilities to acquire 100% renewable energy from the utility or Clean Power Alliance.

#### Grid Reliability

All data centers rely on high availability of power, and most data centers maintain diesel backup generators to ensure power redundancy.

Beyond providing redundancy for the data centers themselves, backup generators can also provide grid flexibility during peak energy demand. During a historic heatwave in July 2026, the Department of Energy directed data centers in the mid-Atlantic states to switch to backup generators to maintain grid stability, with the associated consequence of emission of diesel particulate matter and nitrous oxide that impact air quality. Heatwaves have placed similar stresses on California's grid in 2022, and cleaner back up power would offer improved options for grid flexibility. The County should support the development (with guardrails) and safe deployment of other clean backup power options and advocate before the California Air Resources Board for Tier 5 Rulemaking that would set the strictest limits on emissions from backup generators in the nation.

#### **IV. Water Use**

Data center water usage closely parallels energy usage. As data centers use more energy, they consume larger amounts of water to cool their equipment to prevent overheating. While data center servers and equipment can be cooled by air, water is generally cheaper and more efficient.

Water demand falls into two categories – direct on-site demand for cooling servers and equipment, and the indirect water needs for site construction, power generation, and manufacturing of equipment. Indirect water demand often makes up the majority of a data center's water needs, particularly if it is being powered by fossil fuel-based energy. A study conducted by UC Riverside estimates that data center water consumption in California has

nearly doubled between 2019 and 2023, and 94-95% of that water consumption is from electricity generation rather than direct on-site demand.

The most commonly used cooling method is open-loop or “evaporative” cooling, which also uses the most water. Approximately 80% of the water withdrawn for evaporative cooling is lost to the atmosphere. Using this method, a hyperscale data center can consume up to 5 million gallons of water a day – equivalent to a town population of between 10,000 – 50,000 people. In addition, the water used at hyperscale data centers is often potable water that is supplied by the local public water agency. Such a significant new demand on local water systems can strain water supplies and potentially raise water rates.

There are several new technologies available to reduce water usage for on-site cooling. This includes closed-loop systems that allow for reuse of water, immersion cooling, and the use of non-potable water. While these technologies have a higher upfront cost, they can significantly reduce potable water usage. These methods also increase energy needs and thus potentially increase indirect water consumption.

Availability of water is another consideration for the siting of these facilities. LA County is in a water stressed region with more than half of the water supply imported from other areas. Over 200 water agencies deliver a mix of groundwater, surface water, imported water, and recycled water to meet the needs of residents and businesses. This dispersed and complex network of local water purveyors makes it difficult to estimate the water impacts of hyperscale data centers on individual unincorporated communities. Seasonal fluctuations in water availability add further complexities. During the hottest times of the year, hyperscale data center water consumption peaks at the same time as local water and energy demand is at its highest. This has the potential to strain local resources and further add to water infrastructure costs to meet peak period demand.

Urban Water Management Plans, which are submitted to the State by large water suppliers, help ensure there is adequate water supply to meet existing and future water needs. Data center demand is not specifically identified in these plans and is instead grouped into the Commercial, Industrial, and Institutional (CII) category, making it challenging to know the impact current or future data centers may have on the region’s water supply. Estimates put data center water consumption for the State at approximately 13 billion gallons, but information specific to LA County is unknown.

Available water usage information on specific existing or proposed facilities is also limited as data center developers and owners regard this information as proprietary, and most states, including California, do not yet require public reporting. The exception is if a proposed project is subject to the CEQA, the local water supplier may also be required to prepare a Water Supply Assessment under SB 610. This assessment provides public information about the facility’s projected demand and how it may impact availability over a 20-year horizon. According to a report from the non-profit Next 10 and co-authored by Santa Clara University, very few Environmental Impact Reports or Water Supply Assessments have been done for data centers located in LA County, further underscoring the limited public information available.

Taken together, this lack of transparency makes it challenging to plan at a regional level or even set water usage standards. Proposed California legislation currently under consideration aims to address this. AB 2469 (Papan) and AB 2169 (Papan) require data center operators to disclose projected and actual annual water consumption—including "indirect water use" used in off-site electricity generation—to local water suppliers and city or county authorities before receiving or renewing business licenses. Water suppliers are required to include data center demand in their Annual Water Supply and Demand Assessments, and the bill also directs the Department of Water Resources to develop data center guidelines and water use best practices for cities and counties to use. SB 887 (Padilla) specifies that data center projects do not qualify for categorical exemptions under CEQA and sets up expedited judicial review for facilities meeting strict clean energy and water efficiency benchmarks to encourage conservation. These bills would significantly expand transparency at the local, regional, and statewide level.

Additional opportunities exist for information sharing and collaboration. The County Water Plan (CWP) sets a countywide roadmap to achieve water resilience and was developed in coordination with many of the region's water agencies and other interested parties. CWP Task Forces have been established to support implementation, and this may be an optimal forum for leaders from across LA County to discuss and collaborate on data center-related issues.

## **DIRECTIVE 2: COMMUNITY EDUCATION CAMPAIGN**

### Community Engagement Meetings

On June 10, June 17, and June 24, staff from the identified departments held three virtual meetings, with a total attendance of 250 participants.

At each meeting, staff provided an overview of the unincorporated areas, a summary of stakeholder comments, clarifications on various issues such as moratoria, battery energy storage systems (BESS), and regulating data centers in other jurisdictions; and provided a deep dive into issues related to land use, energy use, water use, and health and safety. Staff also stressed that concerns regarding BESS should be directed to the separate Renewable Energy Ordinance Update effort. Furthermore, staff clarified that the County does not have jurisdiction to regulate land uses in cities; however, there is an opportunity to engage with adjacent cities to discuss and coordinate on proposed projects. The meeting also included a group activity using Mentimeter and an open question and answer period.

Most comments and questions expressed at the meeting reiterated concerns over the impacts of hyperscale data centers, the use of BESS in conjunction with data centers, and proposed projects in areas outside of the unincorporated areas. When asked how data centers can potentially give back through community benefit agreements, some attendees highlighted subsidies for utilities, free health screenings, profit sharing to reduce property taxes, infrastructure improvements, solar panel subsidies, workforce training, and local hire requirements. However, the consensus from attendees was that the negative impacts of large scale data centers would outweigh any benefits.

To view the recordings, please visit: <https://planning.lacounty.gov/long-range-planning/data-centers/events>.

### Stakeholder Meetings

In addition to the community engagement meetings staff also met with several stakeholders to garner additional input. Stakeholders included subject matter experts, data center developers and operators, community residents, and representatives from local jurisdictions. A list of meetings and attendees is included as Attachment 2.

### Stakeholder Comments

Stakeholder comments received since the Board motion are included as Attachment 3. A list of references used to inform the report and/or that were shared by stakeholders is included as Attachment 4.

## **DIRECTIVE 3: COMMUNITY AND STAKEHOLDER FEEDBACK**

Recommendations received from community and stakeholder engagement are consistent with staff recommendations contained within each impact area detailed in Directive 1 above.

## **DIRECTIVE 4: RECOMMENDATIONS**

At a minimum, staff recommends the Board identify necessary funding and direct Regional Planning, in coordination with the Department of Public Health, Chief Sustainability Office, Fire Department, Internal Services Department and Public Works, to initiate a comprehensive amendment to Title 22 of the Zoning Code and prepare corresponding CEQA analysis that:

- a. Establishes clear definitions (using acreage, square footage and megawatts) for data centers and distinguishes hyperscale data centers from other types of smaller data processing centers, accessory data centers or sole-source data centers;
- b. Prohibits all hyperscale data centers (as defined by the ordinance) in all zones;
- c. Develops zoning regulations for all other smaller data processing centers, including identification of appropriate zones, accessory uses, uses subject to ministerial or discretionary permits, and objective design and development standards;
- d. Considers incentives, if applicable, and/or a mechanism for community benefits that include, but are not limited to: labor protections, including requirements for local hire, payment of prevailing wages, and a skilled and trained workforce; sustainable technologies and best practices as outlined in this report; and measures that go above and beyond minimum code requirements to address the harms and risks as outlined in this report.

Other recommendations included in this report that are outside the scope of Title 22 may also be considered by the Board through additional directives. For example, it is recommended that the Board direct Public Health, in coordination with Public Works and County Counsel, to report back with amendments to Title 12 – Environmental Protection related to noise ordinance changes as identified in this report.

## CONCLUSION

This report fulfills the Board's directives of April 14, 2026. For questions regarding this report, please contact Azar Kattan at [akattan@ph.lacounty.gov](mailto:akattan@ph.lacounty.gov) and Connie Chung at [cchung@planning.lacounty.gov](mailto:cchung@planning.lacounty.gov). Thank you.

AJB:CC:ia

### Attachments:

1. Data Center Legislation and Regulations in Other Jurisdictions
2. Stakeholder Engagement Summary
3. Stakeholder Comments
4. References

## **ATTACHMENT 1**

## Data Center Legislation and Regulations in Other Jurisdictions

### FEDERAL

#### **United States Congress - AI Data Center Moratorium Act ([S.B. 4214](#) and [H.R. 9442](#)) (2026)**

- A. Summary: A moratorium was introduced that would temporarily pause all construction of new data centers until Congress passes comprehensive legislation on artificial intelligence.
- B. Status: Introduced March 25, 2026 (Senate) and June 26, 2026 (House)

#### **United States Congress – [GRID ACT \(S.B. 3852\)](#) (2026)**

- A. Summary: Requires all data centers to provide own power or bring power from “captive source”, and not the electrical grid. Data center must request a “Zero Rate Effect Certificate” from the Secretary of Energy if they would like to supply power from the grid, which would require the Secretary to study impacts on the grid, rates, and costs of generation.
- B. Status: Introduced to committee 2/11/26

### ALABAMA

#### **[Regulatory Proceeding: Rate Revisions](#) (2025)**

- A. Summary: On January 7, 2025, the Alabama Public Service Commission modified the load for large load customers with a metered monthly demand over 500 kW (625 kVa) or greater. The revisions assist negotiations for terms, conditions, and arrangements for load supply over 30,000kVa of capacity, subject to Alabama PSC approval.
- B. Status: Final Order, Effective, 1/7/2025

### ARIZONA

#### **[Regulatory Proceeding: Rate Classifications](#) (2026)**

- A. Summary: Regulatory process to review the existing rate classifications and add transparent rates for data center customers. This also included solutions for behind and in front of meter solutions, user funded utility scale generation, and a review of utility mechanisms for data center customers.
- B. Status: Pending

#### CITIES AND COUNTIES

##### **Cities of Phoenix, Chandler, and Mesa – Zoning Ordinances**

- A. Summary: The cities of [Phoenix](#), [Chandler](#), and [Mesa](#) adopted ordinances to include definitions, design guidelines, and require discretionary special permits for data centers.

##### **City of Flagstaff - [Pending Zoning Ordinance](#) (2026)**

- A. Summary: The city planning department recommended an ordinance to require discretionary permits, but the planning commission at its meeting on April 3, 2026, voted to recommend a ban on data centers, and the city council at its May 5, 2026, meeting asked the planning department to further study the issue before considering a ban.

##### **County of Maricopa – [Zoning Ordinance](#)**

- A. Summary: included definitions and designated two special industrial zones to permit data centers by-right in a recent zoning code update.

## **ARKANSAS**

##### **[Regulatory Proceeding: Facilities Tariff](#) (2025)**

- A. Summary: Allows the Arkansas Electric Cooperative Corporation (AECC) to recover cost of transmission upgrades and extensions required for Power Intensive Users, exceeding 50 MW either as single user or aggregated load. This includes the opportunity to recover cost through monthly contribution in aid of construction (CIAC) payment. The CIAC payment needs to equal 1/60th of the required investment, minus any CIAC already paid. This allows the AECC to determine the required investment (depending on interconnection-study cost, transmission extensions, system upgrades, regional network improvements, growth potential, terrain, geography, rate conditions, and other considerations).
- B. Status: Final Order, effective date 8/26/2025

## **CALIFORNIA**

#### **Senate Bill 57: Ratepayer and Technological Innovation Protection Act (2025)**

- A. Summary: The Ratepayer and Technological Innovation Protection Act seeks to protect residential and small business ratepayers and prevent high energy cost resulting from AI data center energy use. This law authorizes the California Public Utilities Commission to do the following:
- Conduct a study to examine the impact data center and expanded grid demands will have on California ratepayers
  - Conduct a study on the extent load growth from data centers results in cost shifts to other ratepayers by 2027
  - Establish a special rate structure for data centers that protects residential ratepayers and small business and prevents cost shifts to those existing ratepayers and ensures electrical grid investments to serve data centers are fully recovered, as specified.
- B. Status: Passed, 10/11/2025

#### **Senate Bill 53: Transparency in Frontier Artificial Intelligence Act (2025)**

- A. Summary: The Transparency in Frontier Artificial Intelligence Act would require large model developers to be transparent about safety measures they put in place to prevent catastrophic events. The law would also create CalCompute, a public cloud infrastructure that expands access to AI resources for researchers, startups and public institutions. The law would do the following:
- Require a large frontier developer to write, implement, and clearly and conspicuously publish on its internet website a frontier AI framework that applies to the large frontier developer's frontier models and describes how the large frontier developer approaches, among other things, incorporating national standards, international standard, and industry-consensus best practices into its frontier AI framework.
  - Require the Office of Emergency Services to establish a mechanism to be used by a frontier developer or a member of the public to report, as prescribed, a critical safety incident.
  - Require the Office of Emergency Services to establish a mechanism to be used by a large frontier developer to confidentially submit summaries of any assessments of the potential for catastrophic risk resulting from internal use of its frontier models.
- B. Status: Passed, 09/29/2025

#### **Assembly Bill 93: Water Resources: Data Centers (2025)**

- A. Summary: This bill would require data centers to provide estimates of their expected water use when applying for a business license, and an annual water use report thereafter.
- B. Status: Vetoed by Governor Newsom

**Regulatory Proceeding, California Public Utilities Commission, Rulemaking No. 25-08-004: Rulemaking Distributed Energy (2026)**

- A. Summary: The rule is seeking large electricity users to reduce or shift usage during peak times, expand default time of use rates for commercial and industrial customers, and includes cost allocation (upgrade cost and loss of customers).
- B. Status: In process

**Senate Bill 886: California Technology Innovation and Ratepayer Protection Act (2026)**

- A. Summary: This bill would require the commission by or before July 1, 2027 to establish separate tariffs that addresses costs association with transmission, distribution, and generation services for data centers. Requires data centers to disclose other applications for other electrical jurisdictions for the same data center, and any other relevant applications. Require data centers to prefund a contract for new zero-carbon energy resources.
- B. Status: In progress

**CITIES AND COUNTIES**

**City of El Segundo – Project review (2026)**

- A. Summary: The city denied a proposed data center project that would've replaced a hotel due to strong public opposition and public comment during a city council meeting on July 9, 2026, and the developer responded by immediately withdrawing the project.
- B. Status: Project withdrawn. No ordinance.

**City of Los Angeles – City Council Motion (2026)**

- A. The Los Angeles City Council passed a motion at its February 24, 2026 meeting for a report back on ordinance amendments that include definitions and appropriate use classifications and zoning permissions for data centers, as well as identifying appropriate measures to regulate them.
- B. Status: Report pending, no deadline given in the motion.

**City of Monterey Park, California - Ordinance and Moratorium on Data Centers (2025-2026)**

- A. Summary: On March 4, 2026, the city enacted a 45-day moratorium on data centers, and held a special election on June 2, 2026 with a proposition to permanently ban data centers in the city, which was passed by 85 percent of the voters residing in the city, Banned data centers by Ordinance and Ballot Measure.
- B. Status: Passed as Measure NDC on June 2, 2026 which is a permanent ban unless overturned by a future public vote.

**City of Pittsburgh – [Settlement Agreement on a data center project](#)**

- A. Summary: As a result of a lawsuit settlement, the City of Pittsburgh requires environmental reviews be conducted for future phases of the project, a developer payment of \$750,000 into a fund aimed at climate resiliency projects to benefit disadvantaged communities in the city, a commitment to use 100% renewable energy for the data center, rooftop solar for data center buildings and parking spaces, recycled water for cooling purposes and outdoor landscaping, biological surveys and monitoring of wildlife in the area, and insulated walls and low-noise equipment to reduce excess sound. After the settlement, the city council considered the project at its [June 15, 2026, meeting](#), and many residents provided public comments opposing it.
- B. Status: Ordinance pending with city council.

**City of San Jose - [Zoning Ordinance](#)**

- A. Summary: The city currently has a definition for data centers and requires special use permits for large energy-use projects, including data centers, that use at least 20 megawatts of power in its zoning code. On June 10, 2026, the city's rules and open government committee directed the city manager to develop uniform standards and best practices for data centers.
- B. Status: Ordinance in effect, standards pending.

**City of Santa Clara - [Zoning Ordinance \(2025\)](#)**

- A. Summary: The city enacted specific requirements on new data centers that, in addition to requiring a conditional use permit in industrial zones, also requires them to be carbon neutral, which can be achieved through sourcing local renewable energy or by purchasing carbon offsets. The city also mandates data centers to use recycled water for cooling purposes or at least 'be prepared' to use a recycled water system once available to them and use structural noise reduction measures. Data centers must also comply with specific façade standards such as variations in height, materials, texture, and structure setbacks. The city has approved [58 data centers](#) within its city limits, but several that are fully built have not been able to operate due to capacity limits on the city's electric grid.
- B. Status: Ordinance in effect.

**County of San Diego – [Board report \(2026\)](#)**

- A. Summary: The county submitted a Board report on July 14, 2026 with their findings on data centers. In terms of recommendations for land use regulations for the County, they suggested to continue with the current practice of requiring a discretionary Major Use Permit under Major Impact Services and Utilities classification, which is currently allowed in most zones. They also suggested the Board consider an ordinance that would include

definitions and siting and development standards for data centers with a preference to limit to commercial and industrial zones away from sensitive uses, with other practices. The County estimated that it would cost \$500,000 in one-time funding to develop the ordinance with CEQA documentation over a two-year period.

B. Status: Report submitted, awaiting Board direction to county departments.

## COLORADO

### Senate Bill 26-189: Automated Decision-Making Technology (2026)

A. Summary: The Senate Bill includes the following:

- The rules no longer apply to “high-risk AI system” group, instead now only applies to systems that use personal data to influence life outcomes
- Fewer Audits- Removes the obligation of AI to perform risk management programs, impact assessments, and disclosure obligations to show not biased,
- Exemptions for Developers – includes exemptions for Developer and Developer definitions for Automated Decision-Making Technology (ADMT) for: research, internal purposes, designing, creating technology or changes from third party.
- Simpler Warnings- consumer notice requirements will be streamlined
- 60-day notice-and-cure period- If a company breaks rules, the Colorado Attorney General will give 60 days to make the correction before applying penalties.

B. Status: Effective 6/30/2026

### Senate Bill 26-102: Large-Load Data Centers (2026)

A. Summary: Requires data centers to limit electricity use to certain limits; generate or acquire electricity from renewable energy sources. Data centers must report annual electricity usage and water consumption to the Department of Public Health and Environment.

B. Status: Introduced.

## DELAWARE

### House Bill 233: Large Energy Use Facilities (2026)

- A. Summary: The Delaware Public Service Commission (DPSC) will review energy rates to avoid shifting the risk to residential and small business by ensuring equitable contributions for efficiency and reliability, meeting renewable energy targets, and reduction of greenhouse gases.
- B. Status: Pending

**Regulatory Proceeding, Delaware Public Service Commission Docket No. 25-0826: Large Load Tariff (2026)**

- A. Summary: The regulatory proceeding seeks to require a docket for large load customers (data centers, using monthly maximum demand of 25 MW or higher) to prevent shifting of cost to residential customers
- B. Status: Pending

**Senate Bill 205: Public Service Commission and Certifications to Operate (2026)**

- A. Summary: The Delaware Public Service Commission (PSC) will require a certificate of operation from business using 30 MW or greater, demonstrating operation experience and long term viability.
- B. Status: Pending, Out of Committee

**GEORGIA**

**House Bill 1291: Sales and Use Tax Exemptions (2022)**

- A. Summary: This legislation extended the sales-tax exemption for data-center equipment through 2033 and modified qualifying thresholds. Supporters contend the extension secures long-term investments from major operators such as AWS and Google; critics argue the state is prolonging subsidies without adequate oversight.
- B. Status: Active state incentive program under O.C.G.A. § 48-8-3(68.1).

**Department of Community Affairs Rulemaking: Data Center Rules (2025)**

- A. Summary: The Georgia Department of Community Affairs proposed statewide rules requiring new data-center developments to disclose water and energy consumption, aiming to standardize sustainability reporting and improve transparency for residents and local governments.
- B. Status: Public hearing held in September 2025; rulemaking is currently paused.

**CITIES AND COUNTIES**

Several cities and counties have adopted moratoria on new data center permits to allow time to develop new zoning rules that address concerns pertaining to electric grid and water impacts, community notification, and noise.

**City of Atlanta – Zoning Ordinance**

- A. Summary: the city adopted an ordinance to add a definition for data centers and to ban data centers in areas along its Beltline.
- B. Status: Ordinance in effect.

**County of Bartow – Data Center Ordinance (2025)**

- A. Summary: Bartow adopted a formal data-center ordinance establishing noise-control standards, required buffers, and guidelines for compatibility with surrounding land uses.
- B. Status: Ordinance in effect.

**County of Clayton – Moratorium (2025, 2026)**

- A. Summary: The county enacted a pause on new data-center applications due to concerns involving public health, safety, and infrastructure capacity on September 3, 2025, and just passed an extension on June 16, 2026 .
- B. Status: Moratorium extended through December 31, 2026.

**County of Columbia – Proposed Data Center Zoning District (2025)**

- A. Summary: Officials introduced a new “DC (Data Center)” zoning district to regulate siting and resource-intensive facilities. Public concerns focused on heavy water withdrawal (estimated near 7 million gallons per day), sewage production, and transparency from developers.
- B. Status: Proposal under review.

**County of Coweta – Moratorium on Data Centers (2025)**

- A. Summary: A 180-day moratorium was issued to allow review of zoning standards for large data-center proposals. Residents raised issues related to rural-character impacts, water and electric-grid strain, and insufficient community notice.
- B. Status: Moratorium extended; new regulations pending.

**County of DeKalb – Temporary Moratorium & Draft Ordinance (2025)**

- A. Summary: The county adopted a 100-day moratorium while drafting new zoning rules defining data-center categories and establishing buffer zones. Concerns included noise, lighting, stormwater runoff, and the load on nearby residential infrastructure.
- B. Status: Moratorium extended to September 2026; ordinance in development.

**County of Jones – Zoning Limits (2025)**

- A. Summary: The county approved zoning restrictions for data centers in September 2025, citing issues with water supply, land-use impacts, and infrastructure strain. The ordinance was later rescinded after officials determined that public-notice requirements had not been properly met.

B. Status: Ordinance rescinded and will be redrafted.

**County of Troup – 90-Day Moratorium (Sept 2025)**

- A. Summary: The county adopted a 90-day pause on new data-center applications due to concerns about extremely high megawatt loads, grid capacity limits, and implications for public health and safety.
- B. Status: Temporary moratorium active.

**County of Twiggs – Hyperscale Data Center Rezoning (2025)**

- A. Summary: Approved rezoning of approximately 300 acres for a hyperscale data-center project. Residents expressed concern about wildlife disruption, basin-level water draws, and exceptionally high electricity usage.
- B. Status: Approved.

**ILLINOIS**

**Senate Bill 2181: Data Center Energy and Water Reporting Act (2025-2026)**

- A. Summary: Legislation purpose is to prevent data centers from straining Illinois power grid. This would require annual report for energy and water consumption and a study on the impact of data centers on rate-paying customers.
- B. Status: Pending, re-referred to assignments

**CITY**

**City of Aurora - Ordinance: Data Center Regulations (2026)**

- A. Summary: After adopting a temporary moratorium, the city adopted a zoning ordinance that adds regulations on new data centers, this includes requiring companies to do studies on sound, energy, vibrations, noise, and water before development and city council approval. This includes noise levels to be brought down to 1,500 feet from homes.
- B. Status: Adopted, effective April 2026.

**INDIANA**

**House Bill 1007: Energy Generation Resources (2025)**

- A. Summary: Bill provides a short review period (90 and 150 days) for projects through two pathways. If no decision is made in the time frame the project is automatically approved.

- Petition through “extraordinary growth”
  - Approval of resources “Expedited Generation Resource Plan”
- B. Status: Effective 5/6/25

**Regulatory Proceeding- Indiana Utilities Regulatory Commission, Case No.46097: Industrial Power Tariff (2025)**

- A. Summary: Indiana Utilities Regulatory Commission (IURC) added terms to accommodate large load customers (70MW). This includes:
- Contract term that is not less than 12 years
  - Termination Fee
  - Ability to reduce contract capacity by 20% (if greater than 20% needs to be reviewed and approved by IURC)
  - A monthly billing demand of 80%
  - A minimum amount for collateral for customer
- B. Status: Final Order, 2/19/25

**IOWA**

**House Bill 2447: Water and Energy Use for Data Centers (2026) / House Bill 2690: Water and Energy Use for Data Centers (2026)**

- A. Summary: Water and energy use for data centers, including reporting and tariff requirements and effective date provisions. Requires reporting on water usage.
- B. Status: Renamed to HF 2690 – Amendments introduced, Died in Chamber

**COUNTY**

**County of Linn – Moratorium and Ordinance on New Data Centers (2026)**

- A. Summary: Moratorium was approved on July 1, 2026 for 18 months for new applications on Large Data Center Zoning District. A zoning ordinance was adopted by the city council on February 18, 2026, which includes:
- Establish development standards for both small-scale and large-scale data centers, which include building setbacks, noise limits, traffic and road impacts, emergency planning, and site plan review.
  - Additional requirements for large-scale data centers to include a water study to demonstrate if enough water is available, a water use agreement that includes tracking and reporting water use, and an economic development agreement that outlines community benefits and fund to support infrastructure, services, environmental protection, and workforce development.

- B. Status: Moratorium: Passed July 1, 2026 and effective until January 1, 2028. Ordinance: Adopted February 18, 2026.

## **KANSAS**

### **Kansas Corporate Commission Docket 25-EkME-315-TAR: Large Load Service Rate Plan and Associated Tariffs (2025)**

- A. Summary: Allows a tariff for large load customers (75MW or more). This includes:
- Contract term of 12 years
  - Payment of 80% of monthly load
  - Collateral of minimum 2 years of bills
  - Exit fee for early termination
  - Participation in renewable energy is optional and has extra cost
  - If there are upgrades for large loads the customer bears the cost
- B. Status: Effective

## **KENTUCKY**

### **House Bill 775: Fiscal Matters (2025)**

- A. Summary: Provides tax and sales exemptions for data center projects in Kentucky, based on population size of at least 50,000 (Louisville, Jefferson, Kentucky County) and exemptions may extend for up to 50 years, if have a capital investment of at least \$450 million. This bill lowers the requirements around revenues needing to exceed expenditures in the year.
- B. Status: Passed, March 2025

### **Regulatory Proceeding – Kentucky Public Service Commission, Case No. 2025-00140: Tariff for Data Center Power (2025)**

- A. Summary: This tariff creates guidelines for commercial relationships, service terms, assures risk is identified, supply procedures. However, concerns over renewable sourcing, cost allocation, long term policy and financial impacts.
- B. Status: Final Order

**Regulatory Proceeding – Kentucky Public Service Commission, Case No. 2025-00113, 2025-00114: Electric Rates (2025)**

- A. Summary: A rate treatment for “extremely high road” (100MVA+) and 85% load factor. This would also require collateral and minimum contracts.
- B. Status: Pending

**Regulatory Proceeding – Kentucky Public Service Commission Case 2025-00045 (Louisville Gas and Electric and Kentucky Utilities Proposal) (2025)**

- A. Summary: This would allow the construction of natural gas plants (645 MW) and battery storage system (400 MW) to meet the large data center demand. Concerns over materialized demand.
- B. Status: Final Order

**Regulatory Proceeding – Kentucky Public Service Commission Case 2024-00305: Industrial General Service Tariff Amendment (2024)**

- A. Summary: Regulatory proceeding creates terms and conditions for large load customers to protect customers from high cost due to large load customers. Defined as:
  - New Large customers (150MW) or more
  - Existing Customer Adding 150 MW or more
- B. Status: Final Order

**LOUISIANA**

**Regulatory Proceeding- Louisiana Public Service Commission, Docket No. U-37425: Entergy Louisiana Approval (2024)**

- A. Summary: A settlement that exempts Entergy Louisiana, LLC “Entergy” from the market-based order and allows procurement of up to 1,5000 MW of solar and/or hybrid resources. This settlement protects customers, as data center will be required to pay for transmission additions.
- B. Status: Final Order

**MAINE**

**Governor Executive Order (2026)**

- A. Summary: State legislation to enact a moratorium on data centers was vetoed by the governor, because it would not have provided an exemption for one data center currently permitted and under development in the state. However, an executive order was enacted to establish a council to examine and plan for the potential impacts of large-scale data centers.

**SP 402: Use of Electricity by Data Centers (2025)**

- A. Summary: This bill sets a 25% total annual electricity limit that power companies can supply to data centers. Energy companies will be required to report to the Public Utilities Commission on which data centers they are serving and how much power the companies are using on a quarterly basis
- B. Status: Effective

**MARYLAND**

**Senate Bill 474 (2026)**

- A. Summary: The Senate Bill will remove regulatory barriers to data centers using generators during power outages.
- B. Status: Referred to committee

**Senate Bill 0937 (2026)**

- A. Summary: The Maryland Public Service Commission will be required to set regulations for large load customers, set deadlines, notice requirements, collateral guidelines, load study timelines, and fee payment process. By September 1, 2026 utilities will be required to protect residential customers, set rate schedules, prevent cost subsidization of non-large load customers.
- B. Status: Approved by Governor, Effective 10/1/2026

**Senate Bill 116: Data Center Impact Analysis and Report (2025)**

- A. Summary: Requires a comprehensive environmental, energy, and economic impact analysis of data center development. The issues that will be included in the report include: energy demand, grid impacts, greenhouse-gas alignment, water use, revenue, job impacts, and economic/fiscal effects. A finalized report is due September 1, 2026.
- B. Status: Approved

**MICHIGAN**

**House Bill 4668: Requirements and Safety Standards for Artificial Intelligence Models (2025)**

- A. Summary: addresses safety measures which would require AI developers in Michigan to conduct regular risk assessments and third-party audits, as well as implement and publicly disclose safety protocols.
- B. Status: Referred to the House Committee on Regulatory Reform.

**House Bill 4906: Sales Tax Exemptions (2024)**

- A. Summary: Michigan passed landmark legislation ([Public Acts 181 and 207 of 2024](#)) offering data centers sales and use tax exemptions worth millions. In exchange, the law explicitly prohibits data centers from receiving rates that causes residential customers to subsidize infrastructure and costs required to service the facility. Data centers will be responsible for paying the costs accrued by their facility.
- B. Status: Passed

**Senate Bill 1018: Moratorium on Certain New Data Centers (2026)**

- A. Summary: Senate bill places a pause on data centers to gather information on rate hikes, environmental harms and other consequences. Creates a temporary pause on data center projects to implement a moratorium.
- B. Status: Introduced, 6/4/2026

**Senate Bill 1019: Zoning Enabling Act (2026)**

- A. Summary: Creates a temporary pause on data center projects to implement a moratorium.
- B. Status: Introduced, 6/4/2026

**Senate Bill 1020: Moratorium on Approvals by the Michigan Public Service Commission of New Enterprise Data Centers (2026)**

- A. Summary: Senate bill to regulate utilities and other services. This includes prohibition of rate increases, qualifications for residential energy conservation programs, utilization of resource recovery facilities; prescribe remedies and penalties. Creates a temporary pause on data center projects to implement a moratorium.
- B. Status: Introduced, 6/4/2026

**Senate Bill 761: Water Supply, Conservation; Limits on Water Withdrawals (2025)**

- A. Summary: Amends Natural Resources and Environmental Protection Act to limit daily water usage.
- B. Status: Referred to Committee on Energy and Environment

**Senate Bill 762: Energy and Water Usage Report Requirements for Data Centers (2025)**

- A. Summary: Require centralized reporting for energy and water usage for data centers
- B. Status: Referred to Committee on Energy and Environment

**Senate Bill 763: Water Supply, Conservation; Limits on Water Withdrawals (2025)**

- A. Summary: Amends Natural Resources and Environmental Protection Act to limit daily water usage.
- B. Status: Referred to Committee on Energy and Environment

**Michigan Public Service Commission Case No. U-21859 (2025)**

- A. Summary: The Michigan Public Service Commission approved the Large General Service Primary Demand Rate for new data centers (100MW). The requirements include project proposal fee, minimum 15-year contract, minimum billing demand, exit fee, strategies to increase or reduce capacity.
- B. Status: Final Order, Effective 11/06/2025

**Regulatory Proceeding – Michigan Public Service Commission Case No. U-21990 (2025)**

- A. Summary: A request from DTE electric Company for expedited contract with Oracle Corporations (data center of 1.4 GW). Contract includes: increased minimum billing demand, termination payments, credit card and collateral requirements, fixed cost, surcharges, renewable energy, fuel and purchase power, and energy storage development.
- B. Status: Pending

**CITY**

**Howell Township: Moratorium (2026)**

- A. Summary: A moratorium for data center proposals. In May, officials voted to extend for 6 months (November 2026) to allow time to draft local ordinance for data centers. Community members are concerned about:
  - o Regulations for water, power usage, noise, application requirements
  - o Reviewing local ordinance
  - o Concerns for land use (using rural farmland instead of industrial land), environmental impacts, public health, safety, ground water, transparency
- B. Status: Extended, May 2026

**MINNESOTA**

**House File 16: Data Center Regulatory Bill (2025)**

- A. Summary: The bill regulates large data centers (100MG or more), creates permitting, a “qualified category”, evaluation of water provisions, clean energy tariff, annual fee structure, extends sale tax exemption to 35 years, and wage standards for construction workers.
- B. Status: Effective

**Regulatory Proceeding – [Minnesota Public Utilities Commission Docket Nos. PT-7151; CN-24-435](#)**

- A. Summary: Petition by Amazon Data Services regarding emergency backup generators; Minnesota Public Utilities did not provide exemption for emergency back-up generators.
- B. Status: Final Order

**MISSOURI**

CITY

**City of St Louis - [Executive Order Data Centers](#) (2025)**

- A. Summary: executive order to guide the thoughtful development of data centers by creating a framework for integrating them into city zoning and water codes.
  - Framework development: City departments have five months to develop this framework, which will require more information from developers as part of the permitting process.
  - Current process: The existing conditional use permit process will remain in place while the new framework is being developed
  - Community involvement: The new process will involve public hearings to address questions about a data center's energy and water use, its effect on nearby properties, and its size and scope.
  - Goals: The ultimate goals are to regulate the new industry thoughtfully, protect citizens, and keep energy costs lower.
- B. Status: Issued September 2025

**NEW JERSEY**

**[Senate Bill 4143 and Assembly Bill 5564: Energy Efficiency and Renewable Energy](#) (2024)**

- A. Summary: Requires AI data centers and cryptocurrency mining facilities to only use renewable energy or newly built nuclear power. The facilities would be required to have energy plans (efficiency, cooling optimization, water use, and heat reuse)

B. Status: Pending

**Assembly Bill 2774: Nondisclosure Agreements and Data Center Development (2026)**

- A. Summary: Prohibits agreement intended to conceal certain information concerning development of data center
- B. Status: Introduced, Referred to Science, Innovation, and Technology Committee

**NEW YORK**

**Executive Order (2026)**

- A. Summary: On July 9, 2026, the governor signed an executive order imposing a statewide moratorium on environmental and discretionary permits for hyperscale data centers for a year. The moratorium will allow the state to develop a statewide regulatory framework, including creating a requirement for data center projects to pay into or provide their own energy supply, and develop guidelines for local jurisdictions in the state to negotiate community benefits, which may include local infrastructure improvements, child care investments, direct financial support, prevailing wage standards and local hiring, apprenticeships and workforce development agreements with data center developers. The state is also looking into requiring data centers to contribute to the funding of electric infrastructure and clean energy.
- B. Status: The order is in effect until July 9, 2027.

**Senate Bill S8540A: Accountability of Costs for Data Centers Act (2025)**

- A. Summary: Requires each electric corporation and municipality to establish an independent classification of service for large energy use facilities
- B. Status: In Senate Committee: Energy and Telecommunications Committee

**Senate Bill S8546: Grid Modernization Surcharge (2025)**

- A. Summary: Requires public service commission establish a grid modernization surcharge imposed on utilities for the energy use of data centers and high-intensity data centers.
- B. Status: In Energy and Telecommunications Committee

**OHIO**

**Public Utilities Commission – Data Center Tariff and Rate Structure (Landmark Case) (2025)**

- A. Summary: In a settlement agreement with American Electric Power, the Public Utilities Commission of Ohio approved a plan to protect against data centers that may contract for increased electricity capacity and then skip town.
- Data centers will need to pay penalties if they say they are going to build a project and then fail to live up to commitments
  - Requires data centers to provide proof they are financially viable and able to meet requirements
  - Creates structured tariffs for new large-scale data centers, requiring them to pay for up to 85% of their projected energy use each month—even if they use less—to cover the cost of infrastructure.
  - Creates a sliding scale that allows small and mid-sized data centers more flexibility
  - Requires data centers to pay an exit fee if their project is canceled or unable to meet the obligations outlined in the electric service agreement contract
- B. Status: Passed July 2025

**House Bill 706: Impose Minimum Requirements on Data Center Customers (2026)**

- A. Summary: Data centers require to adhere to certain requirements, such as contract terms and payments; utility companies have the option to not provide electrical service if fail to meet requirements. Require data center customers to provide financial assurance prior to construction of data center.
- B. Status: In House Committee

**OREGON**

**House Bill 3546 - Power Act (2025)**

- A. Summary: Requires specific rate for “large energy use facilities (high end users)”, to cover their own cost instead of shifting it to consumers. Large energy use facility – defined as consumes 20 megawatts or more for electricity and engaged in data processing or data center service.
- B. Status: Effective immediate due emergency clause, August 2025

**House Bill 3179 – Fairness and Affordability in Residential Energy Act (FAIR Energy Act) (2025)**

- A. Summary: Focuses on residential consumers, by creating limits to how and how often utilities can raise rates. This includes:
- No increases during winter (November 1 to March 1);
  - No rate increases more than once every 18 months until January 2, 2027, and

- Requires summary of charges in bills, including when there are rate hikes, and what they are being charged for, with easy-to-understand visuals.
- B. Status: Effective immediate due emergency clause, August 2025

**House Bill 3792 - Consumer Protection for Utility Ratepayers. (2025)**

- A. Summary: Provides funding for low-income households to pay for energy bills, this increases energy assistance program to \$40 million, per household cap raises \$500 to \$1,000.
- B. Status: Passed, August 2025

**Senate Bill 688: Performance-based regulation of electric utilities (2025)**

- A. Summary: A framework for investor-owned electric utilities, this bill either rewards or penalizes companies on how well they perform. To ensure utility companies are proactive in mitigation strategies during wildfires, heatwaves, and extreme weather.
- B. Status: Passed, August 2025

**PENNSYLVANIA**

**Senate Bill 1359 - Protecting Pennsylvania Communities: Statewide Moratorium on Data Center Development (2026)**

- A. Summary: Moratorium for three years for new data centers
- B. Status: Referred to local government.

**House Bill 2533 - Empowering Municipalities to Place a Moratorium on Data Center Development (2026)**

- A. Summary: The bill provides local governments with the ability to temporarily pause new data centers
- B. Status: Referred to local government.

**House Bill 1834 – Data Center Act (2025-2026)**

- A. Summary: The bill package calls for regulation of commercial data centers by the state's Public Utility Commission (PUC), Department of Human Services and the Pennsylvania Energy Department Authority.
  - Requires PUC to pass temporary regulations addressing minimum contract terms and fees for data center developments, including annual fees to fund a new Low-Income Home Energy Assistance Program (LIHEAP) Enhancement Fund.
  - Outlines clean firm energy requirements, disclosure requirements, backup generation standards, and more.

B. Status: Crossed over 3/24/26

#### **Senate Bill 991 - Data Center Siting and Permitting Act (2025)**

- A. Summary: Establishes a streamlined permitting process for data centers in Pennsylvania with the Department of Environmental Protection (DEP). The bill would do the following:
- Require DEP to select at least 15 preapproved sites suitable for data center construction, with at least five being decommissioned (or soon to be decommissioned) power generation facilities.
  - Creates an accelerated two-phase permitting process, which sets application fees and outlines key processes, including preliminary permitting work shared if the applicant proposed data center is located at a preapproved site.
- B. Status: introduced Sept. 2025, referred to committee.

#### **House Bill 1924 - Load Forecast Accountability Act (2025)**

- A. Summary: This bill would strengthen consumer protection and transparency by giving the Public Utility Commission (PUC) clear authority over utility load forecasting. It empowers the PUC to
- (1) review and validate forecasts submitted to PJM Interconnection L.L.C. regional transmission organization (PJM),
  - (2) coordinate with PJM and state regulators to prevent duplicative counting of projects and contracts, and
  - (3) access all necessary materials, including confidential agreements between interconnecting customers and utilities.
- B. Status: Laid on table.

#### **House Bill 2151: Community Standards for Data Center Developments (2025-2026)**

- A. Summary: Statewide standards for data center zoning ordinances, including provisions for sound barriers, set back distances, building design standards, equipment modifications, and other measures. Designed to protect health and well-being of residents living near data centers.
- B. Status: Referred to Senate committee.

#### **House Bill 2246: Water usage reporting requirements for data centers (2025-2026)**

- A. Summary: Requires State water plan and outlines key water usage reporting guidelines by data centers including notification and reporting of water usage and water withdrawals.
- B. Status: Referred to Senate committee, 5/1/2026

#### **House Bill 2539: Incentivizing Energy Efficiency for Data Centers (2025-2026)**

- A. Summary: Requires data centers to meet high efficiency standards, and requires data centers seeking sales tax exemptions to obtain recognized energy efficiency certifications, such as LEED, Energy Star, etc.
- B. Status: Referred to House committee, 05/27/2026

**House Bill 210: Data Centers Accountability and Transparency (2025-2026)**

- A. Summary: Require data center developers and end users to disclose the nature of their operations and report energy and water usage to the Department of Conservation and Natural Resources.
- B. Status: Referred to Senate committee, 4/23/2026

**House Bill 2535: Data Center Emergency Preparedness (2025-2026)**

- A. Summary: Emergency preparedness from potential overheating or electrical failures of data centers, including fires.
- B. Status: Recommitted to House Rules committee, 6/30/2026

**House Bill 2061: Data Centers and Prevailing Wages (2025-2026)**

- A. Summary: Require data center developers to pay prevailing wage on all construction projects to remain eligible for state sales tax exemption. Designed to protect local workers and promote fair wages.
- B. Status: Referred to House committee, 12/3/2025

**Senate Bill 1114: Pennsylvania Ratepayer Protection Act (2025-2026)**

- A. Modeled off Oregon's POWER Act (HB 3546), legislation will create a high-load customer class that will apply to new or expanding data centers with peak demand of 20 megawatts or more. It will also mandate Cost – Responsibility contracts for all data center facilities. The bill also empowers the Public Utility Commission to set cost-allocation rules and monitor compliance.
- B. Status: Referred to Senate committee, 12/15/2026

**Senate Bill 1297: Tax Incentive for Green Data Centers (2025-2026)**

- A. Summary: Amend existing tax exemption for data centers to require them purchase 100% of energy from Tier 1 alternative energy sources and have investments in energy efficiency by 2030 to qualify for exemption.
- B. Status: Referred to Senate committee, 4/23/2026

**SOUTH CAROLINA**

#### **House Bill 5526: Data Center Prohibition (2026)**

- A. Summary: Data centers are prohibited until the Legislature adopts a “comprehensive oversight” framework.
- B. Status: Introduced, 4/16/2026

#### **Senate Bill 0867: Data Center Development (2026)**

- A. Summary: This bill would establish the Data Center Development Office in the Department of Environmental service to provide oversight, establish an advisory committee, assist in operation efficiency, water efficiency, annual report, adequacy assessments, environmental impact assessments, buffer requirements. This also include rate agreements for utilities, cost allocation. Additionally, this would require data centers to implement measures to reduce noise, vibration, and light impacts. Regulations, enforcement, and penalties will be enforced by the Department of Environmental Services with a focus on technical assistance and guidance to support transition.
- B. Status: Introduced, 5/6/2026

#### **Senate Bill 724: Data centers: reporting water usage (2026)**

- A. Summary: Amend SC Code of Laws to require commercial data centers to annually report water usage. Only required of data centers that consume 3,000,000 gallons of water/month.
- B. Status: Introduced/Referred to Committee on Judiciary

### **TEXAS**

Texas is second only after Virginia for having the largest market share of data centers. At the state level, House Bill 2559 restricts indefinite moratoria on certain land uses, and the Death Star Law of 2023 prohibits local regulations from being more restrictive or that contradict state regulations, which effectively restricts local authority. The Governor recently indicated the state’s intent to eliminate state use tax exemptions and require data centers to pay for their own energy infrastructure in order to protect state residents from increased electricity rates.

#### **CITIES AND COUNTIES**

##### **City of Austin – Ordinance and Resolution (2026)**

- A. Summary: The city has a zoning ordinance that allows data centers with additional requirements, such as a water conservation plan, which applies to all industrial water consumers that use at least 85 million gallons of water a year. The data centers would need to be connected to reclaimed water systems, use their own closed-loop systems for cooling, disclose efforts to reduce water consumption, and produce annual reports that detail monthly water usage. On May 13, 2026, the City Council adopted a resolution with recommendations from the city

technology commission to establish sustainable development measures and cap tax incentives with phaseout, and to require data centers to disclose water usages, use offsets for renewable energy, use local hire and training partnerships, implement community impact mitigation measures, and post decommission bonds, among other things.

**City of Kerrville - [Ordinance](#) (2026)**

- A. Summary: The City of Kerrville adopted stringent zoning regulations such as adding definitions, restricting zoning to specific land use categories such as heavy industrial zones only, requiring water capacity approvals, and disclosures of cooling systems and water usage amounts. The city determined that stringent zoning regulations would be more effective than bans that are less likely to run afoul of the state's restrictions on local authority. A few other small cities in the state chose to offer tax savings to data centers in exchange for adherence to strict development standards.
- B. Status: Adopted May 26, 2026.

**City of San Marcos – [Ban](#) (2026)**

- A. Summary: The city was the first city in the state to adopt a ban on data centers on June 16, 2026.
- B. Status: Ban in effect

**City of Taylor – [Ordinance](#)**

- A. Summary: The City of Taylor is developing new zoning rules to regulate data centers.
- B. Status: Ordinance in development.

**County of Hays – [Resolution \(non-binding\)](#) (2026)**

- A. Summary: Hays County considered a moratorium but passed a non-binding resolution to pause approvals of data centers.

**County of Hill – [Moratorium Proposal Rescinded](#) (2026)**

- A. Summary: The county rescinded a moratorium on data centers after a lawsuit was filed by a data center developer.

**UTAH**

**[House Bill 76 - Data Center Water Transparency Amendments](#) (2026)**

- A. Summary: Enacts a new code requiring reporting of water usage by large data centers (75 acre feet/year or more). Large data centers are required to report during the following: prior to construction on expected water consumption rates and how to treat discharges, etc. and after operation begins on reduction strategies on water consumption, efforts to protect environment and public from polluted water, etc.
- B. Status: Passed.

#### COUNTY

##### **County of Grand – Commission Report (2026)**

- A. Summary: The County planning staff prepared and submitted a report to the Planning Commission on its findings of data centers, including environmental impacts and best practices to regulate data centers.
- B. Status: Report submitted on May 26, 2026

### **VIRGINIA**

##### **House Bill 1515: Temporary Moratorium (2026)**

- A. Summary: Prohibits new data centers until July 2028 or until interconnection requests are completed.
- B. Status: Introduced.

##### **House Bill 153: Data Centers; Site Assessment, Sound Profile, High Energy Use Facility (2026)**

- A. Summary: *Note: This is the same as Senate Bill 94 (passed- 4/2026).* Requires new high energy use facilities to perform and submit a site assessment for sound on residential units and schools located within 500 feet. This also requires assessments on water (ground and surface water resources), agricultural resources, parks, registered historic sites, and forestland on the higher energy use facility site or immediate continuous land.
- B. Status: Passed.

##### **House Bill 503: Electric Utilities, Cost Recovery Related to Serving Data Center Customers (2026)**

- A. Summary: Prohibits the recovery of costs incurred by an electric utility that are related to data center customers and would not have been incurred without data center customer demands
- B. Status: Continued to 2027

##### **House Bill 507: Data centers; permit requirements, emission limits for certain engine-generator sets (2026)**

- A. Summary: Prohibits air permit issues for data center on or after July 1, 2026, unless emission limit for each engine-generator is equal to, or less than emissions by a Tier 4 equivalent engine-generator. Amended Code of Virginia to define data center, Tier 4 equivalent and other terms.

- B. Status: Passed, Signed by Governor

#### **House Bill 166: Noise Ordinances, Removes Exemption for Industrial Property. (2026)**

- A. Summary: Removes exemption for noise generated with business being performed on industrial property from being subject to civil penalties for violations of local noise ordinances. Amend Code of Virginia to remove exemption and update language.
- B. Status: Continued to 2027.

#### **House Bill 496: Data from Water Users: Water Use Consumption etc. (2026)**

- A. Summary: Requires water user to register water withdrawal and use date to the State Water Control Board. Include data centers with an air permit issued by Department of Environmental Quality.
- B. Status: Delayed to 1/1/2027

### **COUNTIES**

#### **County of Fairfax – Ordinance (2026)**

- A. Summary: Ordinance includes restrictive development and performance standards, including screening, sound barriers, size thresholds and buffers, and a requirement that an application for a data center include a noise study and compliance with the county noise ordinance. A special exception would be required to exceed maximum size threshold or to reduce buffer distances. Buffers include buildings to be at least 200 feet from a residential use, and outdoor power equipment to be at least 300 feet from a residential use, and at least one mile from a major transit stop.
- B. Additional information <https://online.encodeplus.com/regs/fairfaxcounty-va/doc-viewer.aspx?secid=2854#secid-2854>
- C. Status: Adopted May 5, 2026

#### **County of Henrico – Special Tax Ordinance and Comprehensive Plan Amendment (2025)**

Henrico County adopted a special tax ordinances by imposing taxes of 550% on all data center equipment. The County also adopted a Data Center Guidelines Comprehensive Plan amendment in June 2025.

#### **County of Loudoun – Ordinance (2025)**

- A. Summary: Loudoun County adopted an ordinance in 2025 that requires discretionary permits for all data centers, as part of phase 1. Phase 2 on policy guidelines use-specific development standards is currently underway. The county reported that it, along with Prince William County, saw [increased tax revenues and education spending](#) after approving data centers, which in turn eased reliance on revenues from residential real estate taxes.
- B. Status: Phase 1 (permits and location) adopted 2025, Phase 2 (guidelines and standards) in development.

**County of Prince William – Zone Overlay District Ordinance (2021)**

- A. Summary: Prince William County adopted an overlay zone with development and performance standards specifically for data centers.
- B. Status: Ordinance in effect since May 2021.

**County of York – Ordinance (2025)**

- A. Summary: Future applications to establish data centers must include:
  - 1. Letters from electric and water companies stating if they can handle the needs of the facility when running at full capacity
  - 2. An initial sound study evaluating existing ambient noise prior to project development and modelling predicted noise generation after completion (includes measurements taken overnight)
  - 3. Specific limits on noise levels, requirements for sound barriers, limits on times and duration for testing generators
  - 4. Connection to a public water system; use of wells as a water supply is prohibited.
  - 5. Minimum set back and buffers from other properties
  - 6. Architectural standards: maximum building height, material standards, visual screening for trash, signage, utility
- B. Status: Adopted June 2025, and updated April 2026

**VERMONT**

**Senate Bill 205: Temporary Moratorium (2026)**

- A. Summary: A temporary moratorium on data centers until 2030, this also includes a report on construction and operation of data centers, and impact study.
- B. Status: Referred to Finance committee

**WASHINGTON**

**Executive Order 25-05: Data Center Workgroup (2025)**

- A. Summary: The executive order creates a work group from the Washington State Department of Revenue to evaluate the impacts of data centers on economy, job market, economic, tax, energy, and environment. Findings and recommendations due December 1, 2025.
- B. Status: Effective

## **ATTACHMENT 2**

## **Stakeholder Engagement Summary**

### **SUBJECT MATTER EXPERTS:**

- USC Annenberg Center – 5/8/26, 5/22/26
- Harvard Law School – 5/11/26
- ICF International – 5/11/26
- Better World Group – 5/19/26
- Southern California Edison – 5/21/26
- California Public Utility Commission – 5/22/26
- SidePorch Consulting – 7/1/26
- LA Waterkeeper – 7/1/26, 7/24/26
- LA Business Council – 7/7/26
- Data Centers Coalition – 7/8/26
- Metropolitan Water District – 7/9/26
- Lowercarbon – 7/30/26

### **UNINCORPORATED COMMUNITY REPRESENTATIVES:**

- Andrew Chen, Karina Cao, Edson Chao – 6/24/26
- Rowland Heights Coordinating Council Board Members– 8/4/26

### **LABOR:**

- IBEW/SMART Local 105/Western States Council of Sheet Metal Workers – 7/14/26, 7/29/26

### **LOCAL JURISDICTIONS:**

- County of San Diego – 6/15/26
- City of Vernon – 7/20/26, 7/22/26
- City of Los Angeles – 7/29/26
- City of Industry – 8/3/26

### **DATA CENTER OPERATORS/DEVELOPERS:**

- Digital Realty – 6/30/26, 7/16/26 (tour of 2260 E. El Segundo Blvd, El Segundo, CA)
- CoreSite – 7/7/26
- Prime Data Centers – 7/14/26
- Vortx – 7/21/26

## ATTACHMENT 3

## DATA CENTER MOTION LIST OF STAKEHOLDER COMMENTS

1. Olga Murga, 6/14/26
2. DLTCS, 6/18/26
3. Sandra Lee, 6/18/26, 7/13/26
4. Susan Boulanger, 6/19/26
5. Charles Zukoski, USC, 6/19/26
6. Andrew Chen, 6/22/26, 7/14/26
7. Teri Malkin, 6/25/26
8. Evan Drucker, CoreSite, 7/8/26
9. Tim Victor, Vortx, 7/13/26, 7/29/26
10. Nathan Chen, 7/14/26
11. Erika Medina, 7/14/26
12. Tiffany Loi, 7/14/26
13. Carlos Navarette, 7/14/26
14. Kai Umeda, 7/14/26
15. Yolanda Diaz, 7/15/26
16. Maria Lin, 7/15/26
17. Aurora Mireles, 7/15/26
18. Madeline Ocampo, 7/15/26
19. Caleb Swyers, 7/15/26
20. Emma Yee, 7/15/26
21. Elizabeth Gonzales-Benedict, 7/16/26
22. M, 7/16/26
23. Wing Cheung, 7/16/26
24. Khara Boender, Data Center Coalition, 7/17/26
25. Chao-Ying Wang and Dennis Fox, 7/20/26
26. SMART Local 105, 7/20/26, 7/30/26
27. Patricia Quilizapa, 7/22/26
28. Peggy Chan, 7/23/26
29. LA Waterkeepers, 7/23/26
30. Ariana Barcenas Kanemoto, 7/24/26
31. Emily Barry, Climate Justice DSA-LA, 7/31/26
32. Rowland Heights Community Coordinating Council, 8/4/26
33. IBEW-NECA, 8/5/26
34. NEMI, 8/6/2026

**From:** [Olga Murga](#)  
**To:** [EDL-DRP BU-D Advance Planning Public Contact Email](#)  
**Subject:** Additional Data Center Comments  
**Date:** Sunday, June 14, 2026 5:09:14 PM

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**CAUTION: External Email. Proceed Responsibly.**

Other states that allowed data centers are now trying to regulate the growth due to environmental impacts. L A County needs to be get ahead of the game to avoid this. The County needs to propose and approve regulations to limit data centers due to all the environmental impacts that the data centers create. Below are just two examples.

Birmingham, Alabama - regulates data center growth. Communities are pushing back against the massive water and energy demands of the AI data centers. Birmingham leaders approved new regulations to limit environmental impacts, while the Nashville Zoo fights a nearby facility to protect endangered species. Also, Charlotte officials weighed a development moratorium as experts warn that global AI water consumption could soar by 2030.

Texas - Governor Abbott is directing Texas utility regulators to ensure data centers cover their own electrical infrastructure costs. The move aims to prevent shifting financial burdens onto residents and small businesses. Also, Abbott proposed ending sales tax exemptions and requiring data centers to report water and power usage during the upcoming legislative session.  
Thank you!

**From:** [DLTCS DLTCS](#)  
**To:** [EDL-DRP BU-D Advance Planning Public Contact Email](#)  
**Subject:** NO DATA CENTERS IN SGV  
**Date:** Thursday, June 18, 2026 1:14:18 PM

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**CAUTION: External Email. Proceed Responsibly.**

**NO DATA CENTERS IN SGV! If you dare to build, build it next to YOUR HOUSE!**

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**NO DATA CENTERS IN SGV! If you dare to build, build it next to YOUR HOUSE!**

**From:** [Sandra Lee](#)  
**To:** [EDL-DRP BU-D Advance Planning Public Contact Email](#)  
**Subject:** Data Center Webinars  
**Date:** Thursday, June 18, 2026 10:57:33 AM

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**CAUTION: External Email. Proceed Responsibly.**

Hello,

Thank you for hosting the series of webinars informing us on data centers and gathering feedback.

I'm writing to suggest that you offer some in person sessions at community centers to accommodate the elderly and non native speakers. I know there are translation options on the webinar but apparently they weren't working optimally and non native speakers are more reluctant to attend events where a flood of technical information will be transmitted in English.

We know many elderly who were interested in attending but could not figure out how to join the webinar and the polling was an added layer of complexity especially if they had joined using their phone.

As you know, data centers are being proposed in communities where many non-native speakers reside, so I think offering these sessions tailored to these communities would be an essential component of an inclusive and effective community outreach strategy.

Sincerely,  
Sandy

**From:** Sandra Lee  
**To:** ED, DRP BU-D Advance Planning Public Contact Email; DRP Info  
**Subject:** Community Feedback on Data Centers  
**Date:** Wednesday, July 15, 2026 9:58:35 PM

**CAUTION: External Email. Proceed Responsibly.**

Hello,

Thank you again for hosting the 3 information sessions on data centers. Like many other residents, I have been getting more and more educated on the data center industry over the recent months and weeks. I wanted to share my thoughts and concerns with you.

Why are we rushing to accommodate an industry that poses so many environmental and health risks while providing so little transparency and accountability? The proliferation of data centers and AI is not inevitable – we have the power to shape our own future.

I understand the Governor and local governments don't want to miss out on tax revenues, but the entire industry is based on a false profit. If AI brings so much prosperity and progress, why then are there so many clear losers left in its wake? Why must those who live in proximity to a data center experience direct loss? In this great AI vision for the State, shouldn't there only be winners? Either there is no true net profit generated by this industry to at least make everyone whole or the corporations and investors are taking the gains while the residents are stuck with the losses. Either scenario is not something we should champion or allow.

Taking a larger step back to view the industry reveals even more stunning losses. Across the nation, people are roundly rejecting and fighting data centers. Americans are experiencing what it's like to live in a region dotted with data centers. In Henrico County, where there are 37 data centers, educators were told to conserve electricity because electricity rates had increased by 25%. On the East Coast, data centers were recently told to use their back up diesel generators during the heat-wave to avoid regional black outs. In Cheyenne, Wisconsin, Meta's AI Data Center was found to have discharged bacteria-contaminated water into the water used for irrigation of crops. Recently, Amazon paid a \$20.5 million settlement in response to claims that it had contaminated the groundwater in Oregon. Clearly, this industry is in sore need of regulation and oversight.

There are countless accounts of residents experiencing noise, light, air, and water pollution as a result of living near a data center. Town halls across America are standing room only because residents are infuriated. Although, we have seen some residents win their battles and vanquish data center developers, a great many towns are losing their battles because their city councils do not heed the cries of their residents or in some cases, the developers are bullying city councils, threatening them with lawsuits. Is this the American way?

Does it not make sense to place a moratorium on data centers in our jurisdiction? We are living in the wild, wild west with zero regulations on this fast-moving and fast-evolving industry, and no there is not even a whiff of centralized planning or transparency to determine if we even have the infrastructure and water to be able to healthily sustain both humans and data centers. Each municipality is making their own rules in a vacuum. Meanwhile, California is fighting with 6 other states over their allocation of water from the Colorado river, which is in crisis due to record low snow packs. What are we doing?

This industry needs to be reined in. Until we have a state-wide policy framework that satisfactorily addresses all these things Americans are concerned about, I believe there should be a moratorium on data centers. At a minimum, there should be stringent regulations put in place that effectively block data centers from building in our county. Why should we allow the building of something we know harms our residents – full stop.

It was disappointing to see how the Board's order was written to consider a robust community benefits agreement framework as if it was already predetermined that the county would allow data centers if the terms were somehow acceptable. I wanted to share my thoughts on what I consider acceptable.

- Community Benefit Agreements:
  - Air purifiers because our air is now polluted or ear plugs because we cannot sleep due to the 24/7 noise of a data center or a local park do not make the residents who live within close proximity of the data center "whole".
  - A skilled trades training program that serves to benefit the data center industry is also not a community benefit to most residents. Why would we accept this as compensation when companies like Meta are constantly advertising that they have funded their own "free" training program? Clearly, they need the programs more than we do. They're trying to get us to foot the bill.
  - Any agreement with a data center developer must address property value loss. Property value studies need to be tailored to our specific situation. Property values in a rural town with little industry prior to the data center is not the same as a data center built in a large, established suburb in California. Clearly, a home near the fenceline of a data center is going to lose value. To state otherwise, is pure gaslighting.
  - If an industry is truly generating magical prosperity, it should have more than enough profit margin to guarantee zero negative impacts on its host communities. If a developer cannot afford to fully insulate neighbors from noise, air and water pollution, safeguard against fire hazards, protect local water tables, secure dedicated off-grid energy, and directly compensate affected homeowners for lost property value, then that business model is fundamentally insolvent without public subsidy.
- Robust protections need to be established:
  - What happens when a data center developer changes their plans mid-development and suddenly a closed loop system becomes an open loop system or their plans to build an electrical substation turns into using gas turbines instead?
  - What happens when a data center is approved under the premise that the noise won't be a nuisance but residents can't sleep or get a single moment of peace because of that 24/7 low hum that doesn't even register in terms of decibels used in our ordinances?
  - What happens if the community is experiencing brown-outs and black outs because of the data center? During the peak of summer?
  - What happens if a fire erupts at the data center or at the BESS powering the data center? Who is going to pay for the fall out?
  - What if being located within 1000 feet of a data center becomes a recognized fire risk by our home insurance carrier? Will the resident who fought against that data center from moving in be forced to pay that increased premium?
  - What happens if our air becomes markedly more polluted because of the data center?
    - Will we even know in real time? Or will we just silently become another community with higher-than-average mortality rates?
    - Will we even bother to set up air monitoring equipment in the vicinity of the data center or will we just take their word that they're operating cleanly?
- Environmental Justice:
  - If data centers are allowed to proliferate in California, economic and health disparities will grow as an inevitable outcome. Data centers are not sited in wealthy neighborhoods. They are sited in minority communities or economically disadvantaged communities.
    - A neighborhood with giant, whirring, windowless building is less desirable than a neighborhood with a Trader Joe's and a LA Fitness on the corner.
    - Siting data centers in these neighborhoods makes these neighborhoods less desirable, which means property values will be suppressed, which means residents lose wealth in addition to the loss of quality of life and health.
  - Data centers inherently = exacerbating disparities. No regulations can change this unless the regulation is to ban data centers. Any other regulation is simply softening the edges of disparity. You must know this.
- The will of the people:
  - Recent polling has shown 70% of Americans oppose building data centers in their neighborhoods, and yet data centers are being built despite community protest against them. Clearly, this is something Americans care very deeply about and rightfully so. People are protesting for the first time in their lives, and in many cases, their government representatives are simply looking the other way. Is this what democracy looks like? In California, of all places?

I urge you to realize that unchecked data centers and AI are not an inevitability. Just because Big Tech declares it is so, does not make it true. The residents of unincorporated Los Angeles have made their voices clear, and now we need our elected representatives to actually represent US, your constituents. Big Tech does not dictate the future of our communities - we do.

Sincerely,  
Sandy

**From:** [Susan Boulanger](#)  
**To:** [EDL-DRP BU-D Advance Planning Public Contact Email](#)  
**Subject:** Data Centers Meeting  
**Date:** Friday, June 19, 2026 1:25:36 PM

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CAUTION: External Email. Proceed Responsibly.

Hello -

I would like to add a comment/feedback:

The L.A. County Board of Supervisors has the power to put a moratorium on the building of the BESS facilities on Gale and Stimon on the border of City of Industry and Hacienda Heights, as well as the data center proposed for the Puente Hills Mall location - actually, of these facilities that are permitted by City of Industry all along their border.

No city or unincorporated area should be allowed to put neighboring residents at such great risk. It would be bad enough if they built these things in the middle of City of Industry, but to put them on our border is unconscionable.

I live across the street from the BESS facility that is, even as I write this, being built. No environmental studies, no regulations, nothing.

The powers that be must stop this now! We DO NOT want these things in our neighborhoods. They should not be allowed to be built in or near residential areas.

Hilda Solis and the rest of the Board must wake up and fight for us. You are pushing us too far. City of Industry is pushing us too far. They must commit to do everything they can to stop these things. That includes enlisting Governor Newsom, Alex Padilla, Adam Schiff. They also must rise up against Senator Bob Archuleta's SB 1274, which will give perks to places like City of Industry, all while their city council makes underhanded deals that cause horrible consequences for the rest of us.

We are not stupid. We know that City of Industry reaps the tax benefits as well as being paid off to allow these centers to be built. We residents won't see any benefits. The lame offerings of the owners of these centers to pay for our wifi is hideous and insulting. WE NEED CLEAN DRINKING WATER! WE NEED ELECTRICITY! WE NEED TO NOT BE PUT FAR DOWN ON THE LIST DURING ELECTRICITY DRAINS.

ENOUGH!!

Susan Boulanger  
Hacienda Heights, CA 91745

**From:** [Simon, Victoria](#)  
**To:** [Connie Chung](#); [Edward Rojas](#); [Azar Kattan](#); [Christine Montes](#); [Minh Le](#)  
**Subject:** USC Feedback on Data Center Work  
**Date:** Monday, June 22, 2026 9:18:43 AM

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**CAUTION: External Email. Proceed Responsibly.**

Hi all. As you may recall, we met with USC on data centers, and they've been tracking our work as we prepare the report back. Chip provided some thoughtful feedback after watching our first webinar that I wanted to send along.

Best,

Victoria

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**From:** Charles Zukoski <cfzukoski@gmail.com>  
**Sent:** Friday, June 19, 2026 9:11 AM  
**To:** Simon, Victoria <VSimon@cso.lacounty.gov>  
**Cc:** Allison Agsten <agsten@usc.edu>  
**Subject:** Re: Survey on data center sentiment

Victoria, Thank you.

I just reviewed the meeting minutes. The presentation and comments by your panel are excellent. I enjoyed going over them and look forward to seeing the draft ordinance.

One piece I did not see are the reasons a community might be interested in data centers. I was at a WELL (Water Education for Latino Leaders) last week which was attended by elected officials at the state and county level. The tension between the discussion reflected exactly the health and environmental issues your slide deck discusses and the need for their communities to have the revenue to fix roads, pay for schools and clean up pollution from previous economic activities.

There was one comment in the minutes about construction jobs. My understanding is that these are good jobs, employ a lot of people and are reliant on building new facilities. Thus the trades are all over data centers and the infrastructure that are needed to support them.

A question that haunts me is how our economic system is predicated on growth and if we are to grow, how we will do it. As i navigate these questions, I begin to look for trade-offs and comparison points: data centers vs golf courses, data centers vs

manufacturing plants, data centers vs Amazon warehouses and intermodal transfer stations. Rarely is the ability to choose one over the other at a particular moment in time and that is why we have planners. Never-the-less, discussing data centers in terms of their benefits as well as down sides and comparing these with other activities about which we have more experience is an approach that seems to shift the discussion.

Keep up the good work!

bet wishes,  
Chip

|

**From:** [Andrew Chen](#)  
**To:** [Connie Chung](#)  
**Cc:** [Edward Rojas](#); [karina.m.cao@gmail.com](mailto:karina.m.cao@gmail.com); [Edson Chao](#)  
**Subject:** Re: Introduction and collaborative agenda for 6/24 meeting  
**Date:** Tuesday, July 14, 2026 4:32:24 PM

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**CAUTION: External Email. Proceed Responsibly.**

Hi Connie!

How are you? I'm guessing that your team is wrapping up its data center studies and preparing to draft the report for LA County Supervisors.

I hope there's still time to include my research and topic call outs below in support of the final report.

In general, my desire is that your team's study will reveal that not enough is known about the specific impacts of data centers to unincorporated LA County, and that further technical studies need to be conducted, with the ultimate goal of drafting specific regulations that protect unincorporated LA County residents and surrounding environments.

I'd like to caution that data center proponents and developers are citing existing code and regulations – that were created when large-scale data centers did not exist – as a satisfactory means of mitigating unknown impacts. There is also a habit of performing legal vocabulary gymnastics that slice definitions so thin that, as an example, a fire's smoke plume can be simultaneously insignificant and also hazardous to your health, but emphasis on "insignificant" results in no further actions. ← this type of reasoning is not based in reality.

Our specific unincorporated areas, like Rowland Heights, Hacienda Heights, and Avocado Heights, are already overburdened with environmental injustice. LA County's own REO update technical study refers to our areas as disadvantaged communities.

Recently, more reporting and evidence has become available about the unforeseen negative impacts of data centers, and I've summarized the primary topic categories for you below, to include in your study and final report.

Thank you in advance for receiving the below information!

## Water Resource Strain and Water Pollution

-

A typical data center uses 300,000 gallons of water each day, equivalent to the demands of about 1,000 households.

- Large data centers can use an estimated 5,000,000 gallons of water each day, equivalent to the daily usage of towns with 10,000 to 50,000 residents.
- Data centers increase the threat of water insecurity
- From 2019 to 2023, the total evaporated water — including both direct evaporation for cooling and indirect evaporation for electricity generation — used by California data centers increased by more than 96%, reaching 49.9 billion liters, mostly from indirect evaporation.
- “Closed loop cooling systems” still have an open loop aspect, and require fill-and-flush maintenance and water-cooled heat exchange systems that can introduce rare bacteria, anti-corrosion chemicals, and other pollutants into the municipal water system.

#### Sources

<https://www.theguardian.com/us-news/2026/jul/03/datacenter-recall-elections>

<https://www.environmentalhealthproject.org/post/the-dangers-of-data-centers>

<https://news.ucr.edu/articles/2025/11/21/california-data-center-health-impacts-tripled-4-years>

<https://www.tomshardware.com/tech-industry/data-centers/cheyenne-suspends-data-center-fill-and-flush-and-closed-loop-discharges-after-meta-contractor-contaminated-its-reuse-water-system>

## Noise Pollution and Negative Health Effects

- Neighbors of data centers often complain about constant humming from cooling systems
- The humming of cooling systems, the rumbling of generators and the whirring of fans can be heard and felt up to a mile away.
- The noise consists of infrasound, ultra low frequency sound waves that fall below the threshold of human hearing. People physically feel them as pressure fluctuations. The results of this constant pressure include chronic sleep deprivation, insomnia, headaches, internal ear pressure, and anxiety.

- The noise is even more noticeable at night. Current regulations do not require 24 hour testing.
- At property lines, noise routinely hits 55–65 dBA, roughly 20-30 dB above natural nighttime baselines. The World Health Organization flags nighttime noise above 55 dB as a threshold for adverse health effects, including hypertension and cardiovascular risk.
- Current sound regulations do not cover these types of ultralow frequency noise pollution (dBc).
- Data centers generate noise levels that may exceed 90 decibels. Noise levels above 85 decibels are harmful to hearing.

#### Sources

<https://www.theguardian.com/us-news/2026/jul/03/datacenter-recall-elections>  
<https://www.nytimes.com/2026/06/17/us/data-centers-noise-pollution.html>  
<https://www.environmentalhealthproject.org/post/the-dangers-of-data-centers>  
<https://www.gadgetreview.com/the-devastating-effects-of-ai-data-center-noise-on-the-human-body-mind>  
<https://www.tomshardware.com/tech-industry/artificial-intelligence/data-centers-face-increasing-infrasound-complaints-from-neighboring-communities-sounds-do-not-register-on-decibel-meters-but-irritate-local-citizens>  
<https://www.independent.co.uk/news/world/americas/wisconsin-microsoft-data-center-lawsuit-noise-b3010038.html>

## Electricity Grid Strain and Increasing Costs

- A single data center can consume as much electricity as 2,000 homes.
- Grid strain results in infrastructure upgrades that cause consumer rates to increase.
- Data centers are large load customers and can negotiate lower rates, which means additional expenses must be covered by residential customers.

#### Sources

<https://www.theguardian.com/us-news/2026/jul/03/datacenter-recall-elections>  
<https://www.environmentalhealthproject.org/post/the-dangers-of-data-centers>

## Air Pollution

- Data center diesel generators are a common pollution source, emitting nitrogen oxides, which create smog, and fine particulate matter linked to higher rates of respiratory and cardiovascular diseases.
- Even if diesel generators produce 10% of the permitted emissions, public health costs associated with on-site emissions will continue to increase.

Source

<https://news.ucr.edu/articles/2025/11/21/california-data-center-health-impacts-tripled-4-years>

## Diminished Property Value

- Three lawsuits argue the constant humming and vibrations from data centers cause significant depreciation of property values and loss of quiet enjoyment.

Source

<https://www.nytimes.com/2026/06/17/us/data-centers-noise-pollution.html>

## Greater Unemployment

- The data center development model features opaque negotiations that deliver short-term construction jobs and revenue, but little durable economic upside.

Source

<https://revealnews.org/podcast/data-centers-northern-virginia-manassas-ai-sam-altman/>

On Thu, Jun 25, 2026 at 11:26 AM Connie Chung <[cchung@planning.lacounty.gov](mailto:cchung@planning.lacounty.gov)> wrote:

Thanks for meeting with us yesterday. I think a successful report is one that provides our decision-makers with sufficient information to inform their next steps. Here is a link with some examples of reports to the BOS for your reference: [Board Correspondence – COUNTY OF LOS ANGELES](#).

Thanks! Happy to stay in touch.

Connie

**CONNIE CHUNG, AICP** (she/her/hers)

**DEPUTY DIRECTOR, Advance Planning Division**

Office: (213) 974-6457 • Direct: (213) 893-7038

Email: [cchung@planning.lacounty.gov](mailto:cchung@planning.lacounty.gov)

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**From:** Andrew Chen <[archen81@gmail.com](mailto:archen81@gmail.com)>

**Sent:** Wednesday, June 24, 2026 11:19 AM

**To:** Connie Chung <[cchung@planning.lacounty.gov](mailto:cchung@planning.lacounty.gov)>; Edward Rojas  
<[erogas@planning.lacounty.gov](mailto:erogas@planning.lacounty.gov)>

**Cc:** [karina.m.cao@gmail.com](mailto:karina.m.cao@gmail.com); Edson Chao <[edson.chao@gmail.com](mailto:edson.chao@gmail.com)>

**Subject:** Re: Introduction and collaborative agenda for 6/24 meeting

**CAUTION: External Email. Proceed Responsibly.**

Connie and Edward,

Thank you again for taking the time to meet with us! We appreciate all of your hard work.

In the continued spirit of supporting your current study efforts, I'd like to ask: what does success (for this study) look like to you? And, has the general feedback you've received from the community been substantial enough to help you achieve your vision of success? If not, please let me know where I can help fill the gaps.

In the meantime, I will be curating recent and reputable articles that report on the real-world impacts of living near a data center for you to include as part of your studies.

I look forward to continuing our collaborative efforts! Thank you!!

- Andrew

On Mon, Jun 22, 2026 at 12:33 PM Andrew Chen <[archen81@gmail.com](mailto:archen81@gmail.com)> wrote:

Hello, Connie and Edward!

Thank you again for agreeing to share your valuable time with me this coming Wednesday.

Since our scheduled meeting is brief, I wanted to share my background and a proposed agenda ahead of time so we can maximize our live discussion. I'm new to engaging with LA County at this level, but through my own research, I understand that Advance Planning is currently in the crucial phase of building a robust technical and administrative record following the Board's April 14 motion on data centers.

With that in mind, I have attached a proposed meeting agenda below to help guide our 30 minutes toward how the community can best support your team's data-gathering efforts. (Please note that I have also invited fellow community members and civic advocacy colleagues, Karina and Edson, to listen in on our call).

**My background:**

I am a member of the Rowland Heights Community Coordinating Council (where I had the pleasure of meeting Lorraine Acuña). My background is highly technical and data-driven: I hold a degree in chemical engineering and have spent years working in oil refineries and a nuclear power plant. Today, I serve as an executive at an e-commerce company, managing global teams, complex initiatives, and digital user engagement.

Because of my background, please feel free to speak with me candidly and technically. I recognize the difficult tightrope your department is currently walking between regional infrastructure demands, political realities, and community protections. My primary goal is to help you translate generic neighborhood fears and complaints into the objective, actionable, and legally defensible data points your team needs to permanently update Title 22.

During this specific meeting, I am representing my own thoughts and opinions. However, Karina, Edson, and I work closely with large, motivated, and diverse community groups, and I am entirely willing to use my leadership background to "translate" LA County Planning's technical vision and constraints back to residents.

Please let me know if you have any pre-meeting questions or if there is any specific data you'd like us to look into before Wednesday. Looking forward to a productive conversation!

Thank you!

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~ Andrew Chen

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~ Andrew Chen

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~ Andrew Chen

## 1. Introduction & Grounding the Discussion (Handled asynchronously via email)

- a. Acknowledge the recent community Zoom sessions regarding AI data centers.
- b. Acknowledge the Title 22 regulatory gaps for advancing technologies, and the delicate balance Planning must maintain between infrastructure pressure (including labor interests) and resident protections while completing the report due to the Board on August 12.
- c. Acknowledge the regional planning challenge: Finding space to absorb high-demand digital infrastructure (such as in the Antelope Valley) while protecting dense, sensitive urban neighborhoods like Rowland Heights.
- d. Acknowledge the legal constraint: The department cannot write arbitrary bans; it needs an ordinance that secures Board support and cleanly survives developer litigation.
- e. **Meeting Objective:** To understand Planning's current report phase, and identify how the community can provide the "substantial evidence" needed to justify strict, objective performance and siting standards.

## 2. Building a Bulletproof Administrative Record

- a. What technical gaps or data limitations is your team encountering, and are outside technical consultants being brought in to model the unique noise, water, heat, and energy footprints of these facilities? How can the community help shape the scope of those studies to ensure they address local neighborhood risks and constraints?
  - i. **Strategic Community Input:** I want to help your team ensure that consultant scopes avoid standard industry loopholes—such as using 24-hour "average noise" metrics that mask nocturnal spikes, or omitting dBC low-frequency tones that, while are difficult to hear, are highly disruptive to human sleep and health in adjacent residential zones.
- b. To establish a legally defensible "nexus" for strict residential setbacks, what specific types of localized data carry the most weight? Are secondary studies on noise/grid impacts sufficient, or do you need first-party, site-specific analyses from our localities?

## 3. Navigating Title 22 Gap & Board Alignment

- a. To ensure the code amendment sticks, is Planning leaning toward creating an entirely distinct, high-impact industrial classification specifically for AI data centers (separating them from standard logistics/warehousing)?

- b. How can organized community groups best signal strong public backing for the department's most protective regulatory concepts, ensuring the Board of Supervisors feels confident supporting a robust update?

#### 4. Community Mobilization & Next Steps

- a. With one Zoom session remaining, what is the most legally effective format for the community to formally submit technical land-use objections so they are explicitly cemented into your report's appendix or record?
- b. Are there specific technical models or ordinances from other jurisdictions (e.g., municipal bans or strict overlay zones) that your team is currently evaluating where our community's formal support could help validate that approach for LA County?
- c. Beyond the August report deadline, what is the best mechanism for me to continuously feed/guide localized data or engineering findings directly to your policy writers?

**From:** [The Malkin Family](#)  
**To:** [EDL-DRP BU-D Advance Planning Public Contact Email](#)  
**Subject:** Data centers  
**Date:** Thursday, June 25, 2026 7:58:11 PM

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**CAUTION: External Email. Proceed Responsibly.**

It would be great if the County either outlawed or put guardrails on new data centers and forced them to be sufficient entirely onto themselves, creating their own water (hydrogen energy) and power and limit noise, pollution, fire, etc. so as to not impact the neighbors' environment nor their bills..

It would be even better if the County could truly represent their unincorporated constituents by regulating cities that impact their unincorporated neighbors with their data centers.

It would be even better if the County would represent the unincorporated areas vigorously with the State to oppose data centers .

Teri Malkin  
18021 Galatina St.  
Rowland Hts., CA 91748  
626-833-7862

**From:** [Evan Ducker](#)  
**To:** [Edward Rojas](#); [Nicholas Pisca](#); [Simon, Victoria](#); [Richard Stillwagon](#); [Connie Chung](#)  
**Subject:** RE: data center industry discussion with CoreSite  
**Date:** Wednesday, July 8, 2026 3:03:20 PM  
**Attachments:** [image001.png](#)  
[multi-tenant data centers in LA.pdf](#)

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**CAUTION: External Email. Proceed Responsibly.**

Edward and team –

Thank you for taking the time to meet yesterday and for including input from industry representatives in your report. Please let me know if you have any follow up questions, and please consider the tour invite an open invitation.

See attached for a few of the slides I shared, for your reference. The key message I aimed to convey during the call:

Local multi-tenant data centers function like civic infrastructure for everyday digital life and essential services—supporting navigation, mobile banking, healthcare access, school and childcare updates, emergency alerts, video calls, and streaming, as well as the healthcare systems, utilities, studios, startups, and public agencies that anchor the local economy. A constructive planning framework would take into account the inherent trade-off and focus on siting these facilities thoughtfully, transparently, and under clear rules that manage impacts while preserving the services, jobs, and economic activity they enable.

Lastly, during the call we discussed typical generator runtimes. I was able to confirm that we run each generator for ~10 hours/year for maintenance, which complies with federal and South Coast AQMD standards. A helpful evaluation framework would weigh localized emissions impacts relative to the substantial broader regional emissions *reductions* enabled by the range of digital services that are contingent on the presence of local multi-tenant data centers, including remote work / video conferencing, cloud collaboration, telehealth, building energy management, grid optimization, logistics efficiency, and reduced business travel. Research on telework, virtual meetings, and lifecycle emissions generally suggests that this broader accounting is a useful way to evaluate the issue, particularly in a driving county like Los Angeles where any reduction in auto emissions from long commutes would make a material positive impact on net emissions.

Regards,  
Evan

Evan Ducker

Vice President and General Manager



C: 818-797-4434  
W: 213-327-1275  
[Evan.Ducker@CoreSite.com](mailto:Evan.Ducker@CoreSite.com)  
624 S Grand Ave, Suite 110  
Los Angeles, California 90017

*This message was classified as **General Business** by Evan Ducker on Wednesday, July 8, 2026 at 2:58:38 PM.*

# Shared Infrastructure, Greater Efficiency

- **Shared Infrastructure by Design:** CoreSite develops **multi-tenant (colocation) data centers**—similar to an apartment building, where many organizations share one highly efficient facility.
- **More Efficient Infrastructure:** Consolidating IT infrastructure reduces duplication, improves energy efficiency, and makes better use of land and utility investments.
- **Supporting California's Digital Economy:** This shared model provides secure, resilient digital infrastructure while supporting economic growth and responsible infrastructure development.



Multitenant facilities owned/leased by a data center provider serving many organizations and businesses



Smaller, private facilities serving a single business



Large facilities designed to scale massively, typically serving one or two businesses



Small, decentralized computing facilities located close to the network edge, where data is generated and consumed

# Why do we Want Multi-Tenant Data Centers?

| <br>ECONOMIC IMPACT                                                                                                                        | <br>ENVIRONMENTAL IMPACT                                                                                                                                                        | <br>TECH INNOVATION                                                                                                             | <br>BUSINESS SUPPORT                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Creates jobs and generates tax revenue</li><li>• Attracts investors and businesses</li><li>• Drives innovation and economic growth</li><li>• Supports community stability</li></ul> | <ul style="list-style-type: none"><li>• Centralizes data centers in fewer locations</li><li>• More energy efficient and cost-effective</li><li>• Reduces duplication of infrastructure</li><li>• Built with experienced staff and shared infrastructure</li></ul> | <ul style="list-style-type: none"><li>• Data centers power the digital economy</li><li>• Enable advances across industries</li><li>• Support technologies from smartphones to autonomous vehicles and VR</li></ul> | <ul style="list-style-type: none"><li>• Eliminates need for on-site data storage and management</li><li>• Reduces costs and complexity</li><li>• Avoids investment in real estate, IT infrastructure, power backup, and facility management</li></ul> |

# Generators – Emissions and sound

- **Emergency Use Only:** Backup generators operate only during routine testing and infrequent power outages to maintain uninterrupted service for critical digital infrastructure.
- **Limited Emissions:** Backup generators are the only on-site source of direct emissions and typically operate for only a small number of hours each year.
- **Strictly Regulated:** Generator operation is subject to stringent federal, state, and local air quality regulations and permitting requirements.



[This Photo](#) by Unknown Author is licensed under [CC BY-SA](#)

**From:** [Tim Victor](#)  
**To:** [EDL-DRP BU-D Advance Planning Public Contact Email](#); [DRP Ordinance Studies](#)  
**Subject:** Vortex - Request to contribute to the data center study (Item 10, 4/14/26)  
**Date:** Monday, July 13, 2026 10:12:04 AM

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**CAUTION: External Email. Proceed Responsibly.**

Hello there,

I'm Tim Victor, cofounder of Vortex. We build small-scale, behind-the-meter compute infrastructure & battery storage systems at existing commercial and industrial sites across Southern California.

I saw the Board's April 14 motion directing Regional Planning and Public Health to study data center impacts and bring back recommendations, and I'd like to contribute if there's still room for stakeholder input before the report goes back to the Board.

Before Vortex, [I spent 6 years working to integrate clean energy and EV charging infrastructure safely into existing grid infrastructure in LA County](#). The same focus on reusing existing grid infrastructure has continued with me at Vortex. Our goal is to build distributed compute to meet the demand on LA based businesses but without the negative effects that a traditional centralized data center would cause on a community.

Our facilities are built specifically to avoid the impacts the motion raises: no on-site combustion or backup generators, no water consumption, no new substation or required additional grid capacity, and the ability to reduce demand on request from the utility or grid operator. We think there's a meaningful difference between hyperscale campuses (greater than 25 megawatt) and small, distributed, non-combustion, grid-supportive deployments (smaller than 10 megawatts) and I'd welcome the chance to share how we'd suggest distinguishing between them if it's useful to your work.

Would it be possible to get 15-20 minutes with whoever's leading the technical or land-use side of this study before the report is finalized? Happy to work around your schedule, and glad to send written materials in advance if that's more useful.

Thank you for the work you're putting into this! It's a hard balance to strike but there are ways that we can both benefit from the industry's demand and benefit our local communities with cleaner and more affordable solutions outside of limiting by function instead of form.

Best,  
Tim V

**Tim Victor**  
**Founder**

[See what we are up to](#)



sender notified by

**Mail Track for Gmail**

**From:** [Tim Victor](#)  
**To:** [Connie Chung](#); [Edward Rojas](#); [Minh Le](#)  
**Cc:** [Shea Hughes](#)  
**Subject:** Data Center Meeting - Followup Vortex - LA County  
**Date:** Wednesday, July 29, 2026 11:19:26 AM

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**CAUTION: External Email. Proceed Responsibly.**

Hi All,

Thanks again for letting me weigh in on the LA data center conversation. It's a tough spot, communities pushing back on builds while businesses ask for capacity, so I don't envy the position you're in haha. I also apologize for the lengthy reply but I wanted to be thorough.

We started Vortex to try and remove most of the downsides of AI infrastructure, and we think most of them trace back to one thing: the size of a single site.

The data centers in the news run hundreds of megawatts to gigawatt scale. Those are for training the largest models, not for using them. Actual model use (inference) needs far smaller facilities, because models get replicated across separate nodes rather than wired directly together the way they are in training clusters. Those nodes run from hundreds of kW to a few MW. In urban environments, single-site size is what drives most of the problems.

A few specifics:

- **Cooling:** Large sites use centralized systems that can lean on evaporative cooling for efficiency, though the industry is shifting to non-evaporative dry coolers, which is what we use. Smaller compute systems also mean smaller and much quieter cooling systems.
- **Resilience:** Concentrating capacity at one large site raises downtime risk, which pushes operators to pile on redundancy, including the diesel backup generators that communities dislike. Spreading capacity across sites makes the network resilient, since one failure isn't 100% of the system. This is what we brought over from distributed energy: solar and storage add system-level resilience, and the same logic applies to compute. We match centralized uptime with far less redundancy and far fewer generators.
- **Rates:** Large sites need new, much larger utility investment instead of reusing existing capacity. That investment gets rate-based and passed to ratepayers, pushing retail rates up (cost to serve divided by volume sold). Reusing existing capacity adds real load without major utility spend, which pushes rates down by growing volume without growing cost to serve.

Our biggest concern with the current narrative is that it draws no line between small, low-impact compute and large data centers. Right now there's no threshold separating a "data center," with all its baggage, from a few compute servers that have no meaningful community impact. We'd suggest drawing the line where systems start requiring major electrical upgrades, roughly 8 to 10 MW. Below that you can fit into existing capacity; above it you're usually building a substation. That threshold also splits distributed from centralized cleanly, by capping how much infrastructure lands at any one site.

We'd also encourage the County to let that same threshold set the permitting path. A conditional use permit is the right tool for a site that genuinely warrants case-by-case scrutiny: new substation, backup generators, evaporative water use, real noise and traffic. Those are all features of the large centralized builds. A sub-threshold system has none of them, so putting it through a full CUP treats a few servers like a factory. The practical effect is worse than it sounds: the CUP timeline and cost are only absorbable by the largest developers, so requiring it on small systems quietly favors the big centralized sites and pushes distributed capacity out of the market, which is the opposite impact than what the community is asking for.

So our suggestion is to reserve the CUP (and its discretionary review) for systems above the threshold, and let smaller systems proceed by-right, subject to the standard building, electrical, fire, and noise codes that already apply. That keeps public scrutiny focused where the impacts actually are, without foreclosing the smaller, quieter, grid-friendly deployments that don't create them.

Thank you again for the chance to contribute. We look forward to your report and seeing LA thrive in the space.

Yours,  
Tim V

## Supporting resources

On sizing and permitting, other jurisdictions already tier by megawatt and let small systems proceed by-right:

- Fairfax County, VA, summarized in the AAAS local-government fact sheet. Permits data centers by-right with size thresholds, triggering special review only above 40,000 sq ft commercial or 80,000 sq ft industrial. <https://www.aaas.org/sites/default/files/2025-09/Data%20Centers%20Fact%20Sheet%203%20-%20Community%20Strategies%20to%20Address%20Data%20Center%20Development%20and%20Operation.pdf>
- Mansfield, MA draft bylaw. Classifies data centers by megawatt demand rather than building size, with a Low-Impact tier at 2 MW or less. <https://www.mansfieldma.com/DocumentCenter/View/13697/Data-Centers-Draft-Article-03-23-26-w-Town-Counsel-Comments---markup>
- Rush County, IN ordinance. Tier 1 covers facilities under 5 MW with lighter requirements. <https://rushcounty.in.gov/wp-content/uploads/2026/03/datacenter.pdf>  
<https://rushcounty.in.gov/planning-and-zoning/>
- NACo county primer on data center zoning, for the general toolkit of by-right, conditional use, and special exception approaches. <https://www.naco.org/resource/naco-informational-primer-and-county-considerations-data-centers>

On where AI energy demand actually goes, and why inference sites can be smaller:

- DOE / Lawrence Berkeley National Laboratory, 2024 U.S. Data Center Energy Usage Report. The authoritative federal baseline on data center load growth. <https://www.energy.gov/articles/doe-releases-new-report-evaluating-increase-electricity-demand-data-centers>  
<https://escholarship.org/uc/item/32d6m0d1>
- IEA, Energy and AI (2025), summarized by Brookings. Electricity use from AI servers, predominantly inference, is projected to grow about 30% per year and account for nearly half the net increase in global data center consumption through 2030. <https://www.brookings.edu/articles/global-energy-demands-within-the-ai-regulatory-landscape/>

On why large loads, specifically, pressure retail rates:

- Virginia JLARC analysis, summarized by Axios. Data centers cover their own usage now, but the buildout could add \$14 to \$37 to local monthly bills by 2040, and one estimate tied over 60% of a PJM auction increase, roughly \$9.3 billion, to data center demand. <https://www.axios.com/2025/08/04/electricity-costs-bills-data-centers-ai>  
[National Academies](#)

**Tim Victor**

**Founder**

[See what we are up to](#)

**From:** [Edward Rojas](#)  
**To:** [Connie Chung](#)  
**Cc:** [Bruce Durbin](#); [Alyson Stewart](#)  
**Subject:** FW: Data Center Concerns from LA Resident  
**Date:** Wednesday, July 15, 2026 7:33:20 AM

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FYI

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

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**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Wednesday, July 15, 2026 6:13 AM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** Fw: Data Center Concerns from LA Resident

Please forward to your staff as you see fit.

**BRYAN S. MOLLER**

**SENIOR PLANNER, Operations & Major Projects**

Office: (213) 974-6411 • Direct: (213) 893-7411  
*Please note that our office is closed on Fridays.*

All official correspondence is issued solely from [\[Name\]@planning.lacounty.gov](#) and [donotreply@lacounty.gov](#) email addresses. Communications from other domains are not affiliated with our organization and should not be treated as an official communication. Please also note that the County will never request funds via wire transfer.

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**From:** Nathan Chen <[nathanchen.32602@gmail.com](mailto:nathanchen.32602@gmail.com)>  
**Sent:** Tuesday, July 14, 2026 6:35 PM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** Data Center Concerns from LA Resident

**CAUTION: External Email. Proceed Responsibly.**

Hello Planning team,

I am writing as a lifelong resident of Walnut, CA surrounding the cities impacted by the proposed BESS and data center projects. Specifically, the Marici BESS which is already under construction and three other proposed data center sites in City of Industry and El Monte. I would like to submit this written comment expressing my disdain for ALL data centers and BESS sites in our neighborhood.

Projects of these nature would severely impact our health, livelihoods, and livelihoods. With a personal stake, my allergist is located on the same street as the proposed Puente Hills site. I, and hundreds of others, receive weekly allergy injections here, of which immunotherapy serums are stored. I am severely concerned with the long term health impacts of not only myself, but of other patients given the storage of precious health equipment in proximity to a highly EMF emitting site. Beyond health concerns, studies have shown that data centers cause heat island effects with a 6 mile radius, will increase resident utilities, exacerbate water scarcity, cause severe noise pollution, and many more issues.

I urge you to act in whatever way possible to protect the livelihoods of our communities against these data centers, and for the property developers to fully conduct an Environmental Impact Assessment. Nonprofits like the PHCPA are challenging City of Industry yet we need more than grassroots efforts to ensure the safety of our community. What signals or thresholds of engagement from residents do you need to ensure actions against data center and BESS projects?

Please let me know. Thank you.

Best,

Nathan Chen

[nathanchen.32602@gmail.com](mailto:nathanchen.32602@gmail.com) | (909)542-7165

**From:** [Edward Rojas](#)  
**To:** [Connie Chung](#)  
**Cc:** [Bruce Durbin](#); [Alyson Stewart](#)  
**Subject:** FW: Data center study  
**Date:** Wednesday, July 15, 2026 7:46:41 AM

---

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

---

**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Wednesday, July 15, 2026 6:14 AM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** Fw: Data center study

**BRYAN S. MOLLER**

**SENIOR PLANNER, Operations & Major Projects**

Office: (213) 974-6411 • Direct: (213) 893-7411  
*Please note that our office is closed on Fridays.*

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---

**From:** Erika M <[erikamedina420@gmail.com](mailto:erikamedina420@gmail.com)>  
**Sent:** Tuesday, July 14, 2026 10:07 PM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** Data center study

**CAUTION: External Email. Proceed Responsibly.**

Hello I'm just writing in to give my input on your data center study. I live in South El Monte currently the San Gabriel Valley is being attacked by developers that are trying to poison our communities with their horrible data centers that bring with them increasingly High bills, poor air quality, a restriction on our water resources that are already heavily restricted. These Data centers do not bring jobs that are long-lasting, they do not bring anything good to the community but bad for our health and for the environment, and the quality of living for the children of the San Gabriel Valley and beyond. I urge you not to move forward with any data centers and to announce a moratorium. Sincerely a concerned citizen.

Best,

Erika Christianne Medina

**From:** [Edward Rojas](#)  
**To:** [Connie Chung](#)  
**Cc:** [Bruce Durbin](#); [Alyson Stewart](#)  
**Subject:** FW: Data Center  
**Date:** Wednesday, July 15, 2026 7:34:02 AM

---

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

---

**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Wednesday, July 15, 2026 6:14 AM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** Fw: Data Center

Please forward to your staff as you see fit.

**BRYAN S. MOLLER**

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---

**From:** Tiffany Loi <[tiffanydaie1@gmail.com](mailto:tiffanydaie1@gmail.com)>  
**Sent:** Tuesday, July 14, 2026 8:28 PM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** Data Center

CAUTION: External Email. Proceed Responsibly.

Hello Hilda,

As a lifelong resident of Hacienda Heights, I'm highly against data centers and battery shortage facilities. We do not have the water or electricity that these data centers require. I live across the street from Puente Hills Mall and I'm terrified at the consequences that this will bring. From sound to environmental concerns, this does not belong in area so close to businesses, homes and schools.

There was recently that fire in Boyle Heights which lasted for 8 days and the Garden Grove Hazardous material fire lasted 5 days. With such hazardous materials, these fires can't even be put out. How many more examples do we need? Please do not allow the data center to move forward, it would be a threat to our lives and community.

Thank you,

Tiffany Loi

**From:** [Edward Rojas](#)  
**To:** [Connie Chung](#)  
**Cc:** [Bruce Durbin](#); [Alyson Stewart](#)  
**Subject:** FW: No Data Centers  
**Date:** Wednesday, July 15, 2026 7:47:23 AM

---

Last one

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

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**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Wednesday, July 15, 2026 6:14 AM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** Fw: No Data Centers

**BRYAN S. MOLLER**

**SENIOR PLANNER, Operations & Major Projects**

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---

**From:** Carlos Navarrette <[cnavarrette121790@gmail.com](mailto:cnavarrette121790@gmail.com)>  
**Sent:** Tuesday, July 14, 2026 10:58 PM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** No Data Centers

**CAUTION: External Email. Proceed Responsibly.**

Dear L.A County,

Please do not rush forward through the community input phase of the data center planning. I still believe it is too early to begin drafting any kind of finalized reports. Please continue allowing the public to send in their comments. This is our lives we are talking about. There are a lot more working class community members that would suffer the consequences of what these billionaire oligarchs are forcing on us. NO DATA CENTERS!

**From:** [Edward Rojas](#)  
**To:** [Connie Chung](#)  
**Cc:** [Bruce Durbin](#); [Alyson Stewart](#)  
**Subject:** FW: Data Centers & BESS  
**Date:** Wednesday, July 15, 2026 7:34:27 AM

---

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

---

**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Wednesday, July 15, 2026 6:14 AM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** Fw: Data Centers & BESS

**BRYAN S. MOLLER**

**SENIOR PLANNER, Operations & Major Projects**

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---

**From:** Kai Umeda <[kai\\_umeda@icloud.com](mailto:kai_umeda@icloud.com)>  
**Sent:** Tuesday, July 14, 2026 10:01 PM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** Data Centers & BESS

CAUTION: External Email. Proceed Responsibly.

Please under no circumstances include a data center anywhere in SGV region or anywhere else in LA County. They are dangerous to health of humans and our wildlife, as our local bee populations across the country are dying because of it. And our water will become undrinkable and useless for domestic needs. These do not generate jobs as you would like to think. So please we do not want any kind of Data Centers or BESS in our homes. I know Montebello made that abundantly clear.

Kai Umeda  
Sent from my iPad

**From:** [Edward Rojas](#)  
**To:** [DRP Ordinance Studies](#)  
**Cc:** [Connie Chung](#)  
**Subject:** FW: Data Centers in LA County  
**Date:** Wednesday, July 15, 2026 4:31:25 PM

---

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

---

**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Wednesday, July 15, 2026 2:17 PM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** Fw: Data Centers in LA County

**BRYAN S. MOLLER**

**SENIOR PLANNER, Operations & Major Projects**

Office: (213) 974-6411 • Direct: (213) 893-7411  
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---

**From:** Yolanda Diaz <[ydiaz13@yahoo.com](mailto:ydiaz13@yahoo.com)>  
**Sent:** Wednesday, July 15, 2026 2:01 PM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** Data Centers in LA County

**CAUTION: External Email. Proceed Responsibly.**

I've lived in LA County for many years. Please no Data Centers. Our county is too congested and overcrowded to have any data centers. We still don't know the ramifications of such centers. For the sake of our community, no data centers.

[Sent from Yahoo Mail for iPhone](#)

**From:** [Edward Rojas](#)  
**To:** [DRP Ordinance Studies](#)  
**Subject:** FW: No to data centers  
**Date:** Thursday, July 16, 2026 5:57:45 PM

---

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

---

**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Thursday, July 16, 2026 5:40 PM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** FW: No to data centers

Here you go.

**DIANA GONZALEZ** (she/her/hers)

**PRINCIPAL PLANNER, Operations & Major Projects (OMP)**

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---

**From:** Maria Lin <[marialin@gmail.com](mailto:marialin@gmail.com)>  
**Sent:** Wednesday, July 15, 2026 10:57 PM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** No to data centers

**CAUTION: External Email. Proceed Responsibly.**

Dear Sir or madam,

Let's not be foolish and greedy! Would Kim Kardashian want a data center next to her house? No! With the push on AI, jobs have been slashed and the job market and economy are worse. Gas prices are still at an all-time high, as are food and groceries. Data centers will not only cause the community to lose their job to AI, they will create more robust form of AI that in the future. Simple folks like me and you will have to fight and protest to keep these data centers away.

We must put an end to data centers. Look at Wisconsin, Georgia, and Michigan - don't you think we should from their experience with data centers.

. Let's keep LA county clean. We don't need data centers polluting our look for the 2028 Olympics. Our summers are so hot, we don't need more harmful pollution in California. Also, let's think of our communities, we will lose our jobs when AI takes over. Think about it: we may not be able to drink from our tap water, especially given the existing drought, and imagine one of these centers catching on fire. Think of Boyle heights, think of the fires that displaced Alta Dena communities. Think of not being able to take a shower because the data center is using all the water, think of not being able to flush the toilet. Let's not walk into the same traps as those other states did!

Maria

**From:** [Edward Rojas](#)  
**To:** [DRP Ordinance Studies](#)  
**Subject:** FW: LA County Planning Data Center Study  
**Date:** Thursday, July 16, 2026 5:57:32 PM

---

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

---

**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Thursday, July 16, 2026 5:38 PM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** FW: LA County Planning Data Center Study

I believe we are to forward these to you. Thanks!

**DIANA GONZALEZ** (she/her/hers)

**PRINCIPAL PLANNER, Operations & Major Projects (OMP)**

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---

**From:** Aurora Mireles <[aurora\\_mireles@sbcglobal.net](mailto:aurora_mireles@sbcglobal.net)>  
**Sent:** Wednesday, July 15, 2026 7:40 PM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** LA County Planning Data Center Study

**CAUTION: External Email. Proceed Responsibly.**

To Whom It May Concern,

I am a resident of LA County and I learned that LA County Planning is wrapping up their study on data centers and is shifting to drafting a report. The environmental devastation and toll to human health is already well known, so I ask that you implement a moratorium on data centers.

If we allow the construction of data centers, we condemn ourselves to greenhouse gas pollution, noise pollution, light pollution, water shortages, electricity bills rising,

electric grid strain, and local nature like birds and bees dying out. Also, property values would plummet. Finally, on a moral note, data centers aid the mass surveillance by ICE, which have shown themselves to be unconstitutional, lawless violence attackers. Our quality of life will be eroded and will cause much unnecessary suffering and death.

I implore you to put our planet and communities first. Our future generations need us to be good stewards.

Thank you.

Aurora Mireles

**From:** [Edward Rojas](#)  
**To:** [Connie Chung](#)  
**Cc:** [Alyson Stewart](#); [Bruce Durbin](#)  
**Subject:** FW: LA County Planning Data Center Study  
**Date:** Wednesday, July 15, 2026 8:44:03 AM

---

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

---

**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Wednesday, July 15, 2026 8:43 AM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** Fw: LA County Planning Data Center Study

**BRYAN S. MOLLER**

**SENIOR PLANNER, Operations & Major Projects**

Office: (213) 974-6411 • Direct: (213) 893-7411  
*Please note that our office is closed on Fridays.*

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---

**From:** Madeline Ocampo <[madelinemarisol.ocampo@gmail.com](mailto:madelinemarisol.ocampo@gmail.com)>  
**Sent:** Wednesday, July 15, 2026 8:01 AM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** LA County Planning Data Center Study

**CAUTION: External Email. Proceed Responsibly.**

Hello,

I am a resident of LA County and I learned that LA County Planning is wrapping up their study on data centers and is shifting to drafting a report. The environmental devastation and toll to human health is already well known, so I ask that you implement a moratorium on data centers.

If we allow the construction of data centers, we condemn ourselves to greenhouse gas pollution, noise pollution, light pollution, water shortages, electricity bills rising, electric grid strain, and local nature like birds and bees dying out. Also, property values would plummet. Finally, on a moral note, data centers aid the mass surveillance by ICE, which have shown themselves to be unconstitutional, lawless violence attackers.

We must be on the right side of history and stand up to this madness. Put our planet and communities first.

Thank you.

From,  
Madeline

**From:** [Edward Rojas](#)  
**To:** [DRP Ordinance Studies](#)  
**Cc:** [Connie Chung](#)  
**Subject:** FW: Data Center Study  
**Date:** Wednesday, July 15, 2026 4:31:36 PM

---

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

---

**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Wednesday, July 15, 2026 4:03 PM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** Fw: Data Center Study

**BRYAN S. MOLLER**

**SENIOR PLANNER, Operations & Major Projects**

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---

**From:** caleb swyers <[caleb.swyers@gmail.com](mailto:caleb.swyers@gmail.com)>  
**Sent:** Wednesday, July 15, 2026 3:00 PM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** Data Center Study

**CAUTION: External Email. Proceed Responsibly.**

Good afternoon,

I understand LA County Planning Commission is studying impacts of data centers. Some impacts I urge you to include in your study (if you haven't already):

- Environmental Impacts
- Noise Pollution
- Air Pollution
- Fire risk and what the plan is to protect residents when a fire inevitably happens (Lineage Logistics Fire and Garden Grove chemical leak)
- Impacts of carrying large amounts of diesel fuel on site (in Monterey Park, the developer estimated 110,000 gallons of on site diesel fuel)
- Risks of BESS (Moss Landing BESS Fire, Escondido BESS Fire)
- What happens when/if the AI bubble bursts and hyperscale data center companies abandon the data centers (leaving all of that fuel, e-waste, and other hazard chemicals to rot). (ie Vernon and Exide's decades long pollution of east LA)
- How is SCE going to mitigate another fire with that much power going to one location (Altadena fires)
- Impacts of e-waste. The developer will need to update their tech every few years to stay competitive. Where is the e-waste going, what are the impacts of that kind of e-waste turnover. What communities have to deal with effects of e-waste disposal and recycling?  
(ie City of Industry's Ecobat battery recycling facility and the continued lead and carcinogenic pollution on surrounding communities)
- Differences between lithium ion battery and salt ion battery.
- Impacts of forever liquids and impacts of massive amounts of water consumption that becomes unusable once it runs through the system
- Impacts of heat island effects from substations, the data center itself, and the cooling vents. The heat has to go somewhere. Our computers and phones heat up, a data

center will too.

- Cumulative impacts of all of the above, plus cumulative impacts of more and more data centers as there would never be just one.
- LA disasters continue to occur (lineage logistics fire, altadena fire, etc) and data centers not only are not immune but will contribute to the risk of more disasters occurring and/or making disasters exponentially worse.
- What measures will insure that the community (schools hospitals and homes etc) will be given water and electricity priority when there are power outages?

There's not shortage of evidence showing how data centers negatively impact other communities. LA is already strained for resources and regulations, there's no need to compound the risks of future disasters with data centers, especially when it's doubtful LA would even be able to keep data centers accountable for any negative impacts (again, altadena fires, lineage logistics fire, exide pollution, ecobat pollution, etc)

Thank you for your time,

-Caleb

**From:** [Edward Rojas](#)  
**To:** [Connie Chung](#)  
**Cc:** [Bruce Durbin](#); [Alyson Stewart](#)  
**Subject:** FW: Data Center  
**Date:** Wednesday, July 15, 2026 12:57:13 PM

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More...should I tell them to forward these to your section inbox instead?

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

---

**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Wednesday, July 15, 2026 12:52 PM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** Fw: Data Center

**BRYAN S. MOLLER**

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---

**From:** Emma Yee <[em.myeee27@gmail.com](mailto:em.myeee27@gmail.com)>  
**Sent:** Wednesday, July 15, 2026 11:16 AM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** Data Center

**CAUTION: External Email. Proceed Responsibly.**

Dear LA county council,

Please do not construct a data center in LA county, as this will have many negative effects. Our water supply will indefinitely run dry, exposing us to poor water quality for our everyday lives. Without enough water, we will not be able to have certain luxuries like taking average time showers, have clean water to drink, and even be exposed to viruses that cause various symptoms like diarrhea, fevers, and even death. There are already multiple cases of this in the United States, such as Texas, where a woman was arrested for just speaking out about this. I plead to you all to reconsider, as this will have many negative effects that outweigh the instant gratification of earning money from this data center, as soon enough, our water supply will not even meet the bare minimum requirement to be clean.

Thank you,  
Emma

**From:** [DRP Info](#)  
**To:** [DRP Ordinance Studies](#)  
**Subject:** FW: Data Center in Covina, CA  
**Date:** Thursday, July 16, 2026 6:25:51 PM

---

**DIANA GONZALEZ** (she/her/hers)

**PRINCIPAL PLANNER, Operations & Major Projects (OMP)**

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---

**From:** Elizabeth Gonzalez-Benedict <elizabethgbenedict27@gmail.com>  
**Sent:** Thursday, July 16, 2026 5:29 PM  
**To:** [DRP Info](#) <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** Data Center in Covina, CA

**CAUTION: External Email. Proceed Responsibly.**

Hello,

I am a local resident in Covina, CA and I am writing to inform you that I am very much against a Data Center being built in a residential community like Covina. There are many environmental impacts that a Data Center can create. Please do not destroy our community!

Regards,  
Elizabeth Benedict

**From:** [Edward Rojas](#)  
**To:** [DRP Ordinance Studies](#)  
**Subject:** FW: Concern about data centers near my home  
**Date:** Thursday, July 16, 2026 5:57:59 PM

---

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

---

**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Thursday, July 16, 2026 5:40 PM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** FW: Concern about data centers near my home

One more...

**DIANA GONZALEZ** (she/her/hers)

**PRINCIPAL PLANNER, Operations & Major Projects (OMP)**

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---

**From:** M <[tropical\\_blowfish@yahoo.com](mailto:tropical_blowfish@yahoo.com)>  
**Sent:** Thursday, July 16, 2026 12:22 AM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** Concern about data centers near my home

**CAUTION: External Email. Proceed Responsibly.**

Hello,

I live near a potential site for a data center and I am extremely concerned on the negative impact that it will have on my community, especially since it will be placed directly in the middle of a residential area, with schools nearby. I do not want to hear that our community is suffering medical and environmental issues down the road because of the data center and lack of listening to the residents who will be directly affected.

Please consider the lives that will be impacted. Please do not put a data center in our community, near the city of industry.

Thank you

[Sent from Yahoo Mail for iPhone](#)

**From:** [Edward Rojas](#)  
**To:** [DRP Ordinance Studies](#)  
**Subject:** FW: Comments for the LA County Data Center Study  
**Date:** Thursday, July 16, 2026 5:58:06 PM

---

**EDWARD ROJAS, AICP** (he/him/his)

**ASSISTANT DEPUTY DIRECTOR, Advance Planning Division**

---

**From:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Sent:** Thursday, July 16, 2026 5:49 PM  
**To:** Edward Rojas <[erojas@planning.lacounty.gov](mailto:erojas@planning.lacounty.gov)>  
**Subject:** FW: Comments for the LA County Data Center Study

**DIANA GONZALEZ** (she/her/hers)

**PRINCIPAL PLANNER, Operations & Major Projects (OMP)**

All official correspondence is issued solely from [dgonzalez@planning.lacounty.gov](mailto:dgonzalez@planning.lacounty.gov) and [donotreply@lacounty.gov](mailto:donotreply@lacounty.gov) email addresses. Communications from other domains are not affiliated with our organization and should not be treated as an official communication. Please also note that the County will never request funds via wire transfer.

---

**From:** Wing Cheung <[wing9389@gmail.com](mailto:wing9389@gmail.com)>  
**Sent:** Thursday, July 16, 2026 11:26 AM  
**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>  
**Subject:** Comments for the LA County Data Center Study

**CAUTION: External Email. Proceed Responsibly.**

Dear LA County Planning,

Thank you for conducting the Los Angeles County Data Center Study. As a resident, I respectfully request that the final report thoroughly evaluate the following issues before any future data center development is considered.

- The cumulative impacts of multiple existing and proposed data centers and battery energy storage systems (BESS), rather than evaluating projects individually.
- The impacts on nearby residential communities, schools, parks, and other sensitive

land uses, including Schabarum Regional Park.

- Electricity demand, grid reliability, and the potential costs to ratepayers.
- Water consumption for cooling and the long-term sustainability of water resources.
- Noise from 24/7 operations, cooling equipment, and backup generators.
- Air quality impacts, including emissions from diesel backup generators during testing and emergency operations.
- Fire and public safety risks, emergency response capabilities, and evacuation planning.
- Greenhouse gas emissions and consistency with the County's climate goals.
- Potential effects on property values, quality of life, and environmental justice for surrounding communities.
- Appropriate setbacks and buffer requirements between data centers, BESS facilities, and homes, schools, parks, and other sensitive uses.
- The need for transparent public engagement and full environmental review for future projects.

I am particularly concerned about the potential impacts on Schabarum Regional Park, a valuable public resource that provides recreation, walking trails, wildlife habitat, and open space for surrounding communities. Any study should evaluate how nearby industrial-scale facilities could affect the park's environment and the public's enjoyment of this important regional asset.

Please ensure that the final report reflects the concerns of residents and provides recommendations that prioritize public health, safety, environmental protection, and community well-being.

Thank you for considering my comments.

**From:** [Simon, Victoria](#)  
**To:** [Connie Chung](#); [Edward Rojas](#); [Aracely Lasso](#); [Keith Hala](#); [Minh Le](#); [Azar Kattan](#); [Nicholas Pisca](#); [Christine Montes](#)  
**Subject:** FW: [DCC] (Contact Form) Data Center Development in LA County  
**Date:** Monday, July 20, 2026 11:29:44 AM  
**Attachments:** [DCC Understanding Data Centers.pdf](#)  
[DCC Water Fact Sheet.pdf](#)  
[California 2026 Fact Sheet.pdf](#)  
[Follow Up Slides for LA County.pdf](#)

---

**CAUTION: External Email. Proceed Responsibly.**

Here's the follow up materials from our meeting with the Data Center Coalition. I'll also add it to the shared folder.

Victoria

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**From:** Khara Boender <Khara@datacentercoalition.org>  
**Sent:** Friday, July 17, 2026 12:23 PM  
**To:** Simon, Victoria <VSimon@cso.lacounty.gov>  
**Subject:** Re: [DCC] (Contact Form) Data Center Development in LA County

Hi again,

I am sharing some additional resources below and in the attached. Please don't hesitate to reach out if you have any questions or if setting up additional time to discuss would be helpful.

**Attached:**

- Slides providing an overview of:
  - Data center demand drivers;
  - Siting considerations for data center owners/operators;
  - Current and projected development across the U.S.
- Understanding Data Centers 101 Fact Sheet
- Water Fact Sheet
- California Economic Impacts Fact Sheet - the link to the full report for national and other state-level data is available [here](#).

**Additional Resources:**

- **Regarding Utility Rates:**
  - E3 - [Understanding the Drivers of Rising Electricity Rates and the Role of Data Centers](#)
    - E3's analysis shows rising energy costs are driven by five primary economic and policy factors beyond simply load growth, including:

- **Inflation:** Recent inflation has significantly increased the cost of labor, materials, and financing – directly increasing the amount of revenue utilities need to collect to recover their investments.
- **Grid Modernization:** Utilities have increased investment to replace aging infrastructure and modernize the grid.
- **Natural Gas Volatility:** Natural gas prices have become more volatile, and regions reliant on gas are particularly exposed to this dynamic.
- **Wildfire Mitigation and Resilience Investments:** Wildfire-related spending and grid hardening – the process of strengthening electrical infrastructure such as substations, electric wires, and poles – now represent a significant and growing share of utility spending to respond to extreme weather events.
- **Market Design and Supply Dynamics:** In wholesale markets such as PJM (serving 13 states and DC), capacity price volatility has also been driven by market design and supply-side factors, including power plant retirements, reduced accreditation of fossil resources, higher reliability targets, planning/forecasting gaps, regulatory lag, and interconnection backlogs.

■ Key findings include:

- Multiple studies show data centers can generate more revenue for utilities than it costs to serve them, helping to offset or lower costs for other customers.
- There is no consistent relationship between load growth and rising electricity rates at the state level.
- States with significant data center-driven demand growth, such as Texas and Virginia, have seen relatively modest rate increases. Meanwhile, states like California and New York have experienced higher prices despite declining load.

○ Lawrence Berkeley National Laboratory study

- Evidence from Lawrence Berkeley National Laboratory also shows that adding data centers to the grid can even help lower energy costs for other customers by putting “downward pressure on prices.” This information is

found on page 5 of the PDF version of the report.

- [January 2025 report](#) out of the California Legislative Analyst's Office found that there are "various reasons for high and growing rates", noting that while the specific reasons for California's relatively high rates have not been precisely quantified, some of the key factors include: significant and increasing wildfire-related costs, the state's ambitious greenhouse gas reduction programs and policies, and differences in utility operational structures and services territories. Many of these factors are particularly significant for customers of IOUs (as compared to those served by publicly owned utilities). Additionally, within a given utility, the rates that residential customers pay can vary widely. This is largely due to California's relatively robust cost-reduction programs for low-income households and rooftop solar customers, which are subsidized by other ratepayers who do not qualify for those discounts.
- **Regarding development standards:**
  - [Local Guidelines for Data Center Development](#) - this report from the Urban Land Institute Data Center Product Council might be a helpful starting point.
- **Findings from the 2024 Virginia Joint Legislative Audit & Review Commission (JLARC) [Report](#):**
  - [Air Quality](#): the report indicates that while data center backup generators emit pollutants, their use is minimal, and existing regulations largely curb impacts. There are approximately 8,000 generators statewide, and in FY23, the industry's actual emissions were only seven percent of allowed/permitted emissions. Federal and state regulations limit potential emissions from backup generators, even in worst case scenarios. Air quality in Northern Virginia has improved during same time industry has grown due to reductions in car and other emissions. In rare cases, a prolonged, large-scale outage could contribute to a temporary air quality issue, but air quality would return to normal after the event. The study notes that while intermittent use and low emissions levels are unlikely to have adverse impacts, DEQ recently launched a three-year monitoring study and has the authority to increase protections if/as needed.
  - [Environmental Impacts](#): the study indicates that data center construction impacts are similar to other large scale development impacts. JLARC notes that state and federal regulations require the mitigation of stormwater and wetlands impacts, but land conservation is at the discretion of localities.
  - [Sound](#): JLARC finds that data center sound is noticeable but quieter than many common sounds (jets, lawn mowers, conversations at three feet) and is not harmful to human hearing. The report indicates that sound (typically a "drone" or "hum") has been an issue for a minority of data centers – only some data centers are audible past the property line, and it is only a problem when development is close to residential areas. JLARC also observes that localities can take steps to mitigate the impact of data center sound. JLARC recommends that the General

Assembly consider expressly authorizing localities to require sound modeling studies prior to project approval.

- Water: the report finds that data center water use is currently sustainable and that the state ensures future sustainability through regulation. In 2023, 83 percent of data centers used the same amount of water (or less) than an average large office building.

Hope you have a great weekend!

Best,

Khara

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**From:** Simon, Victoria <[VSimon@cso.lacounty.gov](mailto:VSimon@cso.lacounty.gov)>

**Sent:** Thursday, July 16, 2026 9:16 PM

**To:** Khara Boender <[Khara@datacentercoalition.org](mailto:Khara@datacentercoalition.org)>

**Subject:** RE: [DCC] (Contact Form) Data Center Development in LA County

Thank you so much Khara. We appreciated you taking the time to speak with us and look forward to receiving that follow up information.

Best,

Victoria

---

**From:** Khara Boender <[Khara@datacentercoalition.org](mailto:Khara@datacentercoalition.org)>

**Sent:** Wednesday, July 15, 2026 11:46 AM

**To:** Simon, Victoria <[VSimon@cso.lacounty.gov](mailto:VSimon@cso.lacounty.gov)>

**Subject:** Re: [DCC] (Contact Form) Data Center Development in LA County

Hi Victoria,

Wanted to follow up here as I've been delayed in pulling together resources in follow up to our conversation — still hoping to have those over to you by the end of the week. Apologies for that.

Thanks again for the discussion last week.

Best,

Khara

---

**From:** Simon, Victoria <[VSimon@cso.lacounty.gov](mailto:VSimon@cso.lacounty.gov)>  
**Sent:** Wednesday, June 24, 2026 1:37 PM  
**To:** Khara Boender <[Khara@datacentercoalition.org](mailto:Khara@datacentercoalition.org)>  
**Cc:** Dan Diorio <[dan@datacentercoalition.org](mailto:dan@datacentercoalition.org)>  
**Subject:** RE: [DCC] (Contact Form) Data Center Development in LA County

Thanks so much. Enjoy your time off and speak to you soon.

Victoria

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**From:** Khara Boender <[Khara@datacentercoalition.org](mailto:Khara@datacentercoalition.org)>  
**Sent:** Wednesday, June 24, 2026 1:19 PM  
**To:** Simon, Victoria <[VSimon@cso.lacounty.gov](mailto:VSimon@cso.lacounty.gov)>  
**Cc:** Dan Diorio <[dan@datacentercoalition.org](mailto:dan@datacentercoalition.org)>  
**Subject:** Re: [DCC] (Contact Form) Data Center Development in LA County

Thanks, Victoria. I just shared a calendar invitation for 2 PM PT on Wednesday, July 8.

Best,

Khara

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**From:** Simon, Victoria <[VSimon@cso.lacounty.gov](mailto:VSimon@cso.lacounty.gov)>  
**Sent:** Wednesday, June 24, 2026 3:02 PM  
**To:** Khara Boender <[Khara@datacentercoalition.org](mailto:Khara@datacentercoalition.org)>  
**Cc:** Dan Diorio <[dan@datacentercoalition.org](mailto:dan@datacentercoalition.org)>  
**Subject:** RE: [DCC] (Contact Form) Data Center Development in LA County

Thank you so much for the quick response. Below are some dates/times:

Monday July 6 12:30pm – 2:30pm; 4pm PST

Tuesday July 7 1pm or 4pm PST

Wednesday July 8 11am – 2:30pm or 4pm PST

Thursday July 9 9:30am -12:30pm; 2:30pm PST

Friday July 10 10am – 1pm PST

Let me know if one of those slots works well for you.

Best,

Victoria

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**From:** Khara Boender <[Khara@datacentercoalition.org](mailto:Khara@datacentercoalition.org)>  
**Sent:** Wednesday, June 24, 2026 11:47 AM  
**To:** Simon, Victoria <[VSimon@cso.lacounty.gov](mailto:VSimon@cso.lacounty.gov)>  
**Cc:** Dan Diorio <[dan@datacentercoalition.org](mailto:dan@datacentercoalition.org)>  
**Subject:** Re: [DCC] (Contact Form) Data Center Development in LA County

Hi Victoria,

Thank you for reaching out to us. I'm a director of state policy at the Data Center Coalition and would welcome the opportunity to connect over a virtual call. I am on PTO tomorrow through the July 4 holiday — would it be possible to set up some time to speak the following week? If you let me know some dates/times where you are available, I can confirm on my end and share a calendar invitation.

Thanks again,

Khara

---

**From:** Data Center Coalition <[membership@datacentercoalition.org](mailto:membership@datacentercoalition.org)>

**Sent:** Wednesday, June 24, 2026 11:31 AM

**To:** Amanda González <[amanda@datacentercoalition.org](mailto:amanda@datacentercoalition.org)>

**Subject:** [DCC] (Contact Form) Data Center Development in LA County

You have received a new email message from your contact form.

**Subject:** [DCC] (Contact Form) Data Center Development in LA County

**From:** Victoria Simon [vsimon@csso.lacounty.gov](mailto:vsimon@csso.lacounty.gov)

**Body of Email:**

Hi my name is Victoria Simon and I work for the LA County Chief Sustainability Office. We are preparing a report for the LA County Board of Supervisors with findings and recommendations regarding data center development in LA County, and we are interested in speaking with developers and operators to understand their perspective. We have hosted multiple community meetings but thus far, have not had a chance to hear from the data center industry itself. We would very much appreciate the opportunity to connect.



# California Data Centers: Driving the Digital Economy

## Employment and Labor Income

**145,820 direct jobs** in the California data center market in 2024

**665,500 total employment contribution** in 2024 (including direct, indirect, and induced effects)

**\$88.2 billion** total contribution to labor income in 2024 (including direct, indirect, and induced effects)

## GDP and Taxes

Including direct, indirect, and induced effects, the data center industry contributed **\$159.2 billion to California GDP** in 2024—a **21% increase** since 2023.

The industry's **total tax contribution** to state and local governments in California was **\$14.1 billion** in 2024.

In total, the data center industry directly and indirectly contributed **\$9.8 billion in taxes to California's state government** and **\$4.4 billion in taxes to local governments in California** in 2024.

The latest government spending data suggest that the data center industry's total state and local tax contribution of \$14.1 billion in 2024 would have been sufficient to fund over one-fifth of the state's higher education expenditures, including degree granting institutions which provide academic training above grade 12.



### Industries enabled by data centers include:

**Advanced Manufacturing | Cybersecurity | E-commerce | Education | Financial Services  
Government Services | Healthcare | Public Safety | Remote Work**

## U.S. Data Center Industry

**1,005,080 direct jobs** in 2024

**5.5 million in total employment** in 2024—17% increase from 2023

**\$525.3 billion in total labor income** in 2024—22% increase from 2023

Each job in the data center industry supports **more than 4.5 jobs** elsewhere in the economy.

**\$926.9  
BILLION**

**total contribution to U.S.  
GDP in 2024**

**\$204.4  
BILLION**

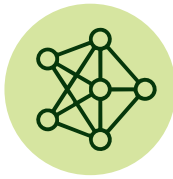
**total tax contribution to federal,  
state, and local governments in 2024**

*Source: PwC, "Economic Contributions of Data Centers in the United States, 2023-2024," May 2026.*

# Understanding Data Centers

## Essential Infrastructure for Modern Life

### What is a Data Center?



Data centers are buildings that house the internet. They are the foundation of the digital infrastructure on which our modern society and economy are built. Anything that takes place “in the cloud” is powered by a data center. They enable our increasingly modern lives and the 21st-century economy.

### What Data Centers Enable



Internet Apps



Telehealth



Online Banking



Video Calls



Streaming



Digital Learning



Cloud Services



Artificial Intelligence

### Why Data Centers Matter



**Core of the  
Digital Economy**

Power the storage and processing of data that enables e-commerce, cloud services, and essential digital services.



**Public Safety &  
National Security**

Support government operations, emergency services, defense, and public safety systems.



**Reliable &  
Resilient  
by Design**

Built for 24/7 operation, even during utility outages, to ensure access to essential data and services continues.

### Types of Data Centers



**Hyperscale**

Large-scale facilities that support cloud providers and global digital services



**Multitenant**

Shared facilities where multiple organizations house their servers and data



**Enterprise**

A privately-owned data center used by a single organization for internal data processes



**Edge**

Facilities located closer to end-users to support real-time services

## Local & Economic Impacts



Data centers bring billions of dollars in investment to communities, support high-wage jobs, and contribute tax dollars that help fund local priorities, making communities stronger and everyday life more affordable.



### Jobs Supported

Data centers contributed **5.5 million** total jobs to national employment in 2024, including construction, operations, suppliers, and other roles across the economy.



### Construction & Skilled Trades

Data centers create opportunities for electricians, HVAC and fiber technicians, equipment specialists, construction workers, and other skilled trades.



### Tax Revenue & Local Priorities

The data center industry contributed **\$204 billion** in federal, state, and local taxes in 2024, supporting schools, transportation, public safety, infrastructure, and other local priorities.



### Economic Growth

Data center investment supports economic growth, contributing **\$302 billion** to U.S. GDP in 2024.

## Industry Commitments



Data centers are highly efficient users of energy and water, with operators continually investing in technologies and practices that support reliability, conservation, and responsible growth.



### Energy

The data center industry pays its own costs for the electricity it uses, and coordinates closely with utilities to support grid reliability.



### Water

The data center industry is committed to responsible water use through ongoing investment in water-conserving practices and innovative cooling solutions.

### About DCC

The Data Center Coalition (DCC) is the national membership association for leading data center owners and operators, as well as large end users. As the voice of the industry, DCC advocates for a strong business climate, as well as policies and investments that support the growth and success of the sector.

### Contact Us

[www.datacentercoalition.org](http://www.datacentercoalition.org)



## Data Centers and Water Use

The data center industry is committed to responsible water use, and it prioritizes efficient water practices and responsible management across operations and development. Collectively, the data center industry used significantly less water than other essential industries in 2025, including the agriculture, power, food and beverage, and semiconductor sectors.

The data center industry continues to invest in water management and deploy water efficiency practices through air-cooled systems, closed-loop water recycling, and dry cooling technologies. DCC member companies are also piloting advanced solutions, including AI-driven cooling optimization and on-site water recycling systems, to further reduce consumption and maximize water efficiency.

### The Facts on Data Center Water Use

- According to the [Joint Legislative Audit and Review Commission](#) (JLARC) in Virginia, the world's largest data center market, 83% of data centers use as much, if not less, water than a large commercial office building. The report also found data center water use in the state is sustainable.
- A [Bluefield Research report](#) found that data centers are estimated to use approximately 39 billion gallons per year (BGY) of water in 2025. That is compared to:
  - Utility water leakage: 2,500 BGY—18% of municipal treated water is lost to leakage
  - Food and beverage industry: 533 BGY
  - Semiconductor industry: 59 BGY
- A recently released report from [Kyl Center for Water Policy at Arizona State University](#) showed that data centers in Arizona are estimated to use less acre-feet of water than:
  - Power generation
  - Semiconductor manufacturing (which has a significant presence in the state)
  - Sand & gravel mining
  - Golf courses
  - Beverage facilities
- [Research finds](#) that data centers in the U.S. consumed approximately 0.2% of the nation's freshwater in 2023.
- The [Houston Advanced Research Center \(HARC\) report](#) estimates that between direct (on-site cooling) and indirect (electricity generation) water consumption, existing data centers in Texas consume approximately 25 billion gallons (or 77,000 acre-feet) of water—**the equivalent of 0.4% of total water use in Texas in 2025.**



## Key Context for Data Center Cooling & Associated Water Use

Servers generate heat and require cooling. Many technologies, such as air cooling, water cooling, or some combination, can help keep data center server halls at the right temperature and humidity. There is no one-size-fits-all solution for cooling, and the best approach often depends on local factors, such as humidity, climate/temperature, and availability of water, including recycled, non-potable, or harvested rainwater sources.

### Types of Cooling

#### Air cooling

- Air cooling uses air conditioning, fans, and vents to circulate ambient air, expelling the hot air produced by computing equipment. It's the most traditional cooling method.

#### Liquid cooling

- Liquid cooling systems use coolants, including water, that circulate through a pipe network, absorbing heat away from IT equipment.
- Many data centers who employ liquid cooling use a closed-loop system, where an initial input of water is cycled through the system repeatedly without the need for additional water to be added.

#### Immersion cooling

- Immersion cooling directly submerges IT infrastructure components in dielectric fluids that cool by absorbing heat. Servers, which are kept in nonconductive, absorbent fluids, provide effective heat management.

#### Evaporative cooling

- Evaporative cooling uses fans to draw outside air in, cooling it before deploying it to cool IT equipment. Through water evaporation, this method draws heat away from the air efficiently.

#### Hybrid cooling strategy

- A hybrid cooling approach integrates multiple cooling technologies to optimize thermal management based on specific IT equipment demands.

### The Bottom Line

The Data Center Coalition and our members support responsible data center growth across the nation. These facilities are a small share of local and statewide water use, and with modern cooling technology and local planning, we can protect water resources while continuing to grow jobs and investment.

### About DCC

The Data Center Coalition (DCC) is the membership association for leading data center owners and operators, as well as large end users. As the voice of the industry, DCC advocates for a strong business climate, as well as policies and investments that support the growth and success of the sector.

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### Contact Us

[www.datacentercoalition.org](http://www.datacentercoalition.org) | [info@datacentercoalition.org](mailto:info@datacentercoalition.org)



# Data Centers:

**Powering the Internet and our Modern Economy**



# 2 Main Types of Data Centers

## **Self-Perform/Enterprise**

Business owns/controls servers and peripherals, may own facility

## **Multitenant and Build to Suit**

Facility owner leases to one or multiple tenants

# Data Center Basics

- Building Shell
- Interior Space
- Security
  - Exterior
  - Interior
  - Cyber
- Servers
- Fiber/Networking Connectivity
- Reliable Power 24/7
- HVAC/Cooling

# Why Data Centers?

- Tremendous Capital Investment
- Big Driver of Tax Revenue
- High Wage Jobs, Low Demand on Services
- Substantial Construction Jobs and Activity
- Building and Strengthening Tech Ecosystem
- Catalyst for Renewable Energy

# New Products/Experiences/Applications Drive Demand

- Cloud
- Business Apps
- Generative AI
- Entertainment and Gaming
- Internet of Things/Connected Devices
- Streaming Video

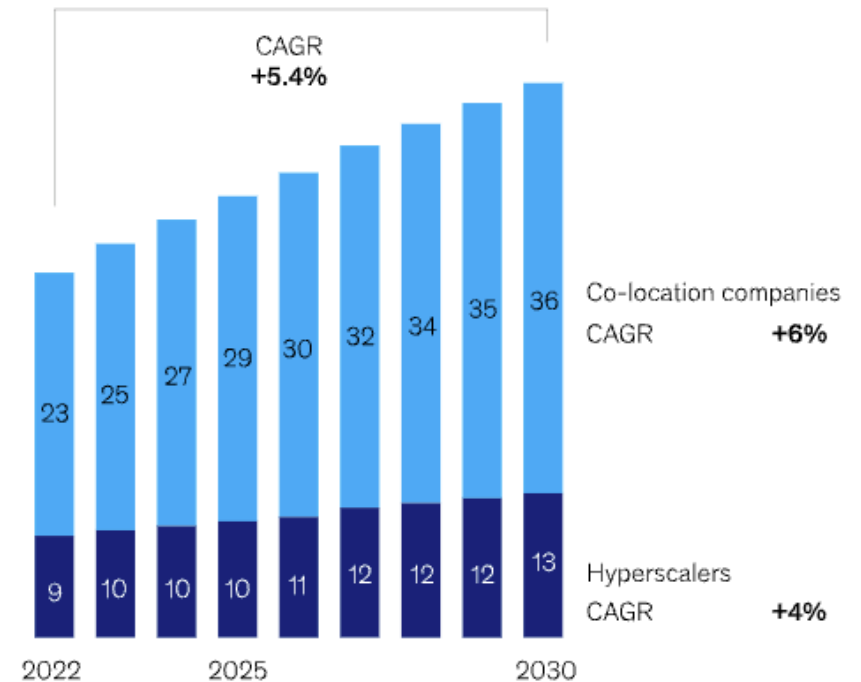
- Virtual and Augmented Reality
- eCommerce
- Machine Learning
- Payment Processing
- Online Learning
- Connected Vehicles and Autonomous Driving
- Innovation!

# Increasing Data Center Demand

- In the US market alone, demand—measured by power consumption to reflect the number of servers a data center can house—is expected to reach **80 gigawatts (GW) by 2030**, up from 25 GW in 2024, according to McKinsey & Company.
- The United States accounts for roughly **40 percent** of the global market.

Global spending on the construction of data centers is forecast to reach \$49 billion by 2030.

Data center construction spending,<sup>1</sup> \$ billion



<sup>1</sup>Includes construction spending by providers. Excludes enterprise spending and any other capital expenditure outside of construction (such as equipment).  
Source: Synergy Research Group

McKinsey & Company



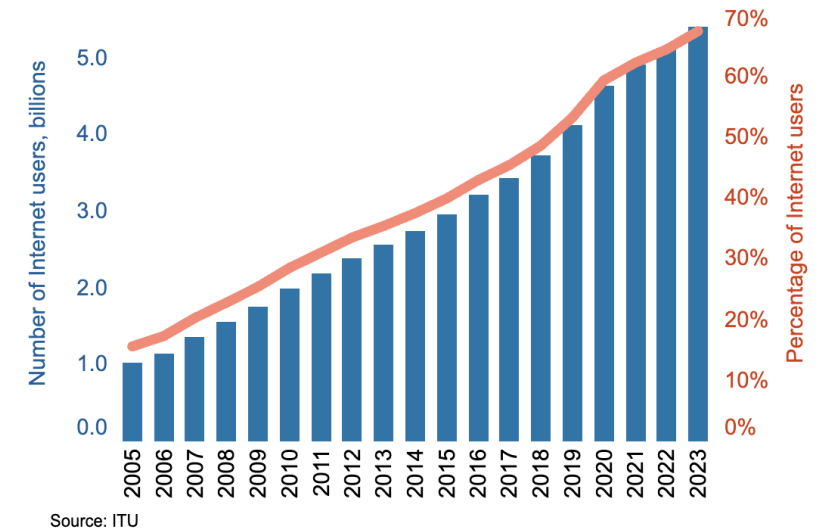
# Number of People/Devices Drives Data Center Demand

"The data center industry has experienced explosive growth over the past decade, driven by ever-increasing demand for cloud services and the expanding use of web-enabled devices globally. [...] **In the next five years, consumers and businesses will generate twice as much data as all the data created over the past 10 years.**"

-JLL, *Data Centers 2024 Global Outlook*

## More People Are Getting Online

- Approximately 5.4 billion people - or 67% of the global population - are online today. This represents an **increase of 45% since 2018**. 2.6 billion people are not yet connected to the internet.
- On average, U.S. households have a total of **21 connected devices**.



Sources: JLL, *Data Centers 2024 Global Outlook*, <https://www.us.jll.com/content/dam/jll-com/documents/pdf/research/global/jll-data-center-outlook-global-2024.pdf>

International Telecommunication Union, <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

Deloitte "Shiny new devices may be bringing joy, but who's protecting consumer data?", January 23, 2023 <https://www2.deloitte.com/us/en/insights/industry/technology/consumer-data-privacy.html>

# What Drives Data Center Demand?

## Brookfield

### Data Center Demand for Cloud vs. AI Training and Interface

Total Global Installed Base (GW)



Source: Brookfield internal research

Source: Brookfield, LinkedIn, December 2025, [https://www.linkedin.com/posts/brookfield\\_ai-data-center-capacity-is-projected-to-grow-activity-7401670262233911296-vdki?utm\\_source=share&utm\\_medium=member\\_desktop&rcm=ACoAAAV\\_ci4BPkOJbXob-Y75uZVwxo7IbW0YCow](https://www.linkedin.com/posts/brookfield_ai-data-center-capacity-is-projected-to-grow-activity-7401670262233911296-vdki?utm_source=share&utm_medium=member_desktop&rcm=ACoAAAV_ci4BPkOJbXob-Y75uZVwxo7IbW0YCow)

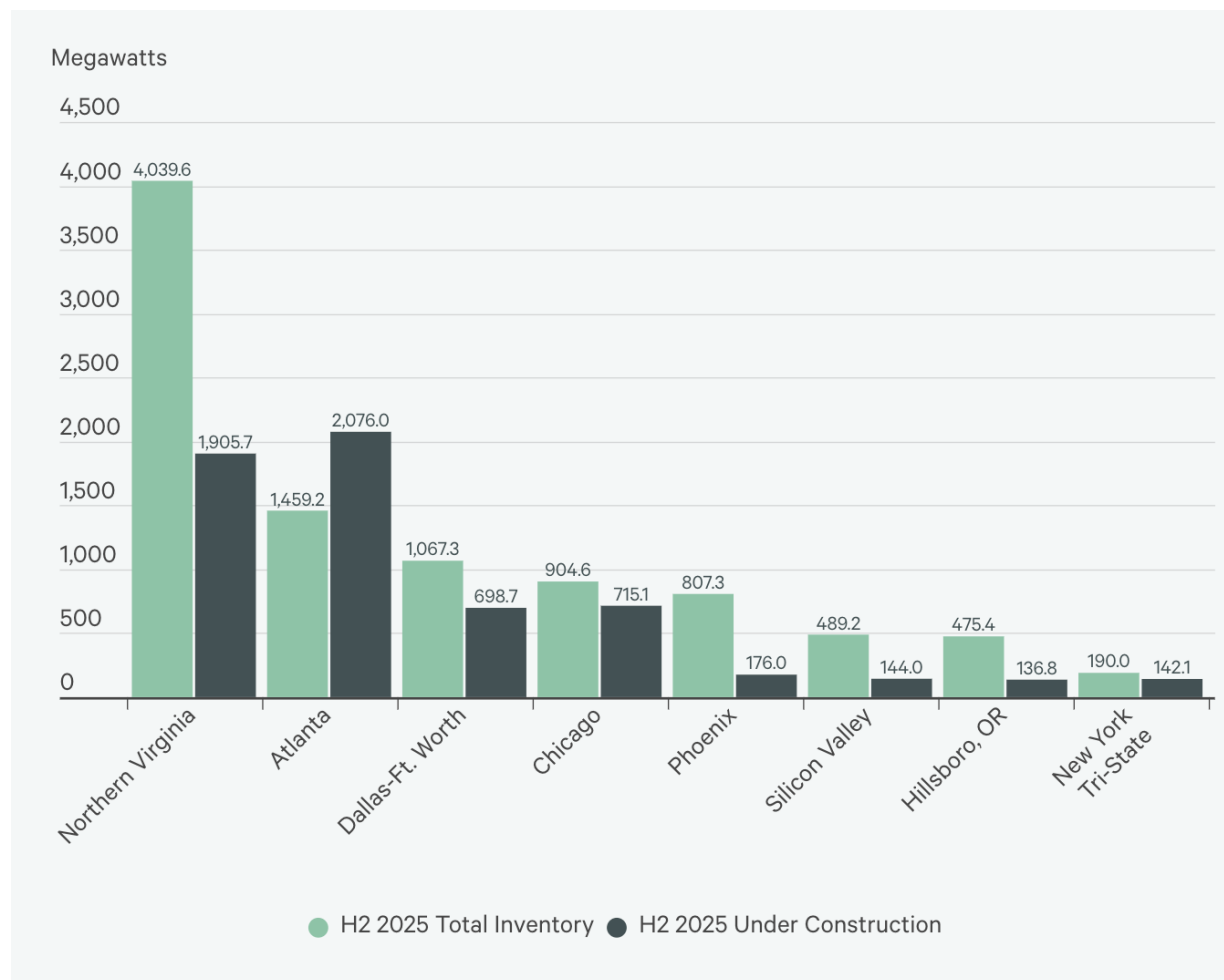


# Key Siting Considerations Include

- Time to Market
- Access to Fiber/Connectivity
- Access to Water for Industrial Purposes
- Access to Clean, Reliable, Affordable Energy
- Climate and Risk of Natural Disaster
- Land Availability and Cost
- Tax and Regulatory Climate
- Ownership/Occupancy Costs
- Access to Skilled Construction and Technology Workforce

# Data Center Trends

Figure 6: Total Inventory vs. Under Construction by Primary Market, H2 2025

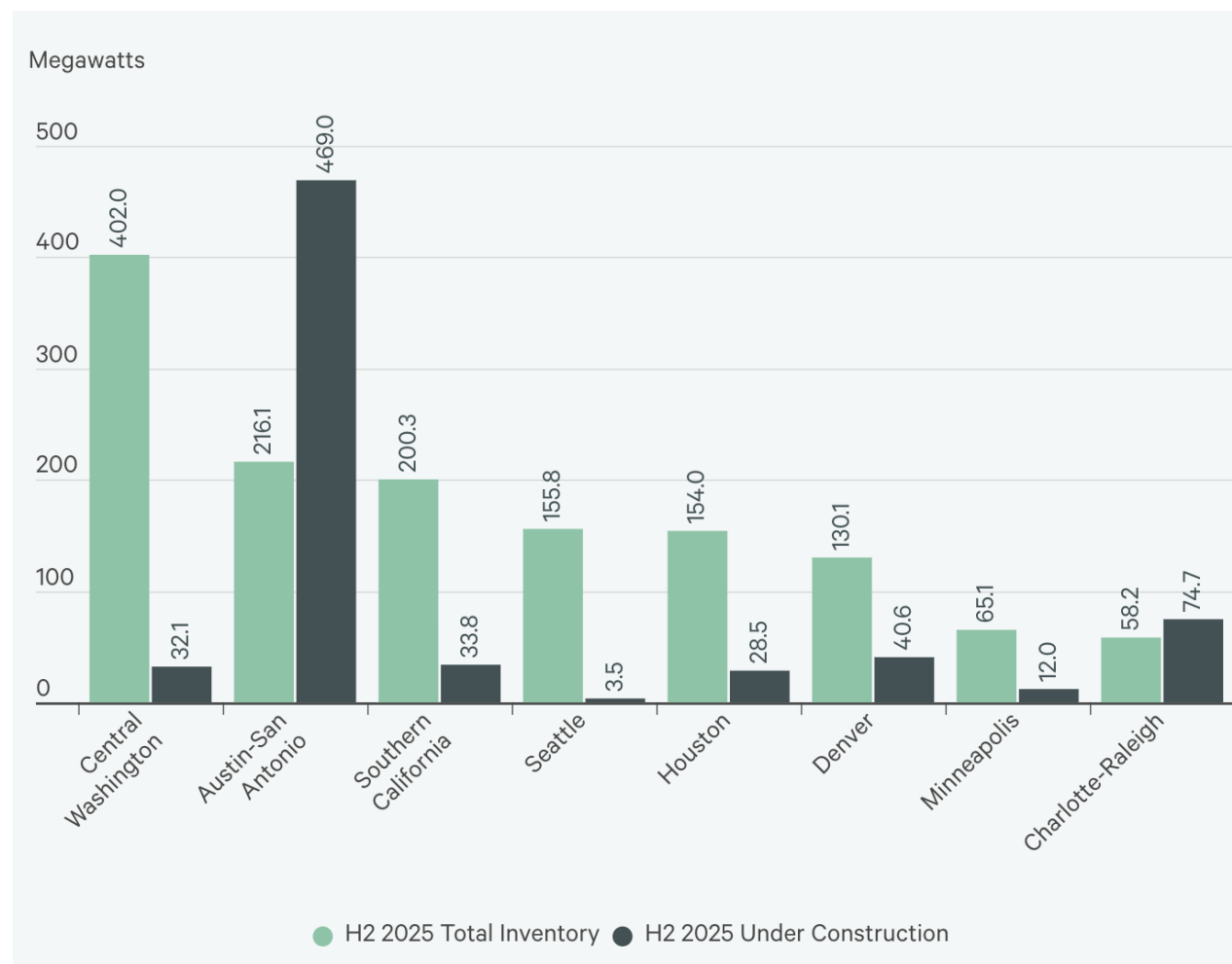


Source: CBRE Research, CBRE Data Center Solutions, H2 2025.



# Data Center Trends

Figure 7: Total Inventory vs. Under Construction by Secondary Market, H2 2025

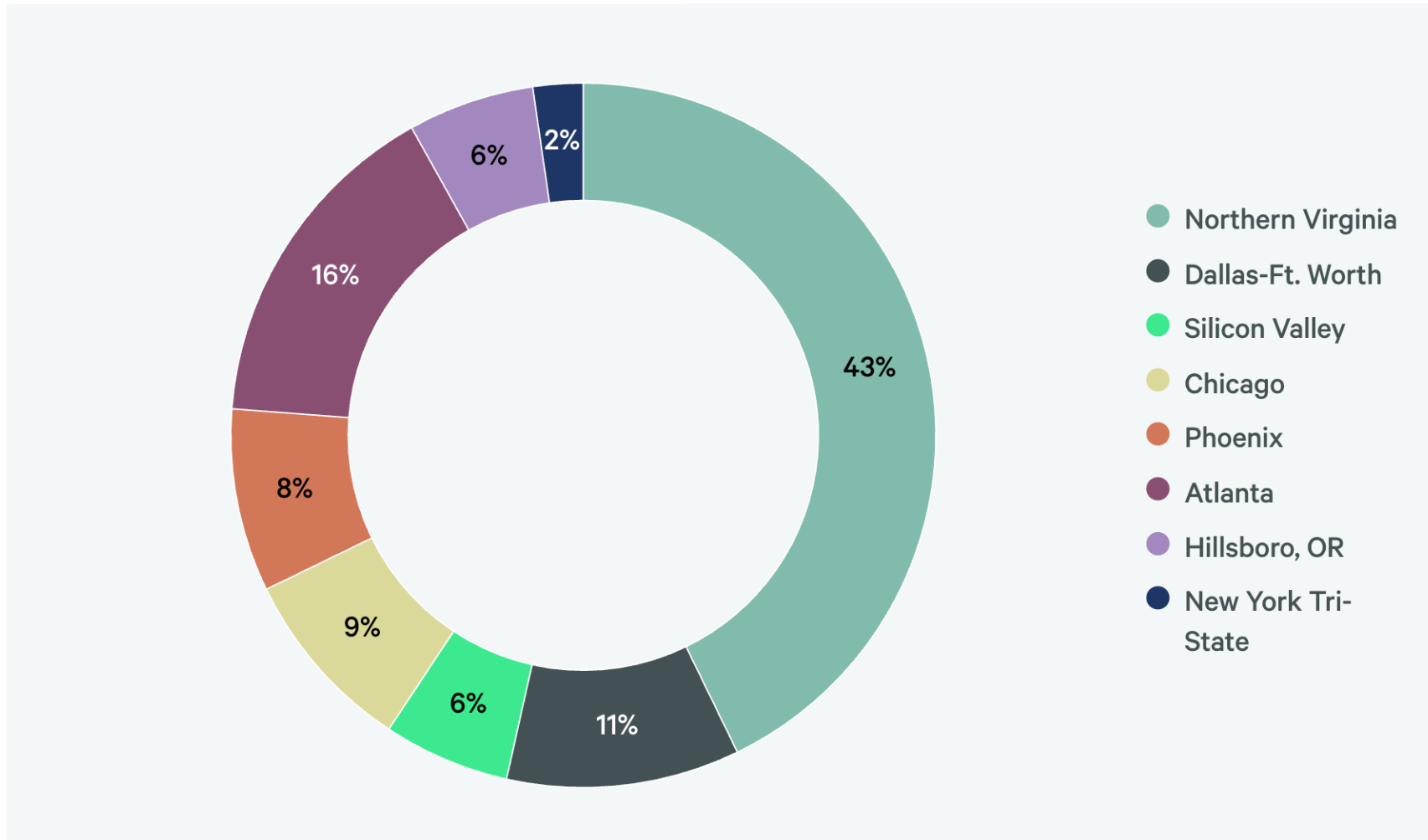


Source: CBRE Research, CBRE Data Center Solutions, H2 2025.



# Data Center Trends

Figure 3: % of Total Primary Market Inventory



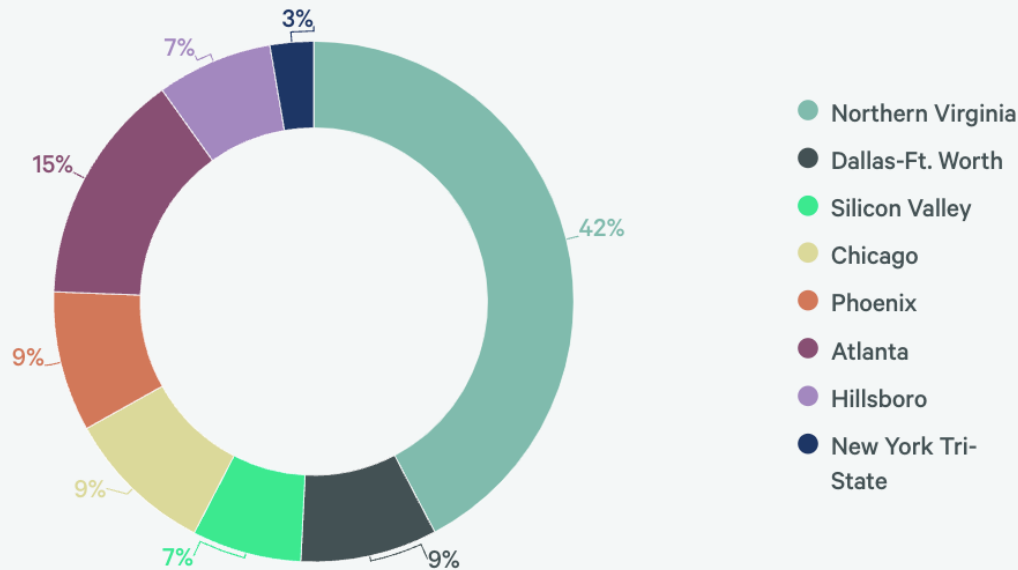
Source: CBRE Research, CBRE Data Center Solutions, H1 2025.



# Data Center Trends

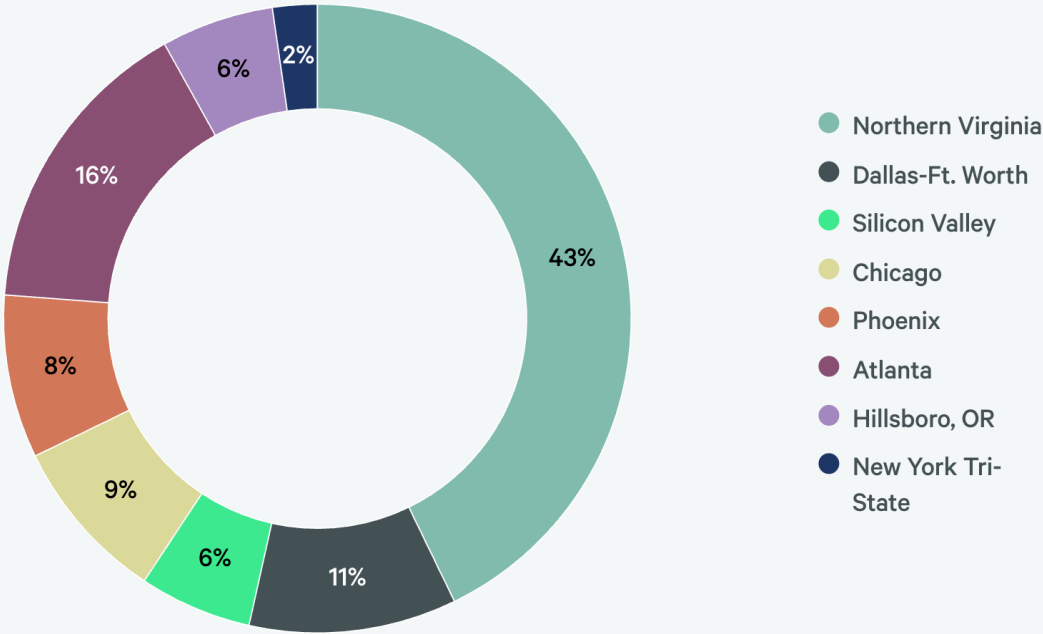
Figure 3: % of Total Primary Market Inventory

H2 2024



Source: CBRE Research, CBRE Data Center Solutions, H2 2024.

H1 2025

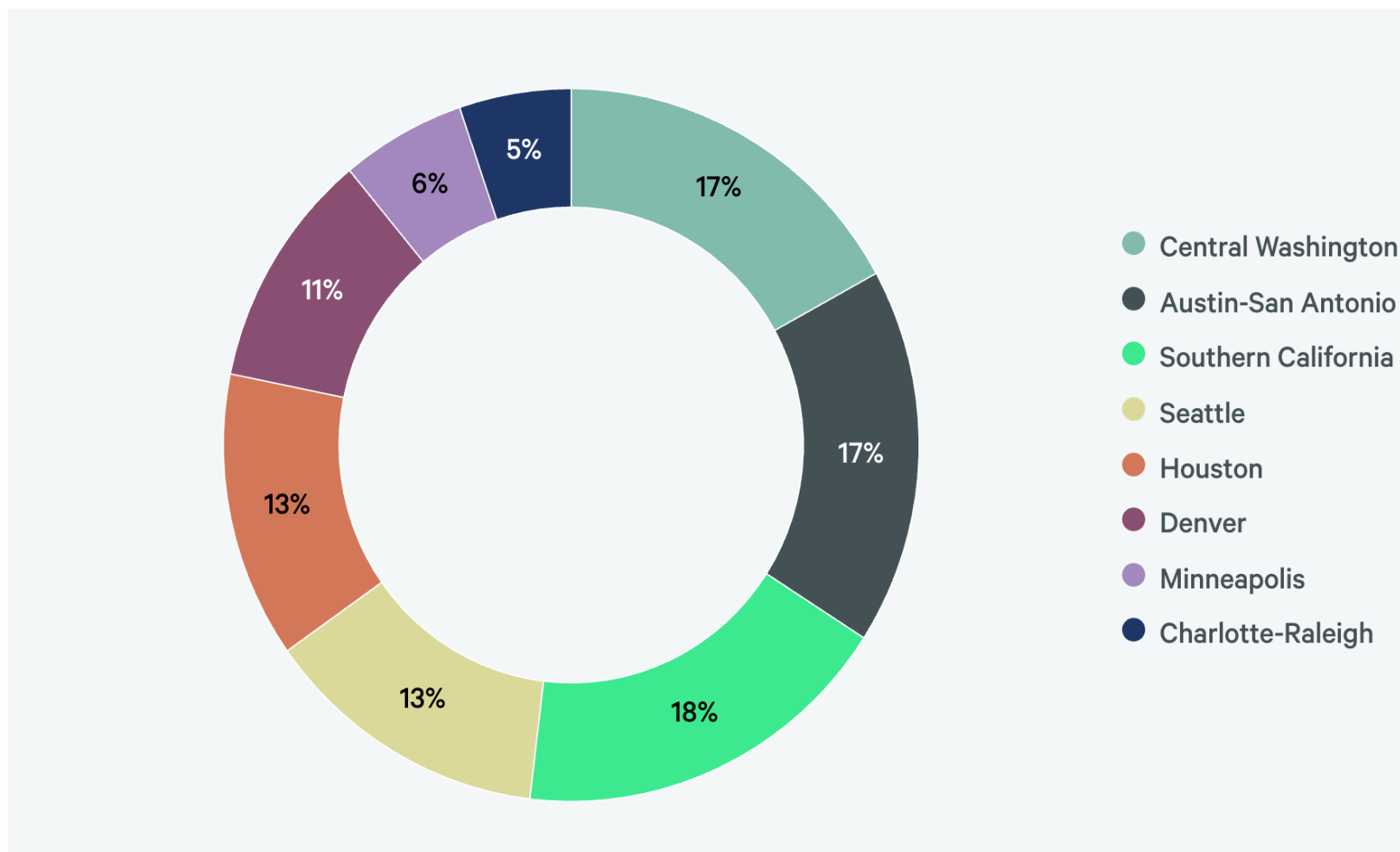


Source: CBRE Research, CBRE Data Center Solutions, H1 2025.



# Data Center Trends

Figure 3: % of Total Secondary Market Inventory



Source: CBRE Research, CBRE Data Center Solutions, H1 2025.



**From:** [chao-ying Wang](#)  
**To:** [Connie Chung](#)  
**Cc:** [dennis Fox](#)  
**Subject:** Data centers  
**Date:** Monday, July 20, 2026 5:22:39 PM

---

**CAUTION: External Email. Proceed Responsibly.**

Dear Ms. Chung,

My husband and I are residents of Rowland Heights. We got your name and email address from a neighbor of ours.

As most of the residents in the vicinity of the City of Industry feel very concerned and troubled by the upcoming plan of setting up a data center in the City of Industry where the Puente Hills Mall used to be. The location where the Puente Hills mall used to be is right at the business center of the city, populated with businesses and residential houses. In addition, there are adjacent cities and areas are similarly highly populated, which include Avocado Heights, Hacienda Heights, Rowland Heights, West Covina, La Habra Heights and Diamond Bar, to name a few surrounding cities and unincorporated areas. We are all aware of the health hazardous of such Centers impose on the residents nearby, and the draining of resources of water and power which make life even harder and more challenging around here. Another natural consequence is that the property values will also be negative impacted. The list goes on. No one in one's right mind would support such an imposing hazardous establishment in their city. As residents of the unincorporated areas we feel more vulnerable, less advantaged, that our voices and inputs will be heeded to by the Los Angeles County government.

Despite of all the currently less than optimistic circumstances of ours, we attempt at expressing our feelings and concerns.

Thank you for your time and consideration.

Respectfully,

Chao-Ying Wang and Dennis Fox  
909-720-9201, 949-910-6684

2248 Annadel Ave  
Rowland Heights, CA 91748

**From:** [DRP Info](#)  
**To:** [DRP Ordinance Studies](#)  
**Subject:** Fw: Data Center Study  
**Date:** Wednesday, July 22, 2026 6:41:58 AM

---

## BRYAN S. MOLLER

### SENIOR PLANNER, Operations & Major Projects

Office: (213) 974-6411 • Direct: (213) 893-7411

*Please note that our office is closed on Fridays.*

All official correspondence is issued solely from [\[Name\]@planning.lacounty.gov](#) and [donotreply@lacounty.gov](#) email addresses. Communications from other domains are not affiliated with our organization and should not be treated as an official communication. Please also note that the County will never request funds via wire transfer.

---

**From:** Patricia Quilizapa <pattyquilizapa@gmail.com>

**Sent:** Wednesday, July 22, 2026 6:06 AM

**To:** DRP Info <info@planning.lacounty.gov>

**Subject:** Data Center Study

### **CAUTION: External Email. Proceed Responsibly.**

Please include the following analysis in your upcoming study on data centers:

- 1) for each retail water provider, how specifically would they meet the additional water demand;
- 2) how would the additional water use affect the total overdraft in each underground basin;
- 3) in areas with existing low air quality (such as the southeast 710 corridor), how would a data center impact the air quality;
- 4) is the local fire department capable of  
Putting out a potential fire, such as the recent fire in Boyle Heights; and
- 5) for noise pollution studies, include examples of the potential noise levels—not just decibel levels.

Thanks,  
Patty

**From:** [Fernando Ochoa](#)  
**To:** [Connie Chung](#); [Edward Rojas](#)  
**Cc:** [Jeremy Zeedyk](#); [Joe Sullivan](#)  
**Subject:** EPRI Data Center Study on Utility Rates  
**Date:** Thursday, July 30, 2026 8:55:46 AM  
**Attachments:** [image.png](#)

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**CAUTION: External Email. Proceed Responsibly.**

Connie and Edward,

Thanks again for taking the time to chat with us.

Sending along the [Electric Power Research Institute \(EPRI\) brief](#) on their recent study, which found "Causal evidence suggests that data centers modestly lowered U.S. retail electricity rates from 2015 to 2024."

I thought this would be good to include in the report-back. Thank you.

Best,

*Fernando Ochoa*

**Political Director**



2120 Auto Centre Drive  
Glendora, CA 91740-6720  
Office: 909-305-2800  
Cell: 562-308-6926

**From:** [DRP Info](#)  
**To:** [DRP Ordinance Studies](#)  
**Subject:** FW: Please include our oppositions to data center and Bess in your upcoming planning report  
**Date:** Thursday, July 23, 2026 5:31:04 PM

---

**DIANA GONZALEZ** (she/her/hers)

**PRINCIPAL PLANNER, Operations & Major Projects (OMP)**

All official correspondence is issued solely from [dgonzalez@planning.lacounty.gov](mailto:dgonzalez@planning.lacounty.gov) and [donotreply@lacounty.gov](mailto:donotreply@lacounty.gov) email addresses. Communications from other domains are not affiliated with our organization and should not be treated as an official communication. Please also note that the County will never request funds via wire transfer.

---

**From:** Peggy C <moyjasper88@gmail.com>  
**Sent:** Thursday, July 23, 2026 4:43 PM  
**To:** [DRP Info <info@planning.lacounty.gov>](mailto:info@planning.lacounty.gov)  
**Subject:** Please include our oppositions to data center and Bess in your upcoming planning report

**CAUTION: External Email. Proceed Responsibly.**

To Planning Department of LA County

My name is Peggy Chan, a resident of Rowland Heights. I have been attending our community meetings since I am very concerned about the unfavorable environmental impact about data center and BESS projects proposed by City of Industry.

Data centers and Bess consume a lot of water and electricity. But the most concerning issues are their potential fire hazards and risks to residents and first responders.

Data Center and BESS projects should be established far from residential areas, and they also should build their own infrastructure including transportation roads, electrical grid and secure their own water supply.

I had joined one of the webinars by LA county couple months ago. Overwhelming

everyone who join the webinars object data centers and Bess project around here, which is a highly populated residential areas.

We are law abiding citizens, paying taxes to our government and our cities and counties to do whats best for us.

Also please do a full environmental study and take a lot off efforts to make sure a responsible report would be presented to our public officials who represent us.

Your attention is much appreciated.

Regards,  
Peggy Chan



July 20, 2026

Attn: LA County Planning, County Fire Marshal, ISD - Energy and Environmental Services

Kenneth Hahn Hall of Administration

500 West Temple Street

Los Angeles, CA 90012

**Re: Feedback on the Data Center Study Motion “Addressing the Health and Environmental Impacts of Data Centers” (Agenda No. 10, April 14, 2026)**

To Whom It May Concern,

On behalf of Sheet Metal Workers (SMART) Local 105 and the thousands of members we represent throughout Los Angeles County, thank you for the opportunity to provide feedback on the Board’s motion directing County departments to study the health, environmental, and economic impacts of data centers. Our members install, test and balance, and maintain the mechanical and cooling systems at the core of these facilities. Our members also perform building envelope hardening to protect structures from extreme heat, wildfires, and other disasters. We submit this feedback as a labor stakeholder, subject-matter expert, and a partner in ensuring that data center development in the County proceeds responsibly.

SMART Local 105 supports the continued sustainable growth of data centers in Los Angeles County. Data centers are critical infrastructure that support our economy, healthcare, finance, education, and even public services in the County. With appropriate environmental safeguards and community benefits, Los Angeles County can become a leader in sustainable data center development while creating thousands of high-quality careers for local residents.

This growth can create a significant number of good construction careers for our members at a time when other segments of the construction industry are adversely affected by economic pressures. In fact, our out-of-work list in Los Angeles County has doubled over the last year. We are supporters of responsible development through regulatory guardrails, and we share the Board’s interest in protecting the health, environmental quality, and economic well-being of the communities in and around where these facilities are sited.

For that reason, we believe we can provide helpful guidance on design and maintenance of the mechanical systems our members install and service, which are central to reducing the water and energy impacts the Board’s motion identifies as primary community concerns. The standards we recommend below are the same standards that can also create good, lasting jobs in our communities.

We respectfully submit the following policy recommendations for the County’s consideration as it develops its findings and community benefits framework in response to this motion.

## Policy Recommendations

### 1. Require Low-Water Cooling System Designs

The County's findings should recognize that modern data centers increasingly utilize dry cooling, air-side and water-side economizers, and closed-loop hybrid cooling systems that reject heat through dry coolers rather than evaporative cooling towers. These technologies can dramatically reduce water consumption compared with conventional evaporative cooling tower systems. Depending on climate, system design, and operating conditions, water savings approaching 90% have been reported for dry-cooled and economizer-intensive designs. Because these systems reduce or eliminate reliance on evaporative cooling towers, they also substantially reduce cooling tower blowdown and the associated wastewater discharge.<sup>1</sup> We recommend that any standards framework the County adopts allow projects that commit to these lower-water cooling architectures, particularly given the water supply concerns residents have raised in the San Gabriel Valley and elsewhere in the County.

### 2. Require at least Triennial Testing, Adjusting, and Balancing (TAB) and Independent Verification of Mechanical System Performance for Existing and New Data Centers

The County should require that existing and new centers perform at least triennial testing, adjusting, and balancing (TAB), per 2025 ANSI/ASHRAE Standard 62.1 Section 8, of mechanical systems by qualified technicians certified by industry-recognized certifying agencies, such as the Testing, Adjusting and Balancing Bureau (TABBB), Associated Air Balance Council (AABC), and National Environmental Balancing Bureau (NEBB), per California Mechanical Code Section 403.10. Poorly maintained mechanical systems are a primary cause of inefficiency, and certified professionals performing this regular maintenance can address problems caused by inefficient systems.

These technicians shall complete Ventilation Verification and Energy Optimization Assessment forms based on National Energy Management Institute (NEMI) templates<sup>2</sup>, with SMART Local 105, the Western States Council (WSC) of SMART, and the County adapting them to meet regional requirements. Data center operators shall then submit these triennial forms to the County to ensure transparency. Independent third-party verification by properly certified technicians is the only way to confirm that a data center's cooling systems are actually achieving their designed water and energy performance, rather than relying solely on developer projections made at the permitting stage.

### 3. Attach Enforceable Labor Standards to Any County Approvals

Any project approved by the County should be paired with enforceable local hire requirements, payment of prevailing wages, use of state-registered apprentices, and a skilled and trained workforce as defined in the California Public Contract Code. This protects the living-wage, local-hire goals reflected in the Board's motion and ensures these facilities translate into accountable local employment. This also ensures that a skilled and trained workforce is building these highly complex facilities, and installing and maintaining these systems to design intent.

### 4. Require a Project Labor Agreement or Community Workforce Agreement Covering All Prime and Subcontractors

We recommend that the County require data center developers to enter into a Project Labor Agreement (PLA) or Community Workforce Agreement (CWA) covering all prime contractors and subcontractors on the construction and maintenance of the facility, as well as for grid improvements, as a condition of any

---

<sup>1</sup> Shehabi, A., Smith, S.J., Hubbard, A., Newkirk, A., Lei, N., Siddik, M.A.B., Holecek, B., Koomey, J., Masanet, E., Sartor, D. 2024. 2024 United States Data Center Energy Usage Report. Lawrence Berkeley National Laboratory, Berkeley, California. LBNL-2001637

<sup>2</sup> National Energy Management Institute Sample Ventilation Verification Forms. <https://www.nemionline.org/vvr-for-contractors/>

permit or approval. A PLA or CWA is the most effective and enforceable tool for guaranteeing local hire, prevailing wages, apprenticeship utilization, and labor peace across every tier of the construction workforce, rather than relying on individual contractor commitments that vary in strength and are difficult for the County to enforce.

## **5. Support Requirements for a Community Benefits Plan as the County's Primary Accountability Tool**

We encourage the County to look to applicants to develop a Community Benefits Plan as a central mechanism for delivering on the goals in the Board's motion. These agreements can look at the local hiring and wage commitments throughout the life of the building, energy- and water-efficient designs, financial contributions to community priorities, and ongoing public disclosure, all within a single, enforceable framework.

Additionally, as a condition of interconnection, we recommend requiring data center developers to assume financial responsibility for all grid infrastructure upgrades necessary to reliably serve the proposed load, including transmission, distribution, substation, and related system improvements, unless otherwise approved by the appropriate regulatory authority. This requirement would protect existing ratepayers from subsidizing private development while helping strengthen and maintain a reliable, resilient, and adequately supported electrical grid.

## **6. Require Non-combustible Building Envelope Materials**

Given the increasing risk of wildfires and extreme weather in Los Angeles County, the County should require that data center facilities utilize fire-resistant, durable exterior building materials. We recommend mandating the use of non-combustible materials for the building envelope, including but not limited to metal or composite siding, and Class A roofing. These materials not only improve the facility's resilience against external fire threats but also enhance the overall protection and longevity of the equipment housed inside. Furthermore, these materials offer architectural versatility, allowing for designs that enhance the visual integration of the facility within the surrounding community. The precedent of these types of building codes already exists in the Wildland Urban Interface (WUI).

## **Conclusion**

SMART Local 105 stands ready to serve as a resource to the County as you prepare study findings and recommendations directed by the Board's motion. We welcome the opportunity to discuss these recommendations further and to continue to be included as a stakeholder in the County's ongoing deliberations on data center policy.

We also want to highlight that the Board's motion references bills like SB 886 (Padilla). We support SB 886 and any other legislation that protects ratepayers and the greater public from avoidable environmental impacts, while also ensuring the local community benefits from the jobs created by these facilities.

Thank you for your consideration.

**For more information or questions about our feedback, contact:**

**Fernando Ochoa**

Sheet Metal Workers (SMART) Local Union 105

[fochoa@local105.org](mailto:fochoa@local105.org)

562-308-6926

**Jeremy Zeedyk**

Western States Council of Sheet Metal Workers

[jeremy@wscsmw.org](mailto:jeremy@wscsmw.org)

860-209-4324

**From:** [Audrey Siu](#)  
**To:** [Connie Chung](#); [Trejo, Annette](#); [Azar Kattan](#); [Edward Rojas](#); [Ben Harris](#); [Kelly Shannon McNeill](#)  
**Cc:** [Simon, Victoria](#); [Keith Hala](#); [Aracely Lasso](#)  
**Subject:** Re: E-Intro LA Waterkeepers and Data Center Research Team  
**Date:** Thursday, July 23, 2026 10:28:08 PM  
**Attachments:** Outlook-THE NEW FA.png  
Outlook-nzhokwk.png  
Outlook-Threads Lo.png  
Outlook-5aesa2qv.png  
image.png  
image.png  
ATT 1 Ren, Shaolei (2026) Small Bottle, Big Pipe 7.23.pdf  
ATT 2 2027-07-20 HDC recycled water quality E&E news.pdf

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**CAUTION: External Email. Proceed Responsibly.**

Hi all,

Nice to e-meet you, Connie, and thanks for your patience. I've also included Victoria, Keith, and Aracely as I have a couple more water and climate comments to what I previously sent. LAW would love to stay apprised of the report (and if possible, we'd love to see it before it is submitted to the BOS in August?). Thanks in advance for sticking with me through a long email.

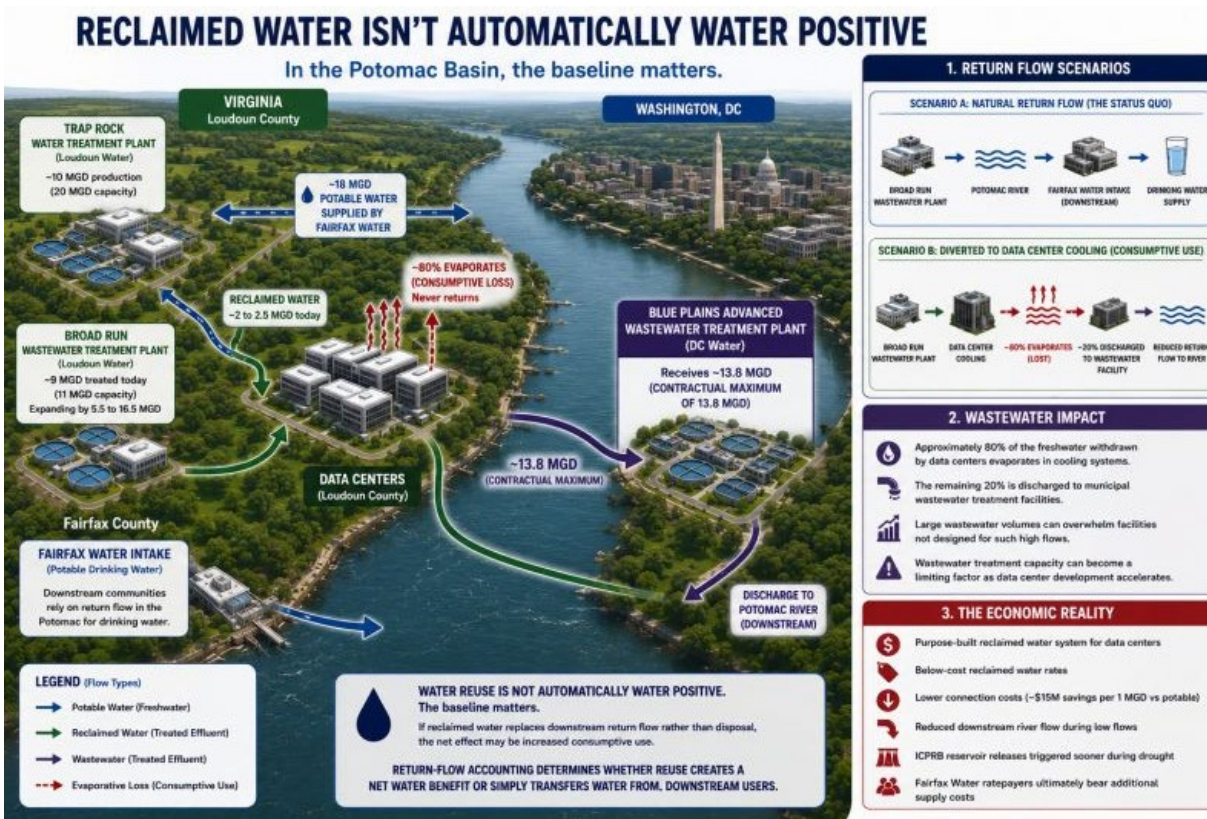
1. Re-attaching with a few more thoughts, the paper by Dr. Ren (**Attachment 1**)
  - LAW had previously relayed its concerns with data center peak demand straining the supply grid. To that I'd add: this paper does a good job of summarizing the fundamental tradeoff (with today's technology) between power and water use for facility-level cooling. Those facilities that use evaporative cooling use less energy though more water — and that water use is consumptive and not recoverable. Measured against other industries, their consumptive ratio is higher, and specifically higher during those peak periods on the hottest days. So, I don't think it's an apples-to-apples comparison with other industries that may be using larger volumes of water but sending that water to a wastewater treatment plant where it could be recovered and reused.
  - Those that use dry cooling may further exacerbate existing power capacity shortages, in addition to contributing to other externalities, including increased public health risks.
  - The authors broadly classify data centers into three types, and these definitions may be useful to the county for any future regulatory framework (to distinguish a hyperscale center from two servers in a broom closet.)
  - Appendix J of this paper contains a discussion of capacity planning and management in California public water supply systems, referencing expansion planning under the Drinking Water State Revolving Fund policies, and allocated capacity and legal limits on new connections pursuant to Section 2708 of CA Public Utilities code.
2. 7/20 article from E&E News on water quality (**Attachment 2**). LAW could connect you to one of the hydrologists interviewed in the article, Dr. Barasa Wangusi if you're interested.
  - Article notes that the initial facility buildout can produce wastewater that local sewer systems can't handle and which current regulations might not address. The "fill and flush" process of closed-loop pipes might send problematic chemicals, bacteria, and other impurities to a WWTP. Such was the case with a recent incident with harmful bacteria being traced back to a data center.
  - Here is an [interview](#) with the Loudon County, VA water utility that has some interesting insights on HDC water supply, including recycled water, and associated water quality impacts. Overall, they "gush" about data centers using recycled water. But the speakers also point out that return water from the HDC's may be so loaded with pollutants—particularly during plant start-up and construction-- that the utility might have problems complying with its CWA discharge permit(!).

A couple other lightbulbs went off in my head since LAW spoke with the county:

- Some data center operators are claiming that their use of recycled water results in a "net positive". We've been

hearing from colleagues as well that this is a preferred practice. But one needs to get into the weeds with basin level accounting to determine this claim (as I understand it, the recycled water would need to be destined for disposal for any claim of net positive to be true). Moreover, if a data center uses reclaimed water for facility-level evaporative cooling, that water represents a consumptive use lost to the atmosphere — when it could have been used for basin replenishment. I think we need to be very careful with being automatically prescriptive of recycled water, particularly in arid, water-constricted LA where basin replenishment needs to be prioritized. The infographic below, by the folks at [BlueCredit](#), is a rebuke to Loudon county and says it better than I can.

- You all might be able to tell me the answer to this: if a data center is using reclaimed water for evaporative cooling, well, what besides water is being evaporated and sent into the community? If not treated to potable water standards (or maybe irrespective of it), are emerging contaminants of concern being aerosolized?
- LAW suggests the county consider decommissioning procedures for hyperscale facilities.



Thanks and best regards,

**AUDREY SIU** (she/her)  
 Urban Resilience Director  
 (305) 586-0151 (direct)  
 @LAWaterkeeper  
 360 E 2nd Street Suite 250, Los Angeles, CA 90012  
 LA WATERKEEPER®

**From:** Connie Chung <cchung@planning.lacounty.gov>

**Sent:** Wednesday, July 22, 2026 9:04 PM

**To:** Trejo, Annette <ATrejo@bos.lacounty.gov>; Azar Kattan <AKattan@ph.lacounty.gov>; Edward Rojas <erojas@planning.lacounty.gov>; Audrey Siu <audrey@lawaterkeeper.org>; Ben Harris <ben@lawaterkeeper.org>; Kelly Shannon McNeill <kelly@lawaterkeeper.org>

**Cc:** Simon, Victoria <VSimon@cso.lacounty.gov>  
**Subject:** RE: E-Intro LA Waterkeepers and Data Center Research Team

Thanks, Annette. Nice to meet you Audrey, Ben, and Kelly. My understanding is you had a meeting with our colleague Victoria Simon from the Chief Sustainability Office and some folks from Public Works. Thank you so much for the information you provided—if you have any follow up items, we're happy to reconnect with you.

Thanks!

Connie

**CONNIE CHUNG, AICP** (she/her/hers)  
**DEPUTY DIRECTOR, Advance Planning Division**  
Office: (213) 974-6457 • Direct: (213) 893-7038  
Email: [cchung@planning.lacounty.gov](mailto:cchung@planning.lacounty.gov)

---

**From:** Trejo, Annette <ATrejo@bos.lacounty.gov>  
**Sent:** Wednesday, July 22, 2026 5:06 PM  
**To:** Azar Kattan <AKattan@ph.lacounty.gov>; Connie Chung <cchung@planning.lacounty.gov>; Edward Real <EReal@planning.lacounty.gov>; Audrey Siu <audrey@lawaterkeeper.org>; Ben Harris <ben@lawaterkeeper.org>; Kelly Shannon McNeill <kelly@lawaterkeeper.org>  
**Subject:** E-Intro LA Waterkeepers and Data Center Research Team

**CAUTION: External Email. Proceed Responsibly.**

Hi All,

Just wanted to connect the LA Waterkeeper Team (Audrey, Ben, and Kelly) and Azar Kattan (DPH), Connie Chung (DRP) and Edward Real (DRP).

Just in case you all have not connected yet on the study being done regarding the data centers. Audrey – they may connect you with colleagues working on the study but totally recommend sharing with this team the info you previously discussed with me on water usage and data centers.

Thanks,  
Annette

**Annette Trejo MSW, MPH, CHES**  
*Environmental Deputy | Policy Advisor*  
LA County Board of Supervisors, First District  
856 Kenneth Hahn Hall of Administration  
500 West Temple Street  
Los Angeles, CA 90012  
(213) 974-4111

[hildalsolis.org](http://hildalsolis.org)



Los Angeles County Supervisor

**HILDA L. SOLIS**  
First District • Chair



# Small Bottle, Big Pipe: Quantifying and Addressing the Impact of Data Centers on Public Water Systems

Yuelin Han  
*UC Riverside*

Pengfei Li  
*RIT*

Adam Wierman  
*Caltech*

Shaolei Ren<sup>1</sup>  
*UC Riverside*

## Abstract

Water is a critical resource for data centers and an efficient means of cooling. However, meeting the growing water demand of data centers requires substantial peak water withdrawals, which many communities in the United States do not have the available capacity to supply, especially during the hottest days of the year. [REDACTED] and can force operators to rely on waterless, less efficient dry cooling, thereby increasing electricity demand and further stressing the power grid during summer peaks. In this paper, we focus on the direct water withdrawal of U.S. data centers for cooling and examine their impacts on public water systems. Based on public sources including government records and water utility data, our analysis indicates that, if the 2024 water use intensity persists, U.S. data centers could collectively require [REDACTED] (MGD) of new water capacity through 2030, comparable to New York City’s average daily supply of approximately 1,000 MGD. Under an optimistic scenario with an industry-wide compound annual water use intensity reduction by 10%, the water capacity demand decreases to 227–604 MGD, although the case of high-growth IT loads could still require enough capacity to hypothetically supply about half of New York City’s daily water demand for most of the year, excluding peak hot days. The [REDACTED]. These impacts are highly concentrated on individual communities hosting data centers, placing additional stress on already capacity-constrained public water systems without substantial infrastructure upgrades. Finally, we provide recommendations to address the growing water capacity demand of U.S. data centers, including reporting peak water use, developing corporate-community partnerships to benefit community well-being, adopting a Water Capacity Neutral approach (colloquially “Pipe Neutral”) to allow host communities to retain limited water capacity resources, and implementing coordinated water-power planning to responsibly leverage water for peak power reduction and opportunistically utilize surplus power to mitigate peak water impacts on public water systems.

## 1 Introduction

The advancement of artificial intelligence (AI) and computing technologies holds the promise of reshaping industries, accelerating scientific discovery, and offering powerful tools to address pressing societal challenges, from controlling plasma for nuclear fusion to predicting extreme river-related events for watershed resilience [1]. Yet this rapid progress is being powered by an unprecedented buildout of warehouse-scale data centers filled with power-hungry servers [2]. As these data center facilities proliferate, they may pose significant local infrastructure challenges in the communities where they operate, raising public concerns that residents may shoulder disproportionate infrastructure costs and face sustained obligations to address associated financial, environmental, and health risks [3, 4].

A well-recognized challenge of data centers’ rapid expansion stems from their increasing electricity usage, with a single AI data center campus capable of drawing hundreds of megawatts, enough to power a mid-sized city. In the United States, the surging demand for AI is projected to drive the data center electricity use to 6.7 to 12.0% of the national total in 2028, up from 4.4% in 2023 [2]. As a result of the electricity consumption, the climate impacts of data centers’ carbon footprint [5–9] and the public health burden from their associated air pollution [4, 10, 11] have received heightened attention. Additionally, an immediate physical constraint often lies in the already strained local power infrastructure [12, 13].

Alongside electricity, water is not just a basic necessity for human-being but also “a critical input supporting the data center and AI revolution,” as noted in a recent roundtable discussion on data centers convened

<sup>1</sup>Corresponding authors: Adam Wierman (adamw@caltech.edu) and Shaolei Ren (shaolei@ucr.edu)

by the U.S. Environmental Protection Agency (EPA) [14]. Indeed, even setting aside off-site water use for electricity generation and chip manufacturing (Section 2.1), on-site evaporative cooling for data centers is widely recognized as a power-efficient approach [15, 16] and even “the most efficient means of cooling in many places” [17]. For example, compared to waterless dry cooling, evaporative cooling for a large technology company’s new data center campuses in Louisiana “reduces electricity demand by 25–35% at the same time when the grid experiences peak summer loads and regional power demand is at its highest” [16]. Notably, multiple leading technology companies have signed agreements with local water utilities to secure substantial water allocation for cooling their future data center campuses across various states [16, 18–21].

However, despite the significant benefits of water and the often relatively modest *annual* total, data center water use is highly concentrated during the hottest days of the year, resulting in substantial peak daily water withdrawals. For example, peak daily water demand for a large state-of-the-art data center using evaporative cooling during the summer can often exceed 1 million gallons per day (MGD) and, for some planned facilities, may even reach as high as 8 MGD [18, 19, 21].

There is no “national reservoir” that data centers can tap into. Instead, data centers predominantly rely on treated water—primarily potable—supplied by local public water systems.<sup>2</sup> Unfortunately, many public water systems in the United States are aging, fragmented, and/or financially constrained [23], thus lacking sufficient available capacity to meet the additional peak water demands of large data centers [24]. For example, when interviewed about a new data center requesting 6 million gallons per day (MGD) of water capacity—an amount that could potentially exhaust the available surplus supply in Newton County, Georgia—a representative of the county’s water authority stated that “we just don’t have the water” [25]. Without substantial upgrades, even large water utilities, such as Loudoun Water that serves over 300,000 residents and many tens of data centers in Northern Virginia [26], could be unable to meet the total water capacity needs if all data centers were to employ evaporative cooling during the summer (Appendix B).

The high capital expenditure required to expand water capacity to meet the additional demand from data centers—as reflected by three recent water infrastructure upgrades for large technology companies costing a total of nearly \$1 billion [16, 18, 27]—is frequently beyond the capability of many public water systems, particularly small and medium-sized systems which are often under-resourced and together constitute nearly 99% of community water infrastructure in the United States [28]. Like power grids, public water systems are designed to safely and reliably meet the maximum demand across all pressure zones, with margins to handle extreme conditions such as prolonged heatwaves and droughts. However, fulfilling this mission is becoming increasingly challenging due to longstanding underinvestment and limited technical resources. According to the EPA surveys on drinking water and wastewater systems [28, 29] and a recent third-party analysis [30], U.S. public water and wastewater systems now face a total infrastructure funding need of \$1.3–3.4 trillion over the next 20 years to improve service reliability, safety, and resilience. Moreover, as highlighted in the EPA’s report to Congress in 2024 [31], water affordability has become a significant challenge nationwide, with an estimate of 12.1 to 19.2 million U.S. households lacking affordable access to water services. These factors can further constrain the ability of public water systems to expand capacity for new industry-scale demands.

To address the water capacity shortages without increasing burdens on local ratepayers, corporate-community partnerships are emerging to fund infrastructure upgrades and expansion. For example, a large technology company has recently committed up to \$400 million to invest in local public water infrastructure to support its new Louisiana data centers hosting AI and cloud services [16]. In another case, a water capacity request of 1.2 MGD from a data center developer (first reportedly for cooling [32] and later allegedly for fire suppression [33]) triggered major water infrastructure upgrades costing the developer over \$100 million [34]. Without these upgrades, the host town in Wisconsin, which had less than 2 MGD of remaining water capacity according to the water utility’s 2024 annual report [35], would likely see operational safety margin significantly reduced for its water system.

Even when financial resources are available, however, public water infrastructure projects can take multiple years to complete and may face further delays due to additional constraints, including water rights allocation and multi-agency approvals [24, 36, 37]. In a recent instance, an Indiana water project, partly financed by the state, to add 25 MGD of new water supply capacity and expand wastewater treatment capacity

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<sup>2</sup>As detailed in Section 2.3, we use the term “public water system” to refer broadly to community water systems and related water infrastructure [22], including treated reclaimed water and wastewater treatment systems.

by 15 MGD for an economic development district is expected to take approximately six years to complete and cost more than \$1 billion, including \$560 million for new water supply [38], \$225 million for upgrades to existing infrastructure, and \$350 million for wastewater treatment expansion [18]. As a result, a leading technology company’s data center located in that district to host AI and core products may not be able to operate at full capacity until its allocated water capacity of 8 MGD becomes available in 2031 [18,19]. In a different and more complex instance, expanding the water reservoir capacity of an Oregon town located on federal land would require federal-level review and approval beyond the town’s jurisdiction [37].

Compared with power grid expansion, public water system upgrades are often equally complex and time-consuming, and in some cases even more so, as they are heavily constrained by source availability, local hydrology, water rights, regulatory oversight, and/or environmental considerations [39,40]. Moreover, many communities rely on reservoirs naturally replenished by rainfall or snowpack, which are highly sensitive to drought conditions and further constrain the development of additional reliable water supplies [24]. In addition, unlike cross-state electricity transmission, transporting water over long distances is considerably more challenging and generally not a viable option.

Although data centers have increasingly constructed on-site (typically gas-fired) power plants for electricity to address grid capacity constraints [41,42], sourcing water from on-site groundwater wells or nearby rivers for cooling is rare (Table 1) and requires comprehensive environmental reviews, constrained site selection, and water rights approvals, thereby entailing significant business risks [24].

Consequently, the limited available capacity of public water systems is emerging as a critical, yet frequently underestimated, bottleneck to the rapid growth of data centers. Insufficient water capacity often compels data centers to rely on waterless, less-efficient dry cooling, which increases electricity demand and can further strain the power grid during summer peaks [15,16,43,44]. Moreover, such “unmet” water demands are often treated as “zero” water demands in public discourse, effectively overlooking or deferring the challenges of limited available capacity in many public water systems rather than proactively addressing them. Indeed, an Energy and Environmental Economics (E3) study released in December 2025 projects that water availability will become an even more crucial factor than the well-recognized power access for data center siting within the next five years [45].

**Contributions.** In this paper, we focus on data centers’ direct water withdrawal (also referred to as water *use* for clarity) in the United States, which hosts the largest number of data centers in the world [46], and examine the impacts of data centers on public water systems.

We first show that data centers use water differently than other users in two key aspects: compared to typical public water users such as residential buildings and offices, data centers have [REDACTED] and exhibit substantially [REDACTED]. While the high consumptive ratio could affect regional water availability [47], the high peaking factor, often reaching 6 and sometimes exceeding 10 (Appendix A.6), poses an even greater challenge for public water systems, many of which already struggle to accommodate new water demands during the summer. Thus, [REDACTED] [18,21,48]. Importantly, this challenge is largely hidden from both total annual water figures and the commonly-reported annualized [REDACTED].

Next, we study U.S. data center water use for the period of 2024-2030, including total annual water withdrawal, water capacity need, and the valuation of water capacity. To substantiate our projections, we examine the 2024 sustainability reports of five leading hyperscale data center operators and seven large colocation providers (Table 1), collectively representing approximately 86% and 22% of U.S. hyperscale and colocation IT loads in 2024, respectively. We use this data to establish industry-wide baseline values for water use and consumptive ratios. While data center operators rarely disclose their peak water requirements, we review public reporting, including government records, water utility data, and planning documents, to conservatively set peaking factors for peak water demand and to inform the valuation of water capacity. In addition to the baseline scenario, we incorporate annual industry-wide WUE reductions by assuming compound annual rates of 5% and 10% under moderate and optimistic scenarios, respectively, reflecting both efficiency improvement and tightening water capacity constraints in many U.S. public water systems.

Our analysis reveals the following key findings.

- **Annual water withdrawal and consumption:** In 2030, under the baseline scenario, data centers could withdraw 80–150 billion gallons and consume 60–110 billion gallons annually, representing roughly 0.6–1.1% of total annual withdrawals and 4–7% of total annual consumptive use in U.S. public water systems. The higher share of consumption reflects that data centers evaporate approximately 75% of the water they withdraw, compared to roughly 12% for other public water users on average [49]. These figures could decrease by half under an optimistic scenario with substantial water use reductions. While aggregated annual totals are relatively modest, a pressing challenge arises from data centers’ large and rapidly growing peak daily water demand, which many public water systems are unable to accommodate given longstanding resource constraints and the difficulty of developing new water supplies.
- **New water capacity demand:** Meeting the growing demand of U.S. data centers requires substantial new peak water capacity. From 2024 to 2030, U.S. data centers are projected to require 697–1,451 MGD of new water capacity under the baseline scenario, comparable in scale to New York City’s average daily supply of roughly 1,000 MGD [50]. Under an optimistic scenario with substantial water reductions, the total water capacity need drops to 227–604 MGD, although high-growth IT loads could still require enough capacity to hypothetically supply about half of New York City’s daily water demand for most of the year, except during the hottest peak days. Further, the water capacity demand is highly concentrated on individual communities hosting data centers, placing additional stress on already capacity-constrained public water systems in the absence of substantial infrastructure upgrades.
- **Valuation of new water capacity demand:** The total valuation of new water capacity needed to support U.S. data centers through 2030 is generally on the order of \$10 billion. Under the baseline scenario, valuations range from \$7–28 billion in the low-growth case and \$15–58 billion in the high-growth case, while the optimistic scenario reduces these figures to \$2–9 billion and \$6–24 billion, respectively. Although modest relative to the overall investment in the AI industry, such new water capacity expansion can be challenging for financially constrained public water systems [28, 29, 31], highlighting the critical importance of corporate–community partnerships to expand infrastructure without raising local water rates [3, 16].

Finally, to address the growing water demand of U.S. data centers, water capacity resources must be planned proactively through multi-stakeholder collaboration rather than treated as an afterthought. Our key recommendations include: reporting peak water use to inform public water systems and decision-makers; developing corporate–community partnerships to aligning corporate responsibility with community well-being; adopting a Water Capacity Neutral approach, or colloquially “Pipe Neutral,” that allows host communities to retain limited available water capacity for future development; and implementing coordinated water–power planning to responsibly use water as a “water battery” for peak power reduction during peak hours, while opportunistically utilizing surplus power to alleviate peak water stress on public water systems during heatwaves. Together, these strategies can enhance operational efficiency, protect local water systems, and ensure long-term community resilience while supporting data center growth and technological advancement.

*Disclaimer: The goal of this study is to quantify and assess the potential impact of data centers on public water systems in the United States. This study is not intended to advocate for or against the construction of data centers. We do not take a position on decisions pertaining to any specific data center, including decisions that may be directly or indirectly related to water use. In addition, our estimates of water capacity valuation are intended to illustrate the scale of new water infrastructure needed to meet data center demand and should not be interpreted as the actual financial obligations of data center operators, which may vary depending on contractual arrangements, accounting practices, local rate structures, and other context specific factors.*

## 2 Preliminaries on U.S. Data Centers and Public Water Systems

This section provides background on data centers and their water use, followed by a brief overview of public water systems in the United States and discussion on the emerging water capacity bottleneck for data centers.

## 2.1 Overview of U.S. Data Centers and Water Use

We broadly classify data centers into the following three types according to a recent report from LBNL [2].

- *Hyperscaler*: Hyperscaler data centers typically refer to large-scale facilities owned and operated by major technology companies to support massive computing workloads, often spanning multiple buildings or campuses.
- *Colocation*: Colocation data centers are operated by third-party providers that lease space, power, and cooling to multiple tenants (or a single large tenant), enabling organizations to outsource the physical infrastructure while retaining full control over their IT hardware. Some colocation data centers have IT loads comparable to, or even exceeding, those of hyperscale facilities.
- *Others*: Other types of data centers include enterprise or in-house data centers, telecommunications data centers, and small server rooms, which are often owned and operated by individual organizations to meet internal computing and networking needs. They are typically smaller and more geographically dispersed than hyperscalers.

In the United States, as of 2024, colocation and hyperscaler data centers constitute the dominant total data center energy consumption [2]. Specifically, colocation data centers account for approximately 48%, hyperscalers represent 36-40%, and the other data centers make up the remaining small share. Fueled by accelerating AI demand, the total U.S. data center energy consumption is expected to grow at an annual rate of 13–27%, reaching 325–580 TWh in 2028 [2]. Colocation and hyperscaler data centers continue to constitute the two largest segments, with colocation accounting for a slightly higher share. In contrast, other types of data centers, including enterprise and in-house facilities, are expected to comprise a declining share of total data center energy consumption, falling to approximately 4-6% by 2028 [2].

**Data center water use.** There are three related concepts in water-related studies: water *withdrawal*, water *consumption*, and water *discharge*. Water withdrawal refers to freshwater taken from surface or groundwater sources for use, regardless of whether it is later returned, and reflects competition for shared water resources [51]. Water consumption denotes the portion of withdrawn water that is not returned because it is evaporated or otherwise removed, thereby directly affecting downstream water availability [52]. Water discharge is defined as the difference between withdrawal and consumption and refers to the portion of withdrawn water that is immediately returned.

Data centers use water both directly (Scope 1) and indirectly (Scopes 2 and 3) [53]. We discuss each in the remainder of this section.

**Scope 1.** The direct water use of data centers is primarily associated with cooling, although humidification control can also require water. For a large data center, humidification demand alone may reach on the order of millions of gallons per year [54]. Critically, IT equipment, including servers, storage systems, and networking devices, generates heat that must be dissipated to the surrounding environment to ensure reliable operation. The cooling process typically occurs in two stages [55,56].

The first stage is [REDACTED]. Notably, the high power density of GPU-powered AI servers often necessitates liquid cooling (e.g., [REDACTED]) because of its superior heat removal capability [55,57], whereas liquid-cooled AI racks still have approximately 20% or more loads cooled by air [15,58].

The second stage is [REDACTED]. Common heat rejection mechanisms include: (1) [REDACTED] that primarily rely on water evaporation; and (2) [REDACTED], often supplemented by [REDACTED] to reduce the peak power demand during the hottest days of the year if applicable.

There is a fundamental tradeoff between power and water use for facility-level cooling [55], which we discuss in detail in Appendix E. Briefly speaking, evaporative cooling uses substantially more on-site water than waterless dry cooling, “but it also consumes much less energy” as noted by a large colocation provider [15]. Likewise, a leading technology company acknowledges in its sustainability report that “water is the most efficient means of cooling in many places” [17]. Notably, multiple large technology companies have

signed agreements with local water utilities to secure substantial water capacity (e.g., up to 8 MGD at full buildout) for cooling their newest AI and cloud data center campuses across various states [16,18–21], with some water capacity expected to be delivered in 2031 due to required infrastructure upgrades [18].

More concretely, industrial disclosures from major technology companies indicate that **water-cooled data centers can use 25 to 35% less electricity than air-cooled data centers** [44,59], especially during the summer “when the grid experiences peak summer loads and regional power demand is at its highest” [16]. The annual energy savings from evaporative cooling are also substantial [60]. For example, in Nevada, a data center that primarily relies on non-evaporative cooling exhibits a 6.4 to 10.2% higher *annual* average power usage effectiveness (PUE, defined as the ratio of total data center energy to IT energy) than another facility operated by the same company that relies heavily on evaporative cooling [17]. More energy savings from evaporative cooling are also observed in the monthly PUE and WUE measurements from real-world data centers, which are not often publicly available (Figure 1b) [61]. These benefits of water evaporative cooling can further translate into reductions in carbon emissions [62], public health risks [10], and indirect water use associated with electricity generation [53,63], as well as, critically, reductions in peak power demand to mitigate the stress on the grid during the summer months.

In general, for server-level cooling, liquid-cooled high-density servers (e.g., AI servers) can typically operate at higher allowable inlet temperatures than air-cooled servers (e.g., general-purpose compute, storage, or networking equipment). This higher thermal tolerance expands the range of ambient conditions under which facility-level “free” air cooling can be utilized, thereby reducing reliance on power-intensive mechanical chillers or evaporative cooling systems for a greater portion of the year. Nonetheless, even for a leading technology company’s state-of-the-art data center under construction which uses a “water-efficient closed-loop, liquid-cooled system that recirculates the same water” [19], a substantial water capacity of 8 MGD is still secured to support facility-level (evaporative) cooling during peak heat conditions [18].

A portion of the water withdrawn by data centers is discharged as wastewater, most commonly into municipal wastewater treatment facilities. For example, a large data center currently under construction has been allocated a water capacity of 8 MGD and a wastewater capacity of 4 MGD [18], while the first phase of another planned data center receives an initial capacity of 2 MGD of water and 0.57 MGD of wastewater [21]. Depending on the quality of the supplied water and operational settings, the required wastewater capacity generally scales linearly with the water withdrawal. Therefore, we use data center water withdrawal as a primary metric for both water and wastewater capacity requirements.

In addition to the use of water for cooling, some data centers may directly manage fire water systems to comply with safety codes and ensure sufficient flow (typically measured in gallons per minute, GPM) during fire emergencies. For instance, one data center states that it has requested a peak capacity of 1.2 million gallons per day for fire suppression [33] in response to inquiries regarding its large peak need, which is reportedly utilized (for cooling) during the hottest days of the year [32]. Domestic water use includes needs such as restrooms and kitchens, and is typically minimal. Unless explicitly stated, we exclude both fire and domestic water from our quantitative analysis.

**Scopes 2 and 3.** The indirect water use of data centers is associated with electricity generation (Scope 2) as well as upstream supply chain activities (Scope 3), including rare earth mining and semiconductor manufacturing. While the Scope 2 indirect water use for electricity generation is typically larger than direct water use, it is non-potable in most cases and therefore not directly relevant to public water supply [53]. The U.S. Energy Information Administration (EIA) routinely reports water withdrawal for the electric power sector, which is one of the largest freshwater-withdrawing sectors in the United States and comparable to agriculture in total withdrawal volumes (42.5% for thermoelectric power vs. 43% for crop irrigation relative to the total water withdrawal in the contiguous United States) [49,64]. It has also recently begun publishing monthly data on water withdrawal and consumption for individual power plants [65]. Additionally, as water withdrawals can affect immediate water availability and downstream water quality, water permits are issued based on total withdrawal volumes and applicable consumptive use limits [36,66]. Therefore, it is important to quantify Scope 2 water withdrawal and consumption in order to assess the *operational* impacts of data centers on regional watersheds. A recent study indicates that a large technology company’s Scope 3 water accounts for over 99% of its total corporate water footprint [67]. In practice, however, information on Scope 3 water use is often incomplete and limited [68], and is therefore typically excluded from full-scope analyses of data center water use in most studies.

*In this paper, we focus on the impact of data centers on public water systems. Therefore, while Scope 2 and 3 water remains crucial, we consider only direct Scope 1 water withdrawal and refer to it as water use or demand, unless otherwise noted.*

## 2.2 U.S. Public Water Systems

In the United States, a public water system is defined as any infrastructure, publicly or privately owned, that supplies water for human drinking through pipes or other constructed conveyances to at least 15 service connections or to an average of at least 25 people for at least 60 days per year [22]. Nationwide, there are approximately 150,000 public water systems [22] and 16,000 municipal wastewater treatment facilities [69].

A public water system typically draws water from surface sources such as lakes, rivers, or reservoirs, though some rely on groundwater from aquifers. The water is treated to meet the EPA safety standards under the Safe Drinking Water Act [70], using methods like filtration and disinfection. After treatment, water may be stored in tanks and is then distributed to communities through a network of mains and smaller service lines. In addition to potable water, some water systems also provide reclaimed or recycled water for non-potable purposes, such as irrigation or industrial use. While wastewater is collected and processed separately subject to the Clean Water Act [71], drinking water and wastewater systems are increasingly considered as an integrated network, allowing coordinated planning and management of water resources.

For the convenience of presentation, in this paper, we simply use the term “Public Water System” to refer to the entire system cycle, including sourcing, treatment, distribution, wastewater processing, and water recycling.

**Community water systems.** A subset of public water systems that supply water to the same population year-round are known as *community water systems*. There are roughly 50,000 community water systems in the United States, of which approximately 40,000 are small systems each serving no more than 3,300 people, about 9,000 are medium systems each serving between 3,301 and 100,000 people, and only 708 are large systems serving more than 100,000 people [28]. Nearly all hyperscale and colocation data centers in the United States are supplied by community water systems (mostly from potable water sources), with only a few exceptions drawing water from private groundwater sources (Table 1) that often require comprehensive environmental reviews and can impose additional availability risks [24].

\_\_\_\_\_ nationwide that are interconnected through regional transmission networks [72], the \_\_\_\_\_s are significantly more \_\_\_\_\_, with many \_\_\_\_\_ and technical capacity. According to the most recent EPA surveys conducted prior to the AI boom, total funding needs for U.S. water infrastructure are projected to reach approximately \$1.3 trillion over a 20-year period.<sup>3</sup> This includes \$625 billion (in 2021 dollars) for drinking water systems between 2021 and 2040 [28] and \$630 billion (in 2022 dollars) for wastewater treatment and stormwater control between 2022 and 2042 [29]. More recent third-party analyses that incorporate updated stormwater requirements and PFAS compliance costs estimate the total funding needs at \$3.4 trillion (in 2025 dollars) over the period from 2025 to 2044 [30].

As highlighted in the EPA’s 2024 report to Congress [31], water affordability (defined as water service costs not exceeding 3.0% to 4.5% of household income) has emerged as a significant challenge nationwide, with an estimated 12.1 to 19.2 million U.S. households lacking access to affordable water services. Combined with increasing climate risks [74], the affordability challenge has further intensified the financial pressures faced by many community water systems. Mitigating these risks requires improvements in capacity, planning, and investment.

**Capacity expansion.** Public water systems are designed to safely and reliably meet maximum demand at all times and across all pressure zones, with additional margins and dedicated fire flow capacity to address extreme conditions such as prolonged heatwaves and droughts. Accordingly, drinking water treatment plants, pump stations, storage tanks and reservoirs, transmission mains, distribution networks, and wastewater treatment facilities must all be appropriately sized and carefully planned to accommodate peak scenarios. As a result, \_\_\_\_\_ to complete, particularly for complex projects such as treatment plant expansions. These projects typically

<sup>3</sup>All monetary values are in U.S. dollars. According to the U.S. Bureau of Labor Statistics [73], \$1 in January 2021 has the same purchasing power as \$1.24 in December 2025. For cost estimates using values between 2021 and 2025, inflation adjustments are not applied unless noted.

involve environmental review, water rights permitting and allocation, multi-agency approvals, funding authorization, detailed engineering design, and construction, all of which can substantially extend implementation timelines [24,36].

Moreover, many communities rely on reservoirs naturally replenished by rainfall or snowpack, which are highly sensitive to drought conditions and further constrain the development of additional reliable water supplies [24]. In addition, unlike cross-state electricity transmission, transporting water over long distances is considerably more challenging and generally not a viable option. Therefore, compared with power grid expansion, public water system upgrades are often equally challenging and time-consuming, and in some cases even more so due to strong local hydrology constraints.

## 2.3 Water Capacity Bottleneck for Data Centers

A large data center that relies on evaporative cooling can consume millions of gallons of water per day during the hottest periods of the year. For example, a planned data center in Virginia is projected to use up to 8 MGD at full build-out [21], or reportedly as much as 30 times the town’s current largest water user (a beverage bottling company) [27].

On the other hand, a public water system’s short-term ability to accommodate new service connection requests largely depends on its available capacity, as decided by the more restrictive of the remaining physical capacity and the uncommitted capacity (i.e., total physical capacity minus already allocated capacity). The system’s full design capacity is therefore not the primary determinant. A public water system that serves, or is already committed to serving, existing users may still deny a new service connection if its available capacity is limited, even when the requested capacity is substantially smaller than that of some existing users. For example, a large technology company recently stated that its new data centers in Louisiana will draw water only from the host community’s “verified surplus water” capacity, ensuring “no strain on local water supplies” [16]. More details of capacity planning and management can be found in Appendix J.

Unfortunately, many U.S. public water systems lack sufficient available capacity to accommodate new, large-scale industrial peak demands [24,28]. Concretely, depending on local climate conditions and cooling system design, supporting a 100 MW IT load using evaporative cooling, which is modest relative to emerging gigawatt-scale AI facilities, can require a peak water capacity allocation of approximately 0.5–2.5 MGD (Appendix C). This estimate excludes deployments in hot climates, where elevated ambient temperatures can substantially increase water capacity need and push the required peak withdrawal capacity beyond 5 MGD. By comparison, a town in Wisconsin with roughly 12,000 residents has less than 2 MGD of remaining physical capacity, according to its 2024 annual report [35]. Thus, after accounting for operational safety margins and reliability headroom, the practically allocable surplus capacity is likely even smaller, which may be difficult to support the need of a evaporatively cooled 100 MW IT load, let alone data centers at larger scales. In fact, many data center projects have required substantial upgrades to local water infrastructure, even when their peak water demand is as low as approximately 0.1 MGD [16,18,21,34,75–77].

Importantly, this constraint is not limited to small or medium systems. For example, without substantial capacity expansion, even a large water utility such as Loudoun Water, which serves more than 300,000 residents and many data centers in Northern Virginia [26], could face difficulty accommodating the total water capacity requests of data centers within its service territory if all the data centers were to rely on evaporative cooling (Appendix B).

To balance grid stress and water use, some data centers have increasingly adopted hybrid cooling strategies, such as applying evaporative cooling to a portion of IT loads and/or supplementing dry coolers with direct evaporative assistance only during summer periods. Nonetheless, even if only 10% of IT loads are cooled with direct evaporative assistance during the summer in a cold climate, the growing scale of AI data centers can still lead to substantial peak water demand. For example, when fully built, an AI-dedicated data center is planned for approximately 0.7 MGD of peak water demand, which can be substantial for the available surplus capacity of a small or medium public water system in the host community in Wisconsin [78]. In another case of a host town with less than 2 MGD available remaining physical capacity (according to the water utility’s 2024 annual report) [35], a peak water capacity request of 1.2 MGD reportedly triggers a major water infrastructure upgrade exceeding \$100 million [34]. More recently, a leading technology company’s state-of-the-art data center under construction employs a “closed-loop, liquid-cooled system that recirculates the same water” [19] and relies on water evaporation for facility-level cooling only during the

2024 U.S. data center water and energy use of selected companies. An asterisk “\*” denotes values estimated or assigned based on third-party sources. A dagger “†” denotes ratios derived from reported water consumption values when withdrawal-based ratios are not explicitly disclosed. A dash “–” indicates that the corresponding value is not reported and cannot be plausibly estimated. The details of data sources are available in Appendix A.4.

| Company           | IT Energy (MWh)   | Total Energy (MWh) | PUE         | Water Consumption (ML) | Water Withdrawal (ML) | WUE (L/kWh) | Consumptive Ratio | Municipal Ratio |
|-------------------|-------------------|--------------------|-------------|------------------------|-----------------------|-------------|-------------------|-----------------|
| Hyperscale-1      | 20,417,908        | 22,255,520         | 1.09        | 23,120                 | 29,510                | 1.13        | 0.78              | –               |
| Hyperscale-2      | 7,764,474         | 9,006,789          | 1.16        | 2,951                  | 3,934                 | 0.38        | 0.75*             | 99.45%†         |
| Hyperscale-3      | 11,828,810        | 12,775,115         | 1.08        | 1,698                  | 2,365                 | 0.14        | 0.72              | 99.79%          |
| Hyperscale-4      | 1,564,220         | 1,705,000          | 1.09*       | 2,132                  | 2,842                 | 1.36        | 0.75*             | 93.54%          |
| Hyperscale-5      | 16,004,477*       | 18,245,104         | 1.14        | 1,560                  | 2,081                 | 0.10        | 0.75*             | –               |
| Colocation-1      | 4,533,626         | 5,667,033          | 1.25*       | 2,793                  | 3,724                 | 0.62        | 0.75*             | 99.79%†         |
| Colocation-2      | 1,741,150         | 2,420,198          | 1.39        | 1,654                  | 2,153                 | 0.95        | 0.77              | 94.49%          |
| Colocation-3      | 2,584,146         | 3,617,805          | 1.40        | 2,119                  | 2,323                 | 0.82        | 0.91              | 100.00%         |
| Colocation-4      | 3,520,345         | 5,139,703          | 1.46        | 1,021                  | 1,312                 | 0.29        | 0.78              | –               |
| Colocation-5      | 1,237,664         | 1,522,327          | 1.23        | 1,584                  | 2,112                 | 1.28        | 0.75*             | –               |
| Colocation-6      | 598,551           | 826,000            | 1.38        | 431                    | 575                   | 0.72        | 0.75*             | –               |
| Colocation-7      | 623,706           | 829,529            | 1.33        | 36                     | 48                    | 0.06        | 0.75*             | –               |
| <b>Hyperscale</b> | <b>57,579,889</b> | <b>63,987,528</b>  | <b>1.11</b> | <b>31,460</b>          | <b>40,732</b>         | <b>0.55</b> | <b>0.77</b>       | <b>–</b>        |
| <b>Colocation</b> | <b>14,839,188</b> | <b>20,022,595</b>  | <b>1.35</b> | <b>9,638</b>           | <b>12,246</b>         | <b>0.65</b> | <b>0.79</b>       | <b>–</b>        |

hottest days of the year. However, the data center may not be able to operate at full capacity until its allocated water capacity of 8 MGD becomes available, as anticipated in 2031 [18, 19].

Therefore, choosing between air-cooled and evaporative systems for facility-level cooling to manage the tradeoff between water and electricity use may no longer be solely a design decision. Instead, the availability of public water capacity is increasingly emerging as a binding, yet often underestimated, constraint and projected to surpass power access as a limiting factor for data center siting within the next five years [45].

### 3 Understanding the Characteristics of Data Center Water Use

This section characterizes data center water usage, emphasizing its highly variable and spiky nature, which can pose significant challenges for public water systems. We then examine the impact of data centers on public water systems and the limitations of existing volumetric-based water footprint studies, which often overlook temporal variability and peak water demand that are critical constraints for data centers.

#### 3.1 How Data Centers Use Water Differently from Other Users

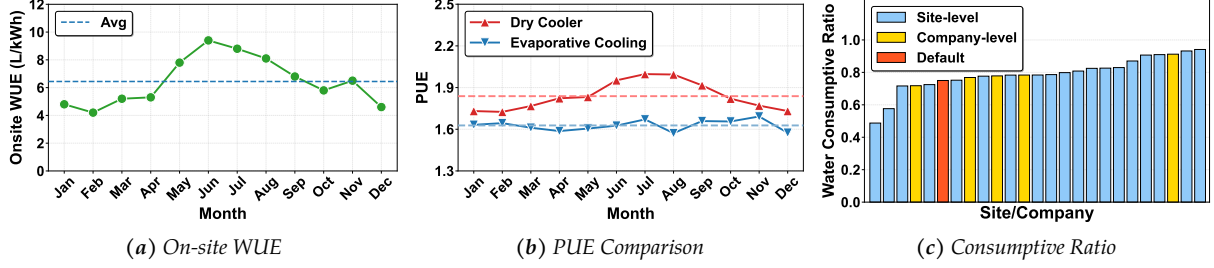
To understand the characteristics of data center water use, we review public reporting sources, including data center sustainability reports and water utility data, and identify two key features: a high consumptive ratio and a high peaking factor.

##### 3.1.1 High consumptive ratio

The consumptive ratio quantifies the fraction of withdrawn water that is actually consumed, providing a measure of the impact on downstream water availability. We see from Table 1 that data centers have a much higher consumptive ratio than typical industrial or residential users served by public water systems, because a large fraction of water withdrawal is lost to evaporation in facility-level cooling systems. Specifically,

in contrast to of their total water withdrawals [79]. [67], and of their water use [17]. For comparison, the [49].

Unlike other industrial processes where water can often be recycled or returned to the system, evaporative cooling converts water into vapor to remove heat, making these losses generally unavoidable. In fact, some data centers may add chemicals to treat public water on-site, allowing for more cycles of concentration in cooling towers. This reduces blow-down water and further increases the consumptive ratio. Even with liquid-cooled servers that allow higher server-level temperature setpoints, water evaporation are still



**Figure 1:** (a) Monthly WUE of a data center with 34.5 MW IT capacity in Phoenix, Arizona, in 2019 [61]; (b) Monthly PUE and WUE comparisons of two data centers in Phoenix, Arizona, in 2019 (one with 54 MW IT capacity using dry coolers, and another one with 34.5 MW IT capacity using cooling towers) [61]; (c) Consumptive ratios of selected companies and data center sites in Table 1. The site-level consumptive ratios are for a large technology company’s U.S. data center fleet, excluding air-cooled sites.

preferred for facility-level cooling during summer peak periods in many places [16], keeping consumptive ratios high.

For the same amount of water withdrawal, a high consumptive ratio can pose additional water challenges for public water systems, particularly in drought-prone regions with limited supply. These challenges are further amplified by the complex water rights and applicable consumptive constraints legally imposed on the host community’s public water systems [36]. As a result, data centers’ higher water consumptive ratio may have a greater impact on water availability, a potential concern discussed in a recent study on the Washington Metropolitan Area water supply [47].

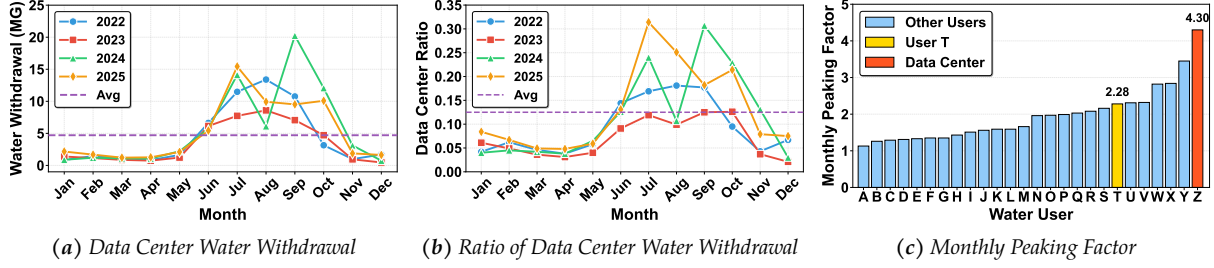
### 3.1.2 High peaking factor

Similar to power grids, public water systems are engineered to reliably meet maximum demand at all times and across all pressure zones, with additional safety margins [40]. Accordingly, a user’s peak water demand is a critical factor for water infrastructure planning, system resilience, and overall operational reliability.

Nonetheless, most data center operators disclose only annual total water use, often aggregated across an entire corporate fleet, providing limited visibility into facility-level peak demand [17, 40, 80, 81]. To address this limitation, we review publicly available records to characterize data centers’ peak water demand. In particular, we focus on the daily peaking factor whenever applicable, defined as the ratio of maximum daily water use to average daily water use. This metric is widely used in water infrastructure planning because it directly informs capacity sizing for treatment, storage, and distribution systems [40, 47, 82, 83]. Other key design parameters, such as peak hourly flow rate and instantaneous flow expressed in gallons per minute, are typically derived from the daily peaking factor using additional multiplicative adjustment factors [82, 83].

**Evaporative cooling towers.** We first examine the monthly water usage effectiveness (WUE, defined as the ratio of total water consumption to IT energy use) for a large colocation data center in Phoenix, Arizona, serving a nearly constant IT load in 2019 [61]. Cooling towers are a widely-used conventional cooling system, offering stable performance and broad applicability across diverse climates [84]. The ratio of the peak monthly WUE to the average monthly WUE is approximately 1.46, indicating seasonal variation in water intensity despite relatively stable computing demand. Assuming a constant consumptive ratio (i.e., the fraction of withdrawn water that is consumed), seasonal variation in WUE can serve as a proxy for variation in withdrawal. In the absence of the facility-specific daily peaking factor, regulatory guidance commonly applies a minimum adjustment factor of 1.5 [83], yielding an estimated daily peaking factor of at least 2.19.

In a more recent case of The Dalles, Oregon, the water pressure zone (Zone 310) in which a hyperscale data center using cooling towers is located and accounts for the majority of zonal water demand, exhibits a measured peaking factor of 2.21 [17, 37, 82]. Consequently, given that non-data center water demands are typically less “spiky,” the data center’s daily peaking factor may exceed 2.21.



**Figure 2:** Water use data collected from the monthly financial reports of West Des Moines Water Works available at [48]. (a) Monthly water use of a hyperscale data center in West Des Moines, Iowa; (b) The ratio of the data center’s water use to the total of 20 largest water users served by West Des Moines Water Works; (c) Monthly peaking factors (i.e., ratio of the maximum monthly water use to the average use between 2022 and 2025) of all the large water users counted by West Des Moines Water Works.

**Dry cooling with evaporative assistance.** An increasingly adopted configuration is air-based dry cooling supplemented with evaporative assistance during periods of high ambient temperature. Under typical server temperature setpoints and local climatic conditions, evaporative assistance may operate for only 5 to 15% of the year, and possibly up to 40% in hotter climates [85]. As a result, water use is highly concentrated in a limited number of hot days, leading to a relatively high peaking factor even when total annual water consumption is substantially lower compared to conventional cooling towers. As evaporative operation is triggered primarily on the hottest days, the high water demand is temporally aligned with periods of peak thermal stress, further amplifying the maximum hourly and daily water use. Consequently, although annual water use may be substantially reduced, the infrastructure implications associated with peak demand of evaporative assistance systems can remain significant.

Figure 2c presents the monthly water withdrawal of a hyperscale data center in West Des Moines, Iowa, indicating a ratio of peak monthly withdrawal to average monthly withdrawal of 4.30. It is important to note that the disclosed withdrawal volume includes a small portion of domestic water use, which typically exhibits a peaking factor in the range of 1.5 to 2.5. Consequently, the monthly peak-to-average water withdrawal ratio attributable solely to the data center cooling load is likely higher than 4.30. Applying a minimum adjustment factor of 1.5 to translate average demand to maximum day demand [83] yields an estimated daily peaking factor of at least 6.45.

We further present in Figure 2b the percentage contribution of the data center’s monthly water use relative to the total water use of the top 20 largest users in West Des Moines. This analysis further highlights the pronounced seasonal variability of data centers that rely on evaporative assistance during the summer.

Although the data center’s water use is relatively low during cooler months, its elevated summer water demand is sufficiently large that it becomes the largest annual water user in both 2024 and 2025 served by West Des Moines Water Works [48].

By comparison, we also present in Figure 2c the monthly peaking factors for other large water users reported in the financial disclosures of West Des Moines Water Works from 2022 to 2025 [48]. Some water users appear in the reports for fewer than four years; for these users, we compute the ratio of their maximum monthly water use to their average monthly use over the period in which they are reported. We can see that all other large water users exhibit substantially lower peaking factors than the data center. Note that, water user T, a large corporate campus, exhibits an abnormally high water use of approximately 15 million gallons in August 2023, exceeding more than ten times its average monthly use between 2022 and 2025. This spike is likely associated with campus expansion and infrastructure upgrades during that period, as indicated by the City of West Des Moines, Iowa building permit reports (May to July 2023) [86], resulting in a one time increase in water use. It does not exhibit the recurring annual pattern observed for the data center and other users. We therefore exclude this anomalous month when calculating the monthly peaking factor for user T.

**Peaking factor for planning.** The total water capacity allocated to a data center is often not publicly disclosed, frequently on the grounds of business confidentiality. In one rare case with disclosed water de-

mand [78], a [REDACTED] requests a total water capacity of 0.7 MGD to cool its non-AI servers, while its average daily water demand is only approximately 23,000 gallons, including relatively stable domestic use but excluding fire protection water. This implies a [REDACTED]. Due to the cold climate in Wisconsin, it is estimated that up to only 480 hours of cooling per year will require water [78], which reduces the total annual water use while increasing the peaking factor. In addition, the corresponding peaking factor for wastewater discharge at the same facility is approximately 15, which is substantially higher than that of non-data center users.

In another case regarding a hyperscale data center in Leesburg, Virginia, government records on water allocation and diesel generator capacity indicate that the planned daily peak WUE is estimated at 1.15 L/kWh as of March 2025 (Appendix B), whereas the reported annual WUE for the operator's data center fleet across Northern Virginia is 0.14 L/kWh as of 2023 (which may be lower due to efficiency improvements in 2025) [53]. This comparison suggests that the peaking factor for the Leesburg data center campus is approximately 8 or higher.

Similarly, in an innovation district under development in Indiana, a leading technology company's data center hosting AI and core products is estimated to have a planned daily peaking factor of 6.3 or higher, whereas other users in the district typically exhibit peaking factors below 2.0, except for one hospital at 3.0, based on water allocation agreements or pre-agreements (Appendix D). When the full water capacity of 8 MGD is delivered in 2031, the data center's allocation would account for 32% of the total 25 MGD of new water capacity, making it likely the largest single user in the district based on allocated capacity.

The elevated peaking factor is also evident at an aggregated level when multiple data centers are geographically clustered, such as in Northern Virginia. For example, a recent report analyzing water utility data indicates that the measured daily peaking factor of data centers within the Prince William Water service area reaches 10 in 2024 [47]. However, when a large number of data centers with diverse cooling system designs and operational configurations are aggregated, the overall peaking factor is moderated by multiplexing effects. Nevertheless, the weighted estimate for the actual peaking factor (not for infrastructure planning purposes) in Northern Virginia remains in the range of 3.5 to 3.7 under different scenarios (Table 6-5 of [47]), which is still substantially higher than the typical *aggregated* peaking factor of 1.5 to 2.5 for non-data center users [87].

**Summary.** The water use of data centers exhibits pronounced seasonal and even daily spikes, resulting in [REDACTED], depending on ambient temperature and cooling system configuration. Cooling systems that rely on evaporative assistance during the summer generally exhibit substantially higher peaking factors than conventional evaporative cooling towers. Additionally, in cooler climates and/or when server-level cooling operates at higher temperature setpoints that only need evaporative assistance for a limited number of days, the peaking factor can be even higher. For planning purposes, similar to power capacity redundancy [47, 88], data centers often request more water than their actual demand to hedge against extreme heat events and/or rapid future load increases. Finally, we note that although water storage tanks can buffer short-term fluctuations in hourly demand, data centers rarely rely on storage to fully offset multi-day peak water demand because of the high costs associated with utility-scale tanks, sanitation, maintenance, and other operational requirements.

### 3.2 Impacts of Data Centers' Peak Water Demand on Public Water Systems

Similar to power systems that are designed to provide a reliable electricity supply with stable voltage maintenance, public water systems need to reliably meet maximum demand at all times and across all pressure zones, with additional safety margins and dedicated fire flow capacity to address extreme conditions such as prolonged heatwaves. Nonetheless, within the broader context of underfunded infrastructure and growing water affordability concerns [28, 29, 31], many community water systems have limited *surplus* capacity available for large data centers, and developing new water sources can require a long lead time [24].

**Water utility responses to data center peak demands.** Some water utilities have begun to express concerns regarding data centers' peak water demands. For example, West Des Moines Water Works stated in 2022 that it "will only consider future data center projects" if such projects can "demonstrate and implement technology to significantly reduce peak water usage from the current levels," in order to preserve water availability for other users [89].

When asked about the water capacity requested by new data centers that would exceed the county's available supply, a representative of the Newton County, Georgia, water authority stated that "they [data centers] are taking up the community wealth" and "we just don't have the water" [25]. In Newton County, upgrades and capacity expansions needed to meet the new industrial-scale water demands and future growth are reportedly projected to increase local water rates by 33% over the next two years, compared with a typical annual rise of approximately 2%, unless additional external funding is secured [25].

In the United Kingdom, Thames Water, the country's largest water utility, has reportedly discussed options for "restricting or reducing or objecting to" data centers' peak water use during the hottest periods of the year [90].

**Corporate-funded infrastructure upgrades.** In response to concerns such as those above, community-corporate partnerships have increasingly been established by data center projects, paralleling investments in power infrastructure [3]. For example, a planned data center in Virginia will receive up to 8 MGD of water capacity at full build-out [21], which would reportedly be approximately 30 times greater than the town's current largest water user (a beverage bottling facility) and require roughly \$300 million in water infrastructure investments, anticipated to be borne by the data center operator [27]. In another case, a data center operator has funded water storage infrastructure to support the host town and enhance its water security [91]. More recently, a major technology company pledged up to \$400 million to upgrade local public water infrastructure to support evaporative cooling at its data center campus, "[reducing] electricity demand by 25–35% during periods of peak summer loads when regional power demand is highest" [16].

In a public water system, even though the total system-wide capacity is available, any component, including drinking water treatment plants, pump stations, storage tanks and reservoirs, transmission mains, distribution networks, and wastewater treatment facilities, can become a bottleneck for meeting the water demand of data centers. For example, despite sufficient aggregate system capacity in Leesburg, Virginia, a technology company agreed to pay \$25 million to fund water and wastewater improvements to secure approximately 0.64 MGD of water capacity and "ensure the cost of serving our facilities [i.e., the data center campus] does not fall on local ratepayers" [3,75]. Similarly, another data center with a relatively modest water capacity need of 0.1 MGD and wastewater need of 0.08 MGD requires utility upgrades, including the construction of a new pump station, reportedly costing \$5.4 million paid by the data center [76]. In another case, a small host community with less than 2 MGD available remaining capacity (according to the water utility's 2024 annual report) [35], faced a peak water capacity request of 1.2 MGD, which the data center indicates is for fire protection [33], reportedly triggering a major water infrastructure upgrade exceeding \$100 million [34].

In a more complex scenario, a city's water reservoir situated on federal lands needs capacity expansion to support future growth, which would necessitate comprehensive environmental review and federal approval. To expedite the process, the city is considering alternative approaches, such as legislative measures to transfer federal land ownership [37]. This example highlights the non-financial and regulatory constraints that can limit the effective capacity of public water systems.

**"Unmet" water demand.** Importantly, while power capacity shortages for data centers are widely recognized [2] and have even been described as a "crisis" [92], the increasingly binding constraint of Scope 1 water availability has received much less attention. Treating water constraints in isolation can undermine the viability of water evaporative cooling, which is recognized as "the most efficient means of cooling in many places" [17]. In the absence of available water capacity, data centers may have to rely on dry cooling technologies, which can increase electricity demand, even for state-of-the-art AI facilities that operate with relatively high server-level cooling temperature setpoints [43]. For example, in Newton County, Georgia, a recent data center project in 2025 reportedly requested approximately 6 MGD of water capacity [25], which could not be accommodated under the county's existing water infrastructure [93]. Moreover, although many data centers served by Loudoun Water in Northern Virginia use dry cooling as facilitated by higher server-level cooling temperature setpoints, this also partially reflects Loudoun Water's potential capacity constraints at the time those data centers were connected—if all the data centers had employed water-based evaporative cooling, Loudoun Water's available capacity could have been depleted or even exceeded on the hottest days (Appendix B).

Consequently, the "unmet water demand" of data centers—the water that would have been used if it

were available—is often effectively viewed as “zero water demand” in public discourse. This silent shift may further exacerbate existing power capacity shortages, in addition to contributing to other externalities, including increased public health risks [10].

### 3.3 Limitations of Total Volumetric Water Footprints

We conclude this section by emphasizing the contrast between the discussion above and prior work on data centers’ overall water footprint. Existing studies predominantly focus on quantifying and reducing the total water consumption of data centers [2,5,9,53,94,95], often including indirect water consumption for electricity generation [46,94] and sometimes incorporating regional water stress adjustments [63,96]. Moreover, amid broader global challenges of water imbalances described as “water bankruptcy” [97], several technology companies have pledged substantial financial resources to become “Water Positive,” aiming to manage their water consumption responsibly and mitigate associated ecosystem impacts through initiatives such as water replenishment and restoration projects [98–101]. Nonetheless, these studies and efforts exhibit the following limitations and may lead to unintended consequences.

**Water withdrawal.** While the existing studies are valuable for understanding overall impacts of data centers on global and regional long-term water resources and ecosystems, most of them, except for a few cases [47,53], tend to overlook the effects of water withdrawal, which is critical for short-term water availability, water quality, and allocation [36,52]. For example, the U.S. Energy Information Administration (EIA) routinely reports water withdrawal for the electric power sector, which is one of the largest freshwater-withdrawing sectors in the United States and comparable to agriculture in total withdrawal volumes (42.5% for thermoelectric power vs. 43% for crop irrigation relative to the total water withdrawal in the contiguous United States) [49,64]. It has also recently begun publishing monthly data on water withdrawal and consumption for individual power plants [65]. Importantly, public water systems almost always use water withdrawal as the primary metric for planning and allocation, and technology companies include Scope 1 water withdrawals in their annual sustainability disclosures [17,80].

**Cross-sector comparisons.** The distinction between municipal (typically potable) water for Scope 1 and non-potable water for Scope 2 is often missing from aggregate water consumption numbers, while Scope 3 water is rarely included due to the lack of reliable data in the public domain. However, the water footprint reported for other sectors often reflects the full lifecycle [102]. This can unintentionally lead to misinformed cross-sector comparisons. For example, the full-scope lifecycle water use for certain animal-derived products, such as hamburgers—including rainwater stored in the soil (i.e., green water) used to grow feed crops for patty production, whereas only less than 2% of the meat’s overall water footprint may come from public water systems (Appendix H) [103]—is sometimes directly compared with the operational or Scope 1 water use of data centers or AI model inference. Similarly, water-intensive golf courses, whose potable water use is increasingly regulated and accounts for only around 10% or less of total water applied (Appendix I), are sometimes compared against a data center’s Scope 1 municipal (potable) water use. Fundamental inconsistencies in accounting scopes and/or water types render such comparisons uninformative, obscuring the challenges faced by public water systems and misinforming public discourse.

**Peak Scope 1 water use.** Most importantly, while existing studies have examined the spatial impacts of data center water use [5,63,95], they do not account for the high peak demand of data centers—particularly daily peak Scope 1 water use—which is a key consideration for public water system management. This omission neglects the higher peaking factor associated with data centers compared to typical public water users (Figure 2c), an increasing challenge given that many U.S. public water systems are aging and under-resourced [23,24].

## 4 Quantifying and Forecasting Data Centers’ Peak Water Demand

This section presents a quantitative analysis of U.S. data centers’ total peak water demand, with projections through 2030. The results reveal that in the high-growth case and without substantial water usage reduction, U.S. data center expansion could require up to 1,451 million gallons per day (MGD) in new water capacity from 2024 to 2030, with infrastructure valuations reaching as high as \$15-58 billion. If hypothetically pooled, this capacity would be sufficient to supply New York City for much of the year, except during a limited number of peak demand days. When significant water reductions are realized at a compound annual rate

of 10%, the new water capacity need could decrease to 227–604 MGD, with a corresponding valuation range of \$2–9 billion and \$6–24 billion, depending on the IT load growth rates. Importantly, these impacts are highly concentrated on individual communities hosting data centers, highlighting the need of sustained corporate-community partnerships to address them effectively.

## 4.1 Growth Rates, Scenarios, and Data Sources

We first present a general methodology to quantify data centers’ peak water demand. Analogous to using IT power load as the basis for data center design (e.g., cooling systems, battery sizing, and backup generators), we use peak daily water use as the primary metric. This metric is widely employed in water infrastructure management and directly informs capacity sizing for treatment, storage, distribution, and wastewater handling [47, 82, 93]. While the actual daily peak water demand of a data center can be directly measured for post-hoc reporting and analysis, estimating it in advance is valuable for guiding infrastructure planning. For planning purposes, the peak daily water demand can therefore be calculated as:

$$PeakWaterDemand = \beta \cdot \frac{TotalWaterConsumption}{T}, \quad (1)$$

where *TotalWaterConsumption* is the total Scope 1 water use planned over  $T$  days, and  $\beta \in [1, \infty)$  is the estimated or planned peaking factor.

### 4.1.1 Growth rates

We consider three data center growth cases informed by the recent U.S. data center energy report published by researchers at Lawrence Berkeley National Laboratory (LBNL) [2], complemented by industry market analyses [104, 105]. These scenarios capture a range of plausible medium-term expansion trajectories for U.S. data center capacity under accelerating AI-driven demand.

- **Low growth:** The total U.S. data center energy increases at a compound annual growth rate (CAGR) of 13% as considered in [2]. For IT loads of hyperscale and colocation data centers, the CAGRs are 21% and 23%, respectively.
- **Mid growth:** This represents the algorithmic mean of the low- and high-growth cases for IT loads.
- **High growth:** The total U.S. data center energy increases at a CAGR of 27% as considered in [2]. For IT loads of hyperscale and colocation data centers, the CAGRs are 29% and 32%, respectively.

While the LBNL report projects growth through 2028, we extend the same growth rates through 2030, to align with the study period used in a recent analysis of U.S. data centers’ carbon and water footprints [5] and with projected growth rates from other market analyses (e.g., CAGR of approximately 20% through 2030 [104] and approximately 22.4% over 2023–2030 under a medium-growth scenario [105]).

### 4.1.2 Scenarios

Previous studies [2, 47] consider constant or increasing average water usage effectiveness (WUE, defined as the ratio of total water consumption to total IT energy). In our analysis, we incorporate annual industry-wide WUE reductions by assuming compound annual rates of 5% and 10% under moderate and optimistic scenarios, respectively. These adjustment rates reflect continued technological and operational improvements in data center water efficiency, as well as tightening capacity constraints in many U.S. public water systems, which may render evaporative cooling infeasible or restrict its deployment in certain regions. Specifically, we consider the following three scenarios.

- **Baseline:** Industry-wide WUEs for hyperscale and colocation data centers remain constant at 2024 levels through 2030.
- **Moderate:** Industry-wide WUEs for hyperscale and colocation data centers decrease at a compound annual rate of 5% between 2024 and 2030.
- **Optimistic:** Industry-wide WUEs for hyperscale and colocation data centers decrease at a compound annual rate of 10% between 2024 and 2030.

While individual companies may achieve greater WUE reductions, the industry-wide adjustments applied in our study are consistent with previous observations and align with common reduction targets reported by data center operators [106]. Importantly, under the Moderate and Optimistic scenarios, the projected U.S.-wide average WUE in 2030 (Table 7) is approximately 0.43 L/kWh and 0.31 L/kWh, respectively. These values are lower than the modeled WUE projections reported in [2] and are consistent with prevailing industry trends, thereby representing plausible forward-looking estimates. In addition to the Baseline, Moderate, and Optimistic scenarios, we include two references—Reference (LBNL) and Reference (NS)—which apply WUE values based on the modeled results in [2] and [5], respectively.<sup>4</sup>

Currently, the majority of data center water use is supplied by public potable sources (e.g., more than 94% for a large technology company [17]), despite the adoption of reclaimed or recycled water in some cases, which is often also provided by municipal utilities [47]. In the following analysis, we do not further differentiate between potable and non-potable water. Instead, we discuss the role of non-potable water in Section 5 as a potential approach to mitigating the impacts of data centers on public water systems while preserving the peak power reduction benefits of evaporative cooling.

#### 4.1.3 Data Sources

We briefly describe the data sources and settings for our analysis, with details available in Appendix A. For each IT load growth case (low, mid, and high growth), we quantify the annual water consumption, withdrawal, and peak water withdrawal for hyperscale and colocation data centers separately, while excluding potential water use from the smaller and declining segment of other data center types (Section 2.1).

Rather than relying on simulated WUE models [2, 5] that may exhibit substantial discrepancies from actual water use, we base our water efficiency calculations on industrial disclosures. Specifically, we review the 2024 sustainability reports from five leading hyperscale data center operators and seven large colocation data center providers (Table 1), which collectively represent about 86% and 22% of the hyperscale and colocation IT loads (relative to the 2024 mid values in Table 6) in the United States, respectively. Although these industrial reports have varying levels of reporting quality, they are among the most reliable and comprehensive data currently available in the public domain.

Additionally, we review multiple public sources, including government records, water utility data, and planning documents, to conservatively determine peaking factors to estimate the peak water demand. Finally, public reports are used to estimate the capacity valuation of U.S. public water system infrastructure needed to support the new data centers' peak water demand from 2024 to 2030.

While we have collected public data sources to the best of our ability and aimed to cover most plausible scenarios, projection uncertainties inherently remain, especially given the rapid growth of the data center industry and the challenge of obtaining detailed industrial data. Our parameter choices are generally conservative to avoid overestimation. As more comprehensive and preferably audited data in standardized formats become available, refinements to our analysis may be necessary.

## 4.2 Results

We now present the analysis of U.S. data centers' Scope 1 water use from 2024 to 2030, including the annual water withdrawal, consumption, total water capacity need, and valuation of the capacity need.

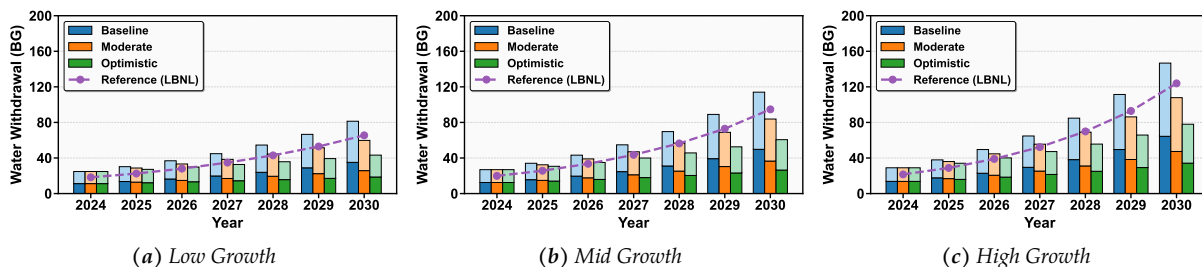
### 4.2.1 Annual water withdrawal

We first present the total annual water withdrawal by U.S. data centers from 2024 to 2030, which serves as the basis for our water capacity analysis. The results are shown in Figure 3, with detailed values provided in Table 9.

We observe that our Baseline scenario, in which water efficiency remains constant through 2030, generally yields a higher water withdrawal number than Reference (LBNL). In contrast, the Moderate and Optimistic scenarios, reflecting industry-wide WUE reductions, yield lower projected withdrawals than Reference (LBNL), highlighting the potential benefits of adopting more water-efficient cooling technologies for U.S. data centers in the future.

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<sup>4</sup>For our analysis, we re-calculate the total water *consumption* for Reference (LBNL) rather than directly using the 2024–2028 values reported in [2]. Specifically, we follow the standard annual on-site WUE definition, resulting in lower water consumption estimates than those originally reported. See Table 8 in the appendix for details.



**Figure 3:** Annual water withdrawal in billion gallons (BG) under Reference, Baseline, Moderate, and Optimistic scenarios, 2024–2030. For Baseline, Moderate, and Optimistic scenarios, dark and light shades represent hyperscale and colocation data centers, respectively. The dashed line indicates total water withdrawal for Reference (LBNL).

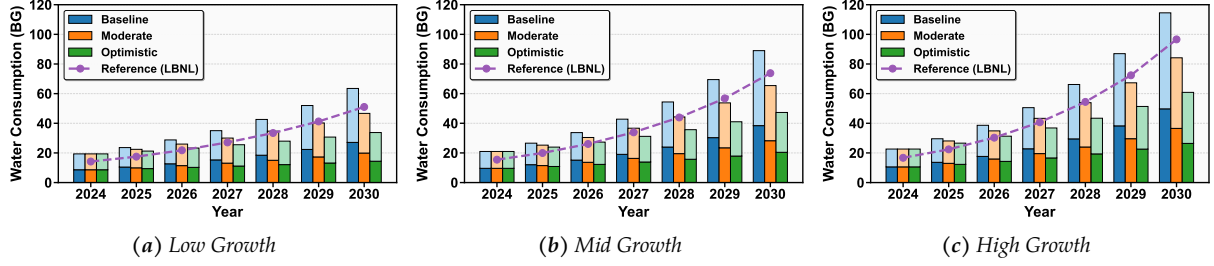
Specifically, Figure 3 illustrates an upward trend in annual water withdrawals by data centers from 2024 to 2030 across all growth scenarios. In the low-growth case, total withdrawals generally remain below 80 billion gallons even under the Baseline scenario, whereas the high-growth case projects a substantial increase that could exceed 140 billion gallons by 2030 under the Baseline scenario. Comparing the Baseline and Optimistic scenarios highlights that substantial improvements in cooling efficiency and operational practices could potentially reduce the projected total water demand by approximately half. Our results also distinguish between hyperscale and colocation data centers, showing that colocation data centers account for the majority of usage, although both segments scale substantially as overall demand rises. The growing trajectory in the mid and high growth cases underscores that, without a shift toward moderate or optimistic water efficiency improvements, the continued data center expansion can exert significant and accelerating pressure on public water resources. This finding is consistent with a recent internal projection by a leading technology company, which estimates that its Scope 1 water usage could increase by approximately 75% relative to the 2024 level [107], despite substantial improvements in water efficiency.

Based on the most recent study [49], public water supply systems withdraw an average of 35,400 million gallons per day (MGD), including 4,219 MGD of consumptive use. This represents approximately 14.5% of the total water withdrawn annually, on average, within the contiguous United States during water years 2010–2020 for major categories including crop irrigation, public supply, and thermoelectric power. Although public supply accounts for a smaller share of total withdrawals, it provides drinking water and directly supports essential human uses, making it a distinct category of water use that is comparatively more critical and constrained.

When benchmarking against total public water supply, we use the baseline values in the most study [49] without adjusting for future system-wide changes. Nationally, under the Baseline scenario, total U.S. data center water withdrawals in 2030 are projected to represent approximately 0.6% to 1.1% of total public water withdrawals in the low- and high-growth cases, respectively. Specifically, without significant improvements in water efficiency and in the high-growth case, total U.S. data center water withdrawals in 2030 could rival the current annual water supply of Los Angeles (from 2019 to 2024), which serves approximately 4 million residents [108].

Under the Optimistic scenario, which assumes substantial water efficiency gains, the national share of U.S. data center water withdrawals decreases further to approximately 0.3% to 0.6%, depending on the growth rates. This highlights the potential benefits of implementing water-efficient technologies.

Although the national share of data center withdrawals relative to total public supply remains modest, public water is fundamentally a local and seasonal resource. It is considerably more difficult to transfer across regions than electricity and is constrained by local water infrastructure, hydraulic conditions, water rights, and permitting requirements. Thus, the impacts of data centers’ Scope 1 water use should be interpreted in the context of local public water infrastructure, particularly the *available* surplus capacity of public water systems, which is often constrained due to longstanding underinvestment (Section 2.3).



**Figure 4:** Annual water consumption in billion gallons (BG) under the Reference, Baseline, Moderate, and Optimistic scenarios from 2024 to 2030. For the Baseline, Moderate, and Optimistic scenarios, dark and light shades represent hyperscale and colocation data centers, respectively. The dashed line indicates the result for Reference (LBNL).

**Table 2:** Average daily demand and water capacity need (million gallons per day), and capacity valuation from 2024 to 2030 under Reference, Baseline, Moderate, and Optimistic scenarios. The valuations are expressed as “(low, high)” cost estimates.

| Year      | Metric                          | Growth | Reference |           | Baseline |         |         | Moderate |         |         | Optimistic |         |         |
|-----------|---------------------------------|--------|-----------|-----------|----------|---------|---------|----------|---------|---------|------------|---------|---------|
|           |                                 |        | LBNL      | NS        | Total    | Hyper   | Colo    | Total    | Hyper   | Colo    | Total      | Hyper   | Colo    |
| 2024      | ADD                             | Low    | 50        | 206       | 68       | 31      | 37      | 68       | 31      | 37      | 68         | 31      | 37      |
|           |                                 | Mid    | 55        | 221       | 74       | 34      | 40      | 74       | 34      | 40      | 74         | 34      | 40      |
|           |                                 | High   | 59        | 236       | 79       | 38      | 42      | 79       | 38      | 42      | 79         | 38      | 42      |
|           | Capacity                        | Low    | 225       | 927       | 306      | 138     | 168     | 306      | 138     | 168     | 306        | 138     | 168     |
|           |                                 | Mid    | 245       | 995       | 332      | 153     | 178     | 332      | 153     | 178     | 332        | 153     | 178     |
|           |                                 | High   | 265       | 1064      | 357      | 169     | 189     | 357      | 169     | 189     | 357        | 169     | 189     |
| 2030      | ADD                             | Low    | 179       | 599       | 223      | 96      | 127     | 164      | 71      | 93      | 118        | 51      | 67      |
|           |                                 | Mid    | 259       | 832       | 312      | 136     | 176     | 230      | 100     | 129     | 166        | 72      | 94      |
|           |                                 | High   | 339       | 1065      | 402      | 176     | 226     | 295      | 130     | 166     | 214        | 94      | 120     |
|           | Capacity                        | Low    | 807       | 2694      | 1003     | 433     | 570     | 737      | 318     | 419     | 533        | 230     | 303     |
|           |                                 | Mid    | 1167      | 3744      | 1406     | 613     | 793     | 1033     | 451     | 583     | 747        | 326     | 421     |
|           |                                 | High   | 1528      | 4793      | 1809     | 794     | 1015    | 1330     | 583     | 746     | 961        | 422     | 539     |
| 2024→2030 | Capacity Increase               | Low    | 582       | 1767      | 697      | 295     | 402     | 431      | 180     | 251     | 227        | 92      | 135     |
|           |                                 | Mid    | 922       | 2749      | 1074     | 460     | 614     | 702      | 297     | 404     | 415        | 172     | 243     |
|           |                                 | High   | 1262      | 3730      | 1451     | 625     | 826     | 972      | 415     | 558     | 604        | 253     | 351     |
|           | Capacity Valuation (\$ Billion) | Low    | (6, 23)   | (18, 71)  | (7, 28)  | (3, 12) | (4, 16) | (4, 17)  | (2, 7)  | (3, 10) | (2, 9)     | (1, 4)  | (1, 5)  |
|           |                                 | Mid    | (9, 37)   | (27, 110) | (11, 43) | (5, 18) | (6, 25) | (7, 28)  | (3, 12) | (4, 16) | (4, 17)    | (2, 7)  | (2, 10) |
|           |                                 | High   | (13, 50)  | (37, 149) | (15, 58) | (6, 25) | (8, 33) | (10, 39) | (4, 17) | (6, 22) | (6, 24)    | (3, 10) | (4, 14) |

#### 4.2.2 Annual water consumption

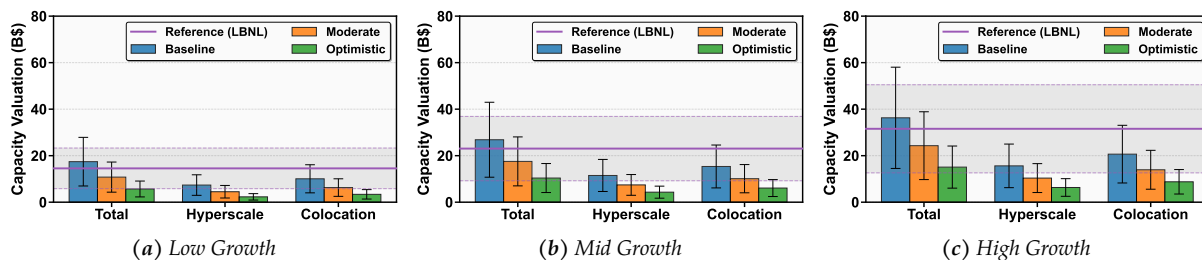
Water consumption is an important, and sometimes regulated [36,66], performance metric for public water systems, as it directly affects regional water availability, particularly during drought conditions [47]. Thus, while our primary focus is on data centers’ Scope 1 water withdrawals, we also present Scope 1 water consumption in Figure 4 for completeness, with detailed values provided in Table 8. As shown, total U.S. data center water consumption follows a trend similar to total water withdrawals in Figure 3.

Compared with the contiguous U.S. public water supply’s total consumptive use of 4,219 MGD [49], data centers’ water consumption in 2030 is projected to represent approximately 4% to 7% under the Baseline scenario and 2% to 4% under the Optimistic scenario, depending on the IT load growth rates. These shares are notably higher than the corresponding withdrawal shares, reflecting the higher consumptive ratio of data center water use compared with other users served by public water systems.

While these figures represent national aggregates and already indicate a non-negligible impact, the implications of data centers’ consumptive water use are more appropriately assessed at local and seasonal scales, where certain public water systems may experience disproportionately greater impacts.

#### 4.2.3 New water capacity demand

A data center’s total water capacity requirement, in terms of maximum daily water demand, is a critical planning consideration and may not be fully supported by existing public water systems. To quantify this water capacity requirement, the average daily demand (ADD) needs to be adjusted using a peaking factor. In this study, we review multiple public records and *conservatively* adopt an average peaking factor of 4.5, reflecting the practice that data centers often provision water capacity with worst-case considerations and



**Figure 5:** Valuation of the new water infrastructure capacity to meet U.S. data centers’ new peak water demand from 2024 to 2030 under different scenarios for low, mid, and high growth projections.

redundancy, analogous to approaches used in power infrastructure planning. As evaporative-assisted cooling becomes more common, it can improve the annual water efficiency while simultaneously increasing the peaking factor, since such systems typically operate only 5 to 15% of the year. For example, it is common for leading technology companies’ planned peaking factors to range from 6 to 8 or even higher for their state-of-the-art data centers under construction. Additional details regarding the peaking factor are available in Appendix A.6.

The results are summarized in Table 2. While we aggregate U.S. data centers’ water capacity needs, it is important to note that an individual data center’s actual peak daily water use can be lower than its total capacity requirement (which typically accounts for redundancy) and may not align nationally on the same day, as the hottest days driving the peak water demand generally occur asynchronously across regions.

From 2024 to 2030, the estimated new water capacity needed to support U.S. data centers’ peak water demand ranges from 697 to 1,451 MGD under the Baseline scenario. For comparison, New York City delivers approximately 1 billion gallons of water per day to nearly 9 million residents in 2024 [50]. Hypothetically, if all the new water capacity needed by U.S. data centers from 2024 to 2030 in the high-growth case were pooled, it could supply New York City for most of the year, except for the few peak days in the summer. While supplying water at the scale of New York City is far more complex than simple aggregation, this comparison highlights the magnitude of U.S. data centers’ total water capacity needs due to their high peaking factors.

Under the Optimistic scenario, which assumes substantial water reductions, the new total water capacity need decreases to between 227 and 604 MGD, depending on IT load growth rates between 2024 and 2030. Even with continuous efficiency gains corresponding to a 10% compound annual reduction in WUE, high-growth IT loads can still drive the total water capacity need to a level that, if aggregated hypothetically, could supply roughly half of New York City’s daily public water demand (2024 level).

#### 4.2.4 Valuation of new water capacity

We now quantify the valuation of the total new water capacity needed for U.S. data centers from 2024 to 2030. To establish a plausible range of cost estimates, we review public reports on 17 water infrastructure projects of varying complexity, type, and geography, including 6 projects specifically related to data centers. Table 10 indicates that a reasonable valuation (in 2021–2025 dollars, without inflation adjustment) for water infrastructure is **\$10–\$40 million per MGD**, depending on factors such as project complexity.

Using this cost range, Figure 5 and Table 2 present the total valuation of the new water capacity needed to support U.S. data centers through 2030. The overall valuation is generally on the order of \$10 billion. Specifically, under the Baseline scenario, the valuation ranges from \$7–28 billion in the low-growth case and \$15–58 billion in the high-growth case. Under the Optimistic scenario, the valuations decrease to \$2–9 billion and \$6–24 billion in the low-growth and high-growth cases, respectively.

Although these billion-dollar-level investments are modest compared to the overall AI and data center industry, they may not be affordable for many public water systems that are already grappling with financial challenges and large funding needs [28, 29]. Thus, corporate–community partnerships to expand water infrastructure are particularly important, meeting data centers’ water needs while avoiding increased water rates for local ratepayers amid rising water affordability challenges [31].

Importantly, our valuation may differ from the actual new funding requirement, as some of this capacity may already be available and (partially) funded by existing sources such as state–federal support, bonds, or current ratepayer contributions. Nonetheless, similar to “Water Positive” initiatives that replenish water to offset Scope 1 consumption [98,99], even if the water capacity is already available, data centers can add new capacity to proactively offset their capacity needs, allowing the host community to retain limited available infrastructure capacity for future growth. Further details are provided in Section 5.

## 5 Recommendations

In this section, we provide a set of key recommendations to address the growing water capacity demand of U.S. data centers and its impact on public water systems, while additional recommendations to address the overall water efficiency are available in Appendix F.

**Recommendation 1:** [REDACTED]. While total annual water withdrawal and consumption are important metrics, data centers’ peak water demand is critical for public water system planning and management. However, data center operators rarely disclose their peak water demand. We therefore recommend that data center [REDACTED], to provide a comprehensive view of operational water impacts on public water systems.

Additionally, to assess peak water efficiency, we recommend extending the standard annualized water usage effectiveness (WUE) metric to define the [REDACTED] as follows.

**Definition 1 (pWUE)** *The peak water usage effectiveness, pWUE, has a unit of L/kWh and is defined as*

$$pWUE = \max_{t \in \mathcal{T}} \frac{WaterConsumption(t)}{ITEnergy(t)}, \quad (2)$$

where  $WaterConsumption(t)$  and  $ITEnergy(t)$  denote the total Scope 1 water consumption and IT energy consumption on day  $t$ , respectively, and  $\mathcal{T}$  represents the period considered, such as a calendar or fiscal year.

The pWUE metric can be determined from either actual measurements for post-hoc reporting and analysis, or from projected values for planning purposes. Additionally, when the IT load remains relatively flat, pWUE can be simply expressed as  $pWUE = \beta \cdot WUE$ , where  $\beta \in [1, \infty)$  is the daily peaking factor (either measured or planned), and  $WUE \geq 0$  is the annual WUE commonly reported in the literature [2] and in industry disclosures [80].

**Recommendation 2: Develop corporate-community partnerships.** The lack of technical and financial capacity remains a critical challenge for many U.S. public water systems [28]. Recently, [REDACTED] have emerged as a promising approach [3,19,91], playing a key role in supporting resilient water infrastructure in host communities. By [REDACTED] upgrades, data centers can help mitigate the added strain their operations place on public water supplies. Additionally, sourcing non-potable water for industrial use, such as recycled or reclaimed wastewater, can help reduce demand on municipal drinking water supplies for both data center operations and community needs [109]. We therefore recommend that data centers actively participate in these partnerships, aligning corporate responsibility with community well-being and long-term water resilience.

**Recommendation 3: “Pipe Neutral” commitments.** Technology companies have increasingly committed to “Water Positive” initiatives by replenishing more water than their Scope 1 consumption [98,99]. However, these replenishment efforts focus on total volumetric benefits and may not address the impacts of data centers’ peak water use on public water systems. As a complement to the recent community-first AI approaches [3], we recommend that d [REDACTED] while allowing the host community to retain limited water infrastructure capacity for future growth. We refer to this approach as [REDACTED] or colloquially, “[REDACTED]”

To quantify the net contribution of a data center to public water systems, we formally define a metric called the Water Capacity Impact (WCI) score as follows.

**Definition 2 (WCI)** *The Water Capacity Impact (WCI) score is defined as*

$$WCI = \frac{C_{Added} - C_{Allocated}}{C_{Available}}, \quad (3)$$

where  $C_{Added}$ ,  $C_{Allocated}$ , and  $C_{Available}$  denote the water capacity added by the data center, allocated to the data center, and currently available for allocation in the host community, respectively.

A WCI score less than  $-1$  indicates that the available water capacity is insufficient to meet the data center’s needs; a score between  $-1$  and  $0$  indicates a net resource usage of the water capacity; and a score greater than  $0$  indicates that the data center contributes more water capacity to the public water system than it needs, representing a positive contribution. A concrete example is a large technology company’s recent commitment of up to \$400 million to local public water infrastructure to support its new Louisiana data centers [16], effectively reversing the otherwise negative WCI score.

**Recommendation 4: Coordinated water-power planning.** Water-based evaporative cooling uses water, but can reduce peak power demand by 10–35% compared to waterless dry cooling [44, 60]. Thus, water used for evaporative assistance—even if applied only on the hottest days—functions like a “water battery,” alleviating peak-hour demand on the electrical grid during the summer. Indeed, while regional water availability remains important, evaporative cooling, if used responsibly, can be an economically competitive approach to shaving peak power demand compared to traditional generation methods (Appendix G). This aligns with a leading technology company’s statement that “water is the most efficient means of cooling in many places” [17]. In addition, some large data centers have recently secured up to 8 MGD of peak water capacity to reduce the electricity demand during the summer [18, 21], with associated water infrastructure upgrades costing hundreds of millions of dollars [27].

On the other hand, opportunistically utilizing available surplus power, such as solar power during summer midday when water evaporative rates are highest, can reduce peak water demand without overloading the grid. This strategy is particularly beneficial when public water systems are stressed during heatwaves.

We therefore recommend a coordinated water-power strategy to optimally manage the tradeoff: (1) responsibly leveraging water to alleviate grid stresses while minimizing impacts on local water resources; and (2) opportunistically utilizing power to reduce the burden on public water systems without overloading the grid.

## 6 Conclusion

In this paper, we examine data centers’ direct water withdrawal in the United States and their impacts on public water systems. We first show that, compared to typical water users such as residential buildings, data centers have a higher consumptive ratio and a higher peaking factor, even when their annual water use remains modest. Using public sources including industrial disclosures and government records, we quantify the U.S. data center water use from 2024 to 2030. Our analysis shows that, under the Baseline scenario, data centers’ total water withdrawal in 2030 accounts for 0.6%–1.1% of total public water withdrawals in the contiguous United States, while their water consumption reaches 4%–7% of total public water consumption due to the high consumptive ratio. Most importantly, under the Baseline scenario, U.S. data centers are projected to require 697–1,451 MGD of new water capacity, valued at up to \$58 billion and comparable to New York City’s average daily supply of roughly 1,000 MGD. Under an Optimistic scenario with a 10% compound annual reduction in water use intensity, these figures decrease to approximately 30–50% of the Baseline scenario values. While these numbers are national aggregates, local and seasonal impacts on specific public water systems may be disproportionately larger.

Finally, we provide recommendations to address the growing water demand of U.S. data centers, including reporting peak water use, developing corporate-community partnerships, adopting a Water Capacity Neutral approach (colloquially “Pipe Neutral”) to allow host communities to retain limited water capacity, and implementing coordinated water-power planning to optimally manage the tradeoff. Together, these strategies enhance operational efficiency, protect local water systems, and ensure long-term community resilience while supporting technological advancement and data center growth.

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## Appendix

### A Detailed Methodology for Quantifying and Forecasting Data Centers' Water Demand

This section presents the detailed methodology of quantifying and forecasting data centers' water demand. It describes the data sources and calculation procedures used to estimate IT equipment energy consumption (hereafter referred to as IT energy) and water use effectiveness (WUE) under different scenarios from 2024 to 2030, which are subsequently used to quantify the average daily demand (ADD) and water capacity demand measured in terms of the maximum daily demand (MDD).

#### A.1 Key Metrics and Definitions

We first define the key metrics used in this study. Unless otherwise specified, energy, water consumption, and water withdrawal refer to annual values and include only data center operations, excluding office and other non-data-center activities. When converting annual quantities to daily averages, we apply 365 days per year, without distinguishing leap and non-leap years. All energy- and water-related quantities presented in the subsequent analysis are computed based on these definitions.

$$\text{WUE} = \frac{\text{On-site Water Consumption}}{\text{IT Energy}} \quad (4)$$

$$\text{PUE} = \frac{\text{Total Energy}}{\text{IT Energy}} \quad (5)$$

$$\text{Water Consumptive Ratio} = \frac{\text{Water Consumption}}{\text{Water Withdrawal}} \quad (6)$$

$$\text{ADD} = \frac{\text{Water Withdrawal}}{365} \quad (7)$$

$$\text{MDD} = \text{ADD} \times \text{Peaking Factor} \quad (8)$$

#### A.2 IT Energy

The Lawrence Berkeley National Laboratory (LBNL) report [2] provides a detailed classification of data center types, which are further aggregated into three groups in our study: hyperscale, colocation, and others. As WUEs can differ across data center types, we estimate IT energy at the data center type level to ensure consistent WUE calculation and aggregation.

LBNL reports total the U.S. data center electricity consumption, PUE, and WUE for 2024–2028 under low and high growth rates (Table 3). In principle, aggregate IT energy can be derived from total energy and PUE using Eq. (5). Over 2024–2028, the reported total data center energy exhibits compound annual growth rates (CAGRs) of approximately 13% and 27% under the low and high rates, respectively. These growth rates are broadly consistent with other projections, which report CAGRs of approximately 20% through 2030 [104] and approximately 22.4% over 2023–2030 under a medium-growth scenario [105]. Given this consistency, the total data center energy for 2029 and 2030 is extrapolated by applying the corresponding CAGRs derived from the 2024–2028 period.

For PUE, LBNL reports values through 2028. PUE values for 2029 and 2030 are estimated by extending the observed trend, assuming an annual reduction of 0.02. Details regarding WUE are discussed in Section A.3. Using the estimated total energy and PUE values, aggregate IT energy for 2024–2030 is computed accordingly. Details are shown in Table 3.

However, LBNL does not report the annual distribution of total energy across data center types for 2025 to 2027. As a result, IT energy derived directly from total energy and PUE would only yield aggregate values and would not support type-specific estimation. To address this limitation, we construct type-specific IT energy estimates using a bottom-up approach based on the disaggregated IT energy in 2024 and 2028 reported by LBNL. Therefore, the aggregate IT energy derived from total energy and PUE is not adopted in our type-specific analysis. Instead, it only serves as a reference to evaluate the reasonableness of our resulting bottom-up IT energy estimates.

**Table 3:** LBNL-reported U.S. data center total energy, PUE, WUE, and aggregate IT energy under low and high assumptions (2024–2030). The values for 2029 and 2030 are extended based on the LBNL values for 2024 to 2028.

| Year | WUE (L/kWh) |      | PUE  |      | Total Energy (TWh) |        | IT Energy (TWh) |        |
|------|-------------|------|------|------|--------------------|--------|-----------------|--------|
|      | Low         | High | Low  | High | Low                | High   | Low             | High   |
| 2024 | 0.39        | 0.40 | 1.33 | 1.45 | 185.00             | 232.00 | 139.10          | 160.00 |
| 2025 | 0.40        | 0.42 | 1.23 | 1.45 | 203.00             | 303.00 | 165.04          | 208.97 |
| 2026 | 0.42        | 0.44 | 1.19 | 1.40 | 238.00             | 388.00 | 200.00          | 277.14 |
| 2027 | 0.44        | 0.46 | 1.17 | 1.37 | 279.00             | 481.00 | 238.46          | 351.09 |
| 2028 | 0.45        | 0.48 | 1.15 | 1.35 | 325.00             | 578.00 | 282.61          | 428.15 |
| 2029 | 0.46        | 0.49 | 1.13 | 1.33 | 367.25             | 734.06 | 325.00          | 551.92 |
| 2030 | 0.47        | 0.50 | 1.11 | 1.31 | 414.99             | 932.26 | 373.87          | 711.65 |

Specifically, in the LBNL report, IT energy is decomposed into server, network, and storage components. Server energy is reported for 2024 and 2028 under low and high rate assumptions for each data center type. In contrast, network and storage energy are reported for 2024–2028 only at the national level, without low-high distinctions and without differentiation by data center type.

Based on the reported server energy values for 2024 and 2028, the CAGRs of server energy over 2024–2028 are approximately 22% and 31% for hyperscale data centers under the low and high rate assumptions, respectively, and approximately 24% and 34% for colocation data centers. In contrast, server energy in the “Others” category decreases over this period, yielding negative CAGRs of approximately  $-7\%$  and  $-8\%$  under the low and high assumptions, respectively. These type-specific growth rates are then applied to construct annual server energy trajectories for 2024–2030 by interpolating intermediate years (2025–2027) and extrapolating later years (2029–2030), in line with the extension applied to the aggregate LBNL total energy projections. Although the “Others” category shows higher values under the low assumption than under the high assumption, the terminology of “low” and “high” is consistently defined according to the total server energy assumptions reported by LBNL to maintain consistency across data center types. A mid estimate is further constructed as the arithmetic average of the corresponding low and high estimates.

The server energy estimates by data center type are summarized in Table 4.

**Table 4:** Type-specific U.S. data center server energy used in our IT energy estimation (2024–2030). Mid values are defined as the arithmetic average of the corresponding low and high estimates.

| Year | Hyperscale (TWh) |               |        | Colocation (TWh) |               |        | Others (TWh) |              |       | Total (TWh) |               |        |
|------|------------------|---------------|--------|------------------|---------------|--------|--------------|--------------|-------|-------------|---------------|--------|
|      | Low              | Mid           | High   | Low              | Mid           | High   | Low          | Mid          | High  | Low         | Mid           | High   |
| 2024 | 48.66            | <b>55.00</b>  | 61.33  | 50.67            | <b>54.67</b>  | 58.67  | 14.00        | <b>14.00</b> | 14.00 | 113.33      | <b>123.67</b> | 134.00 |
| 2025 | 59.30            | <b>69.94</b>  | 80.57  | 62.59            | <b>70.72</b>  | 78.84  | 13.08        | <b>12.98</b> | 12.87 | 134.98      | <b>153.63</b> | 172.28 |
| 2026 | 72.27            | <b>89.06</b>  | 105.84 | 77.32            | <b>91.64</b>  | 105.95 | 12.22        | <b>12.03</b> | 11.83 | 161.81      | <b>192.72</b> | 223.63 |
| 2027 | 88.07            | <b>113.56</b> | 139.05 | 95.52            | <b>118.95</b> | 142.38 | 11.42        | <b>11.15</b> | 10.88 | 195.01      | <b>243.66</b> | 292.30 |
| 2028 | 107.33           | <b>145.00</b> | 182.67 | 118.00           | <b>154.67</b> | 191.33 | 10.67        | <b>10.34</b> | 10.00 | 236.00      | <b>310.00</b> | 384.00 |
| 2029 | 130.80           | <b>185.39</b> | 239.97 | 145.77           | <b>201.44</b> | 257.11 | 9.97         | <b>9.58</b>  | 9.19  | 286.54      | <b>396.41</b> | 506.28 |
| 2030 | 159.40           | <b>237.33</b> | 315.26 | 180.07           | <b>262.79</b> | 345.51 | 9.31         | <b>8.88</b>  | 8.45  | 348.79      | <b>509.01</b> | 669.22 |

For network and storage energy, the LBNL report provides aggregate U.S. totals for 2024–2028. Using the reported values in 2024 and 2028, we compute separate CAGRs for network energy (approximately 26%) and storage energy (approximately 7%). These growth rates are applied to extrapolate total network and storage energy for 2029 and 2030. The resulting annual network and storage energy is then allocated across hyperscale, colocation, and others according to the year-specific server energy shares of the three data center types. This allocation is performed separately under the low and high assumptions. Consistent with the definition adopted above, the terms “low” and “high” refer to the corresponding LBNL total server energy assumptions rather than to alternative allocation rules or proportion levels. The corresponding estimates are summarized in Table 5.

By summing server, network, and storage energy within each data center type, we obtain IT energy for three data center types in our analysis: Hyperscale, Colocation, and Others. Aggregating across the three

**Table 5:** Estimated U.S. data center network and storage energy used in our IT energy estimation, 2024–2030. Shares represent each component’s proportion relative to total server energy under the low and high assumptions.

| Year | Energy (TWh) |         | Storage Ratio |      | Network Ratio |      |
|------|--------------|---------|---------------|------|---------------|------|
|      | Storage      | Network | Low           | High | Low           | High |
| 2024 | 17.10        | 9.08    | 0.15          | 0.13 | 0.08          | 0.07 |
| 2025 | 17.75        | 12.35   | 0.13          | 0.10 | 0.09          | 0.07 |
| 2026 | 18.44        | 16.18   | 0.11          | 0.08 | 0.10          | 0.07 |
| 2027 | 19.70        | 19.92   | 0.10          | 0.07 | 0.10          | 0.07 |
| 2028 | 22.02        | 23.19   | 0.09          | 0.06 | 0.10          | 0.06 |
| 2029 | 23.46        | 29.32   | 0.08          | 0.05 | 0.10          | 0.06 |
| 2030 | 24.99        | 37.06   | 0.07          | 0.04 | 0.11          | 0.06 |

types yields total U.S. IT energy. The resulting estimates are summarized in Table 6.

**Table 6:** Estimated U.S. data center IT energy by data center type in our analysis (2024–2030). IT energy equals the sum of server, network, and storage energy, with network and storage energy allocated across types according to annual server energy shares. Mid values are defined as the arithmetic average of the corresponding low and high estimates.

| Year | Hyperscale (TWh) |               |        | Colocation (TWh) |               |        | Others (TWh) |              |       | Total IT (TWh) |               |        |
|------|------------------|---------------|--------|------------------|---------------|--------|--------------|--------------|-------|----------------|---------------|--------|
|      | Low              | Mid           | High   | Low              | Mid           | High   | Low          | Mid          | High  | Low            | Mid           | High   |
| 2024 | 59.90            | <b>66.81</b>  | 73.31  | 62.38            | <b>66.25</b>  | 70.13  | 17.23        | <b>16.98</b> | 16.74 | 139.51         | <b>149.85</b> | 160.18 |
| 2025 | 72.52            | <b>83.59</b>  | 94.65  | 76.55            | <b>84.58</b>  | 92.62  | 16.00        | <b>15.56</b> | 15.12 | 165.08         | <b>183.73</b> | 202.38 |
| 2026 | 87.73            | <b>104.98</b> | 122.23 | 93.87            | <b>108.11</b> | 122.35 | 14.84        | <b>14.25</b> | 13.66 | 196.43         | <b>227.34</b> | 258.25 |
| 2027 | 105.96           | <b>131.93</b> | 157.90 | 114.93           | <b>138.30</b> | 161.68 | 13.74        | <b>13.05</b> | 12.35 | 234.63         | <b>283.28</b> | 331.92 |
| 2028 | 127.89           | <b>166.03</b> | 204.18 | 140.61           | <b>177.23</b> | 213.86 | 12.71        | <b>11.95</b> | 11.18 | 281.21         | <b>355.21</b> | 429.21 |
| 2029 | 154.89           | <b>209.94</b> | 264.99 | 172.62           | <b>228.26</b> | 283.91 | 11.81        | <b>10.98</b> | 10.15 | 339.31         | <b>449.18</b> | 559.05 |
| 2030 | 187.76           | <b>266.12</b> | 344.49 | 212.11           | <b>294.83</b> | 377.55 | 10.97        | <b>10.10</b> | 9.24  | 410.84         | <b>571.05</b> | 731.27 |

Comparing the IT energy values in Table 6 (our analysis) and Table 3 (LBNL), we find that the differences are reasonably small. Specifically, from 2024 to 2028, the percentage deviation remains constantly small, ranging from -1.8% to +0.3% under the low assumption and from -6.8% to +0.2% under the high assumption, indicating that our estimates are generally lower than or close to the LBNL values. In 2029–2030, the deviation becomes positive, reaching +4.4% and +9.9% for the low case and +1.3% and +2.8% for the high case, respectively. Although our estimates exceed the LBNL values in these later years, the differences remain moderate and within an acceptable range and align well with other projections through 2030 (e.g., [5, 104, 105]).

Overall, the results suggest that our estimation remains close to the LBNL values. Unless otherwise specified, the IT energy values used in this study refer to those reported in Table 6.

### A.3 Reference Scenarios

This subsection describes the calculation procedures for the Reference (LBNL) and Reference (NS) scenarios. For both scenarios, the respective U.S.-wide average WUE is applied and multiplied by the total IT energy (for all the data center types) to obtain the U.S. data centers’ total water.

**Reference (LBNL) [2].** The LBNL report provides national-level WUE estimates for 2024–2028 under low and high assumptions only. For 2029–2030, WUE values are estimated by extending the observed trend, assuming an annual increase of 0.01. Water consumption under the LBNL reference is calculated by combining low IT energy with low WUE and high IT energy with high WUE.

**Reference (NS) [5].** The recent study classifies data centers based on the adoption of advanced liquid cooling (ALC) and reports state-level PUE and WUE values with and without ALC for 2024. The Reference (NS) scenario in our study adopts the baseline case defined in [5], which assumes an initial ALC adoption rate of 5% in 2024, increasing at a CAGR of 20%, together with the corresponding PUE and WUE values reported for that baseline case. Nationwide weighted averages are computed using each state’s total data

center energy consumption from EPRI [110]. Following the assumed ALC adoption trajectory, the weighted-average WUE in each year is calculated as:

$$\text{WUE}_{\text{year}} = (1 - \alpha_{\text{year}}) \text{WUE}_{\text{base}} + \alpha_{\text{year}} \text{WUE}_{\text{ALC}_{\text{base}}}, \quad (9)$$

where  $\alpha_{\text{year}}$  denotes the ALC adoption rate in a given year. While the study [5] considers various WUE scenarios and focuses on AI data centers which generally have low WUEs, we apply its (baseline) WUE reference to all data center types solely for orders-of-magnitude cross-checking, helping to prevent overestimation; instead, we rely primarily on the LBNL results as our reference.

The resulting WUE values for the Reference (LBNL) and Reference (NS) scenarios are summarized in Table 7. Unless otherwise specified, the mid values of water consumption, water withdrawal, ADD and MDD are defined as the arithmetic average of the corresponding low and high quantities.

**Table 7:** WUE (L/kWh) under Reference, Baseline, Moderate, Optimistic scenarios, 2024–2030.

| Year | Reference |       |       | Baseline  |       |       |       | Moderate  |       |       |       | Optimistic |       |       |       |
|------|-----------|-------|-------|-----------|-------|-------|-------|-----------|-------|-------|-------|------------|-------|-------|-------|
|      | LBNL      |       | NS    | U.S.-wide |       | Hyper | Colo  | U.S.-wide |       | Hyper | Colo  | U.S.-wide  |       | Hyper | Colo  |
|      | Low       | High  |       | Low       | High  |       |       | Low       | High  |       |       | Low        | High  |       |       |
| 2024 | 0.385     | 0.395 | 1.582 | 0.525     | 0.534 | 0.546 | 0.650 | 0.525     | 0.534 | 0.546 | 0.650 | 0.525      | 0.534 | 0.546 | 0.650 |
| 2025 | 0.401     | 0.419 | 1.581 | 0.541     | 0.553 | 0.546 | 0.650 | 0.514     | 0.525 | 0.519 | 0.617 | 0.487      | 0.497 | 0.492 | 0.585 |
| 2026 | 0.420     | 0.444 | 1.579 | 0.554     | 0.566 | 0.546 | 0.650 | 0.500     | 0.511 | 0.493 | 0.586 | 0.449      | 0.459 | 0.443 | 0.526 |
| 2027 | 0.437     | 0.464 | 1.577 | 0.565     | 0.576 | 0.546 | 0.650 | 0.484     | 0.494 | 0.468 | 0.557 | 0.412      | 0.420 | 0.398 | 0.473 |
| 2028 | 0.450     | 0.480 | 1.575 | 0.573     | 0.584 | 0.546 | 0.650 | 0.467     | 0.475 | 0.445 | 0.529 | 0.376      | 0.383 | 0.359 | 0.426 |
| 2029 | 0.460     | 0.490 | 1.572 | 0.580     | 0.589 | 0.546 | 0.650 | 0.449     | 0.456 | 0.423 | 0.503 | 0.342      | 0.348 | 0.323 | 0.384 |
| 2030 | 0.470     | 0.500 | 1.569 | 0.585     | 0.593 | 0.546 | 0.650 | 0.430     | 0.436 | 0.402 | 0.477 | 0.311      | 0.315 | 0.290 | 0.345 |

#### A.4 Baseline, Moderate, and Optimistic Scenarios

This subsection describes the details for the Baseline, Moderate, and Optimistic WUE scenarios. All the three scenarios share the same 2024 WUE values and differ only in their assumed compound annual changes: 0% per year for the Baseline scenario,  $-5\%$  per year for the Moderate scenario, and  $-10\%$  per year for the Optimistic scenario. Accordingly, the key task in scenario construction is to estimate type-specific WUE values for the base year 2024, from which WUE trajectories for 2025–2030 are derived.

##### A.4.1 The Year of 2024

To estimate the 2024 U.S.-level WUE for different data center types, we select a set of large data center operators to estimate WUE separately for hyperscale and colocation data centers, while WUE for the “Others” data center type is assumed to be zero for a conservative estimate. The estimation relies primarily on publicly available company-wide sustainability reports released for the calendar (or fiscal) year of 2024 released by 12 large operators, including five hyperscale operators and seven colocation operators [17, 106, 111–122]. We do not link these specific references to individual data center companies in order to avoid direct comparisons and maintain their anonymity while preserving our transparency to the extent possible.

The selected hyperscale and colocation data center operators collectively represent approximately 86% and 22% of U.S. hyperscale and colocation IT loads in 2024, respectively, based on the mid IT estimates reported in Table 6. Therefore, the WUE values aggregated across these companies provide a reasonable estimate of industry practices.

Although reporting formats and data granularity vary across companies, the overall data quality is generally sufficient for our analysis. Reported values are followed as closely as possible, and explicit assumptions are introduced only when necessary to ensure internal consistency. Based on these company-level data, U.S.-level type-specific WUE values for 2024 are derived and subsequently used to construct scenario-specific trajectories.

For each selected operator, we collect (and estimate if needed) its U.S. data center-level IT energy (MWh), total energy (MWh), PUE, water consumption (ML), water withdrawal (ML), WUE (L/kWh), the water consumptive ratio, municipal water ratio, and potable water ratio. The resulting values are summarized in Table 1. Note that, based on publicly disclosed data, we can reliably calculate the U.S. potable water ratio for only one data center operator (94.40% for Hyperscale-1) and the global potable water ratios for

two other operators. Therefore, we exclude potable ratios in Table 1 and instead present them only in the operator-specific results below.

The reported values in Table 1 are adopted directly whenever explicitly disclosed. When specific metrics are unavailable, values estimated or assigned based on clearly stated assumptions or publicly available third-party information are introduced and identified with an asterisk “\*” in Table 1.

Unless otherwise specified, the municipal and potable water ratios refer to shares of water directly supplied by the municipal/public water systems and potable water relative to the total water withdrawal. If withdrawal-based ratios are explicitly reported, they are used directly; if only consumption-based ratios are disclosed, the corresponding ratios are derived from reported water consumption values and marked with a dagger symbol (†). If neither withdrawal- nor consumption-based ratios are available, the corresponding entry is denoted by “–”, indicating that the value is unreported and cannot be reliably estimated, although public potable water is likely used as a general industry practice. Energy and water quantities are rounded to the nearest integer, while all other numerical values are rounded to two decimal places.

For hyperscale operators, total water consumption generally includes both data center water use and office-related water use. When separate reporting is unavailable, office water *consumption* is estimated using an industry-standard consumptive ratio of 10% [17], while data center water consumption is estimated using a default consumptive ratio of 75% [47]. For colocation operators, office water use is assumed to be negligible, as they typically employ significantly fewer staff than hyperscalers, which maintain large teams of software developers and corporate employees; accordingly, reported water consumption is attributed primarily to data center operations. Additional default settings and estimation details are provided in the operator-specific calculation procedures presented below.

**Hyperscale-1.** This operator reports data center water withdrawal and water consumption at the location/site level. We aggregate all U.S. data center sites to obtain total U.S. data center water withdrawal (approximately 29,510 ML) and water consumption (approximately 23,120 ML), yielding a water consumptive ratio of approximately 0.78. The operator reports North America-level electricity consumption (treated as U.S.) but does not separately disclose electricity use attributable to data center operations. To estimate U.S. data center electricity consumption, we apply the ratio of global data center electricity consumption to the combined global electricity consumption for data center and office operations (approximately 96%). This yields an estimated U.S. data center electricity consumption of approximately 22 TWh. A global PUE value of 1.09 is then applied to derive U.S. data center IT energy, resulting in approximately 20 TWh. Finally, WUE is calculated as the ratio of U.S. data center water consumption to U.S. data center IT energy, yielding approximately 1.13 L/kWh. In addition, the operator reports location-level potable water use. Based on the aggregated U.S. data center locations, the U.S.-level potable water ratio is approximately 94.40%.

**Hyperscale-2.** This operator reports Americas-level (North and South America combined) PUE and WUE values of 1.16 and 0.38 L/kWh for 2024, respectively, which we adopt as proxies for U.S. data center operations. Total water withdrawal and water consumption are reported at the North America level and are treated as U.S.-level totals in this study (5,789 ML and 3,136 ML, respectively). U.S. data center water withdrawal and water consumption are estimated by applying a data center water consumptive ratio of 0.75 and an office water consumptive ratio of 0.10. Combined with the water withdrawal and consumption numbers, this yields approximately 3,934 ML of U.S. data center water withdrawal and 2,951 ML of U.S. data center water consumption. Using the estimated U.S. data center water consumption and the reported WUE, U.S. data center IT energy is calculated as approximately 7.8 TWh. Total electricity consumption is then derived by applying the reported PUE, yielding approximately 9.0 TWh. Although a North America-level electricity consumption of approximately 16.6 TWh is reported, it is not disaggregated for data center operations. We therefore base our estimation on the disclosed water quantities and estimate electricity use accordingly. Note that by applying 3,136 ML (including office use but assumed here to be entirely for data centers) with a WUE of 0.38 L/kWh and a PUE of 1.16, we obtain an alternative estimate of 9.6 TWh for the North America-level total data center electricity consumption, which still differs from the reported total electricity consumption of 16.6 TWh in North America (including non-data center electricity consumption). This discrepancy is likely due to reporting or accounting inconsistencies by the operator. The operator reports global water consumption by source. Third-party water accounts for 5,775 ML out of a total water consumption of 5,807 ML worldwide. We use this proportion as a proxy for the U.S. data center municipal water ratio, yielding approximately 99.45%.

**Hyperscale-3.** This operator reports data center water withdrawal at the location/site level, which allows us to aggregate all facilities explicitly identified as located in the United States and obtain total U.S. data center water withdrawal. Based on the disclosed values, U.S. water withdrawal is approximately 2,365 ML out of a global data center water withdrawal of approximately 4,143 ML, corresponding to a share of about 0.57. We directly sum the water withdrawals of all disclosed data center locations, and the resulting total is slightly different from the reported total water withdrawal 4,145 ML due to rounding errors. The U.S. data center water consumption is then estimated by scaling the reported global data center water consumption (2974 ML) according to the observed U.S. withdrawal share, yielding approximately 1,698 ML. This procedure implicitly assumes a uniform data center water consumptive ratio of approximately 0.72 across all facilities. The operator also reports global third-party water withdrawal of 5,625 ML out of a total withdrawal of 5,637 ML. We treat this proportion as a proxy for the U.S. municipal water ratio, yielding approximately 99.79%.

The operator reports a global WUE of 0.19 L/kWh and a global PUE of 1.08. Because approximately 43% of total data center water withdrawal/consumption occurs outside the United States, the reported global WUE may not accurately represent U.S.-level performance. We therefore do not directly adopt the global WUE for estimating U.S. operations. However, in the absence of U.S.-level PUE disclosure, we adopt the reported global PUE of 1.08 for U.S.-level estimation, since average PUE values are typically more consistent across U.S. and non-U.S. locations.

The operator also discloses location/site-based data center electricity consumption. By aggregating all facilities explicitly identified as located in the United States, we obtain total U.S. data center electricity consumption of approximately 12.8 TWh. Dividing this value by the global PUE yields U.S. IT energy of approximately 11.8 TWh. Using the estimated U.S. water consumption, we derive a U.S.-level WUE of approximately 0.14 L/kWh, which is lower than the reported global WUE.

**Hyperscale-4.** The operator reports location-based data center electricity consumption by region, from which we aggregate approximately 1.7 TWh for U.S. hyperscale data centers (excluding colocation data centers). The reported global data center electricity consumption is approximately 2.5 TWh (including colocation data centers), implying that self-managed U.S. operations account for about 68% of total data center electricity use. This share is subsequently used to scale global water-related quantities to the U.S. level.

Specifically, global data center water withdrawal and discharge are reported as approximately 1,800 million gallons (MG) and 900 MG, respectively. We therefore compute water consumption as the difference between withdrawal and discharge, yielding approximately 900 MG. After separating data center and office water use using consumptive ratios of 0.75 for data centers and 0.10 for office operations, the resulting global data center water withdrawal is scaled using the 68% U.S. energy share, yielding approximately 2,842 ML for U.S. data centers. Applying the default data center consumptive ratio of 0.75 results in an estimated U.S. data center water consumption of approximately 2,132 ML. To derive IT energy, we assume a PUE of 1.09, consistent with the value adopted for Hyperscale-1 due to the lack of disclosure by this operator, yielding an estimated U.S. data center IT energy of approximately 1.6 TWh. Dividing the estimated water consumption by IT energy results in a WUE of approximately 1.36 L/kWh.

The operator further reports total global water use of 1,756 MG (slightly different from 1,800 MG), consisting of 1,532 MG of freshwater, 197 MG of recycled water, and 27 MG of other alternative water sources. The report indicates that freshwater and recycled water are primarily supplied through municipal systems, with less than 5% obtained from other providers. Accordingly, we attribute 95% of the combined freshwater and recycled water volumes to municipal supply, yielding an estimated U.S. municipal water ratio of approximately 93.54%.

**Hyperscale-5.** For this operator, U.S. data center total electricity consumption and IT energy are not directly reported. The operator reports a North America-level WUE of 0.13 L/kWh and a PUE of 1.14, which are treated as values of its U.S. operations in this study.

Despite the lack of detailed electricity consumption data, Hyperscale-5 reportedly maintains one of the largest data center footprints in the United States and ranks among the top purchasers of renewable energy, surpassing many of its peers. Thus, for the purpose of setting its contribution to average WUE within the hyperscale data center category, we assume its U.S. IT energy to be 120% of the average combined IT energy of the three largest hyperscale operators (Hyperscale-1, Hyperscale-3, and Hyperscale-2, in descending order), yielding approximately 16.0 TWh. Based on the reported PUE of 1.14, the corresponding total elec-

tricity consumption is estimated to be approximately 18.2 TWh. A different electricity consumption value would only slightly affect the average WUE for the hyperscale data center type (e.g., by less than 5% if the total energy consumption of Hyperscale-5 were adjusted to match that of the current largest Hyperscale-1).

Notably, the reported WUE for Hyperscale-5 is explicitly defined as water withdrawal per unit of IT energy. To maintain consistency, we convert the withdrawal-based WUE to a consumption-based WUE using a data center water consumptive ratio of 0.75, yielding an effective WUE of approximately 0.10 L/kWh. Applying this value to the estimated IT energy results in total water consumption of approximately 1,560 ML and total water withdrawal of approximately 2,081 ML.

**Colocation-1.** The operator has significant non-U.S. presence and reports global-level water consumption and total electricity consumption. We assume a U.S. share of 50% and apply this allocation factor to estimate U.S. data center water consumption of approximately 2,793 ML and U.S. data center electricity consumption of approximately 5.7 TWh. As colocation data centers generally have higher PUE values than hyperscalers, a default PUE of 1.25 (assumed in this study) is then applied to derive U.S. data center IT energy, yielding approximately 4.5 TWh. WUE is computed as water consumption divided by IT energy, resulting in approximately 0.62 L/kWh. Finally, assuming a data center water consumptive ratio of 0.75, U.S. data center water withdrawal is estimated based on the calculated water consumption.

In addition, the operator reports global municipal water consumption of 1,475,293 kGal out of a total global water consumption of 1,475,762 kGal. We use this proportion as a proxy for the U.S. municipal water ratio, yielding approximately 99.97%. Among the reported municipal water consumption, 849,319 kGal is identified as potable water, resulting in approximately 57.55%. However, the low potable water ratio is possibly due to the operator's substantial non-U.S. presence, where stricter regulations on potable water use may apply; the U.S. potable water ratio is likely higher.

**Colocation-2.** This operator reports global-level water withdrawal and water consumption, as well as energy consumption by region. We compute the ratio of reported energy consumption in the Americas to total global energy consumption and treat this ratio as the U.S. allocation factor in this study (approximately 40%). Using this allocation factor, U.S. data center water withdrawal and water consumption are estimated by scaling down the corresponding global totals, yielding approximately 2,153 ML and 1,654 ML, respectively. The resulting water consumptive ratio is approximately 0.77. The operator reports a WUE of 0.95 L/kWh and a PUE of 1.39. Based on these values, IT energy is computed as water consumption divided by WUE, yielding approximately 1.7 TWh. The total electricity consumption is then derived by applying the reported PUE to the estimated IT energy.

In addition, the operator reports global municipal water withdrawal of 5,140 ML out of a total global withdrawal of 5,440 ML. We use this proportion as a proxy for the U.S. municipal water ratio, resulting in approximately 94.49%. The operator further reports that non-potable sources account for 37% of total water use at the global level. Accordingly, the complementary share (63%) is the potable water ratio. However, similar to Colocation-1, the low potable water ratio is likely due to the operator's substantial non-U.S. presence, where stricter regulations on potable water use may apply; the U.S. potable water ratio is likely higher.

**Colocation-3.** For this operator, the vast majority of data center operations are located in the United States. The operator reports water consumption of 2,119 ML and water withdrawal of 2,323 ML, from which a water consumptive ratio of approximately 0.91 is computed. The operator also reports a WUE of 0.82 L/kWh and a PUE of 1.40. Based on these values, IT energy is calculated as water consumption divided by WUE, yielding approximately 2.6 TWh. Total data center electricity consumption (approximately 3.6 TWh) is then derived by applying the reported PUE to the estimated IT energy. In addition, the operator reports that all water withdrawal is sourced from third-party suppliers. Accordingly, we treat the municipal water ratio as 100%.

**Colocation-4.** For this operator, nearly all data center operations are located in the United States. The operator reports data center water consumption of approximately 1,021 ML and water withdrawal of approximately 1,312 ML, from which a water consumptive ratio of approximately 0.78 is calculated. The operator also reports a WUE of 0.29 L/kWh and a PUE of 1.46. Based on the reported WUE, U.S. data center IT energy is computed as water consumption divided by WUE, yielding approximately 3.5 TWh. Total data center energy is then derived by applying the reported PUE to the estimated IT energy.

**Colocation-5.** For this operator, nearly all data center operations are located in the United States. The

operator reports total electricity consumption and specifies a PUE of 1.23, calculated as a 12-month trailing average across seasoned sectors, which we adopt in this study. A WUE value of 1.28 L/kWh is also disclosed. Using the reported electricity consumption (approximately 1.5 TWh) and the disclosed PUE, we derive the corresponding U.S. data center IT energy (approximately 1.2 TWh). Based on the reported WUE, total water consumption is then estimated at approximately 1,584 ML. Finally, applying the default consumptive ratio of 0.75, we estimate total U.S. data center water withdrawal at approximately 2,112 ML.

**Colocation-6.** For this non-U.S. operator, we assume that 20% of its data center capacity is located in the United States. The operator reports global total energy consumption, which is treated as total global data center electricity consumption. Applying the 20% allocation factor yields U.S. data center electricity consumption of approximately 0.8 TWh. Using the reported PUE of 1.38, IT energy is derived as total electricity divided by PUE, resulting in approximately 0.6 TWh. The reported WUE of 0.72 L/kWh is then applied to estimate U.S. data center water consumption based on the derived IT energy, yielding approximately 431 ML. Finally, by applying the water consumptive ratio of 0.75, U.S. data center water withdrawal is estimated from the calculated water consumption.

**Colocation-7.** For this operator with significant non-U.S. presence, we assume that 50% of its data center capacity is located in the United States. The operator reports global water withdrawal for evaporative cooling, which is treated as total data center water withdrawal in this study. Applying the 50% allocation factor yields U.S. data center water withdrawal of approximately 48 ML. U.S. data center water consumption is then estimated by applying the default water consumptive ratio of 0.75, resulting in approximately 36 ML. The operator also reports total purchased electricity at the global level, which is treated as total global data center electricity consumption, together with a reported PUE of 1.33. Applying the same 50% allocation factor yields U.S. data center electricity consumption of approximately 0.8 TWh. IT energy is then derived as total electricity divided by PUE, resulting in approximately 0.6 TWh. Based on the estimated U.S. data center water consumption and IT energy, WUE is computed as water consumption divided by IT energy, yielding approximately 0.06 L/kWh.

**Data center type-specific WUE.** We assign the 2024 U.S.-level hyperscale WUE as the IT energy-weighted average across the five hyperscale operators (approximately 0.55), and the 2024 U.S.-level colocation WUE as the IT energy-weighted average across the seven colocation operators (approximately 0.65); the WUE for others is set to 0. Note that while IT energy is estimated for some companies and may differ from the actual, undisclosed values, such differences affect only the weights in our aggregation, and our methodology of aggregating multiple companies provides a reasonably robust reflection of the industry's prevailing WUE.

#### A.4.2 The Years of 2025 to 2030

We obtain WUE trajectories under three different scenarios. For our Baseline, Moderate, and Optimistic scenarios, WUE is differentiated by data center type. Starting from the 2024 values, WUE varies with compound annual rates of 0%, -5%, and -10% under the Baseline, Moderate, and Optimistic scenarios, respectively. The data center type-specific IT energy values in our calculations are reported in Table 6. Accordingly, water consumption is first computed separately for each data center type and then aggregated to obtain national totals.

The Reference (LBNL and NS) scenarios focus on WUE at the aggregate national level. To enable a consistent and direct comparison, we therefore also compute a total U.S.-average WUE for our three scenarios by aggregating across the data center types. For each year, the total water consumption is calculated as the sum of type-specific IT energy multiplied by the corresponding WUE values, and the U.S.-average WUE is then obtained by dividing this aggregate water consumption by total IT energy. By construction, this total WUE is an IT energy-weighted average across data center types. Because IT energy differs under the low and high assumptions, total WUE is calculated separately for the two cases, yielding corresponding low and high total WUE values.

The resulting WUE trajectories from 2024 to 2030 for all the scenarios are summarized in Table 7. The corresponding annual water consumption values under each scenario are reported in Table 8. For our Baseline, Moderate, and Optimistic scenarios, both total and type-specific (hyperscale and colocation) values are provided. Annual water consumption values are reported without decimal places. As the differences between the low and high total WUE values under the Baseline, Moderate, and Optimistic scenarios are small, all WUE values in Table 7 are reported to three decimal places to ensure clear numerical distinction.

**Table 8: Annual water consumption (million gallons) under Reference, Baseline, Moderate, and Optimistic scenarios, 2024–2030. Mid values are defined as the arithmetic average of the corresponding low and high estimates.**

| Year | Growth | Reference     |                | Baseline      |               |               | Moderate      |               |               | Optimistic    |               |               |
|------|--------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|      |        | LBNL          | NS             | Total         | Hyper         | Colo          | Total         | Hyper         | Colo          | Total         | Hyper         | Colo          |
| 2024 | Low    | 14,191        | 58,323         | 19,351        | 8,647         | 10,704        | 19,351        | 8,647         | 10,704        | 19,351        | 8,647         | 10,704        |
|      | Mid    | <b>15,453</b> | <b>62,643</b>  | <b>20,984</b> | <b>9,615</b>  | <b>11,369</b> | <b>20,984</b> | <b>9,615</b>  | <b>11,369</b> | <b>20,984</b> | <b>9,615</b>  | <b>11,369</b> |
|      | High   | 16,716        | 66,964         | 22,618        | 10,583        | 12,035        | 22,618        | 10,583        | 12,035        | 22,618        | 10,583        | 12,035        |
| 2025 | Low    | 17,489        | 68,951         | 23,606        | 10,469        | 13,137        | 22,426        | 9,946         | 12,480        | 21,245        | 9,422         | 11,823        |
|      | Mid    | <b>19,946</b> | <b>76,742</b>  | <b>26,581</b> | <b>12,066</b> | <b>14,515</b> | <b>25,252</b> | <b>11,463</b> | <b>13,789</b> | <b>23,923</b> | <b>10,859</b> | <b>13,063</b> |
|      | High   | 22,404        | 84,534         | 29,556        | 13,663        | 15,893        | 28,078        | 12,979        | 15,099        | 26,600        | 12,296        | 14,304        |
| 2026 | Low    | 21,797        | 81,964         | 28,772        | 12,664        | 16,108        | 25,967        | 11,429        | 14,537        | 23,305        | 10,258        | 13,047        |
|      | Mid    | <b>26,045</b> | <b>94,860</b>  | <b>33,706</b> | <b>15,154</b> | <b>18,552</b> | <b>30,420</b> | <b>13,677</b> | <b>16,743</b> | <b>27,302</b> | <b>12,275</b> | <b>15,027</b> |
|      | High   | 30,294        | 107,756        | 38,640        | 17,644        | 20,996        | 34,873        | 15,924        | 18,949        | 31,299        | 14,292        | 17,007        |
| 2027 | Low    | 27,090        | 97,781         | 35,018        | 15,296        | 19,722        | 30,024        | 13,115        | 16,909        | 25,528        | 11,151        | 14,377        |
|      | Mid    | <b>33,890</b> | <b>118,053</b> | <b>42,777</b> | <b>19,045</b> | <b>23,733</b> | <b>36,676</b> | <b>16,328</b> | <b>20,348</b> | <b>31,185</b> | <b>13,884</b> | <b>17,301</b> |
|      | High   | 40,690        | 138,326        | 50,537        | 22,793        | 27,744        | 43,329        | 19,542        | 23,787        | 36,841        | 16,616        | 20,225        |
| 2028 | Low    | 33,433        | 117,016        | 42,590        | 18,462        | 24,128        | 34,689        | 15,037        | 19,652        | 27,943        | 12,113        | 15,830        |
|      | Mid    | <b>43,932</b> | <b>147,809</b> | <b>54,381</b> | <b>23,968</b> | <b>30,413</b> | <b>44,293</b> | <b>19,522</b> | <b>24,772</b> | <b>35,679</b> | <b>15,725</b> | <b>19,954</b> |
|      | High   | 54,431        | 178,601        | 66,172        | 29,474        | 36,698        | 53,897        | 24,006        | 29,891        | 43,415        | 19,338        | 24,078        |
| 2029 | Low    | 41,237        | 140,939        | 51,980        | 22,359        | 29,621        | 40,221        | 17,301        | 22,920        | 30,694        | 13,203        | 17,491        |
|      | Mid    | <b>56,806</b> | <b>186,576</b> | <b>69,476</b> | <b>30,306</b> | <b>39,171</b> | <b>53,759</b> | <b>23,450</b> | <b>30,309</b> | <b>41,025</b> | <b>17,895</b> | <b>23,130</b> |
|      | High   | 72,374        | 232,213        | 86,972        | 38,252        | 48,720        | 67,297        | 29,599        | 37,699        | 51,356        | 22,588        | 28,769        |
| 2030 | Low    | 51,016        | 170,280        | 63,502        | 27,104        | 36,398        | 46,679        | 19,924        | 26,756        | 33,747        | 14,404        | 19,343        |
|      | Mid    | <b>73,808</b> | <b>236,685</b> | <b>89,009</b> | <b>38,416</b> | <b>50,593</b> | <b>65,430</b> | <b>28,239</b> | <b>37,190</b> | <b>47,303</b> | <b>20,416</b> | <b>26,887</b> |
|      | High   | 96,601        | 303,090        | 114,516       | 49,728        | 64,788        | 84,180        | 36,555        | 47,625        | 60,858        | 26,427        | 34,431        |

**Table 9: Annual water withdrawal (million gallons) under Reference, Baseline, Moderate, and Optimistic scenarios, 2024–2030. Mid values are defined as the arithmetic average of the corresponding low and high estimates.**

| Year | Growth | Reference     |                | Baseline       |               |               | Moderate      |               |               | Optimistic    |               |               |
|------|--------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|      |        | LBNL          | NS             | Total          | Hyper         | Colo          | Total         | Hyper         | Colo          | Total         | Hyper         | Colo          |
| 2024 | Low    | 18,287        | 75,160         | 24,795         | 11,195        | 13,600        | 24,795        | 11,195        | 13,600        | 24,795        | 11,195        | 13,600        |
|      | Mid    | <b>19,910</b> | <b>80,711</b>  | <b>26,894</b>  | <b>12,448</b> | <b>14,446</b> | <b>26,894</b> | <b>12,448</b> | <b>14,446</b> | <b>26,894</b> | <b>12,448</b> | <b>14,446</b> |
|      | High   | 21,534        | 86,262         | 28,993         | 13,702        | 15,292        | 28,993        | 13,702        | 15,292        | 28,993        | 13,702        | 15,292        |
| 2025 | Low    | 22,513        | 88,758         | 30,246         | 13,554        | 16,691        | 28,734        | 12,877        | 15,857        | 27,221        | 12,199        | 15,022        |
|      | Mid    | <b>25,668</b> | <b>98,758</b>  | <b>34,064</b>  | <b>15,622</b> | <b>18,443</b> | <b>32,361</b> | <b>14,841</b> | <b>17,521</b> | <b>30,658</b> | <b>14,059</b> | <b>16,598</b> |
|      | High   | 28,824        | 108,757        | 37,883         | 17,689        | 20,194        | 35,989        | 16,804        | 19,184        | 34,094        | 15,920        | 18,175        |
| 2026 | Low    | 28,033        | 105,414        | 36,863         | 16,396        | 20,467        | 33,269        | 14,798        | 18,471        | 29,859        | 13,281        | 16,578        |
|      | Mid    | <b>33,485</b> | <b>121,958</b> | <b>43,192</b>  | <b>19,620</b> | <b>23,572</b> | <b>38,981</b> | <b>17,707</b> | <b>21,274</b> | <b>34,986</b> | <b>15,892</b> | <b>19,093</b> |
|      | High   | 38,937        | 138,502        | 49,522         | 22,844        | 26,677        | 44,693        | 20,617        | 24,076        | 40,112        | 18,504        | 21,609        |
| 2027 | Low    | 34,814        | 125,664        | 44,863         | 19,804        | 25,059        | 38,464        | 16,980        | 21,485        | 32,705        | 14,437        | 18,268        |
|      | Mid    | <b>43,539</b> | <b>151,665</b> | <b>54,812</b>  | <b>24,657</b> | <b>30,155</b> | <b>46,994</b> | <b>21,140</b> | <b>25,854</b> | <b>39,958</b> | <b>17,975</b> | <b>21,983</b> |
|      | High   | 52,263        | 177,666        | 64,761         | 29,510        | 35,251        | 55,525        | 25,301        | 30,224        | 47,211        | 21,513        | 25,698        |
| 2028 | Low    | 42,941        | 150,295        | 54,559         | 23,902        | 30,657        | 44,439        | 19,468        | 24,970        | 35,796        | 15,682        | 20,114        |
|      | Mid    | <b>56,407</b> | <b>189,783</b> | <b>69,674</b>  | <b>31,031</b> | <b>38,643</b> | <b>56,750</b> | <b>25,275</b> | <b>31,475</b> | <b>45,713</b> | <b>20,359</b> | <b>25,354</b> |
|      | High   | 69,873        | 229,270        | 84,788         | 38,159        | 46,629        | 69,060        | 31,081        | 37,979        | 55,629        | 25,036        | 30,593        |
| 2029 | Low    | 52,940        | 180,936        | 66,585         | 28,948        | 37,637        | 51,522        | 22,399        | 29,123        | 39,318        | 17,094        | 22,224        |
|      | Mid    | <b>72,904</b> | <b>239,452</b> | <b>89,007</b>  | <b>39,236</b> | <b>49,770</b> | <b>68,872</b> | <b>30,360</b> | <b>38,511</b> | <b>52,558</b> | <b>23,169</b> | <b>29,389</b> |
|      | High   | 92,868        | 297,968        | 111,429        | 49,525        | 61,904        | 86,221        | 38,321        | 47,900        | 65,798        | 29,244        | 36,554        |
| 2030 | Low    | 65,468        | 218,519        | 81,338         | 35,091        | 46,247        | 59,791        | 25,795        | 33,996        | 43,227        | 18,649        | 24,578        |
|      | Mid    | <b>94,691</b> | <b>303,653</b> | <b>114,020</b> | <b>49,737</b> | <b>64,284</b> | <b>83,815</b> | <b>36,561</b> | <b>47,254</b> | <b>60,595</b> | <b>26,432</b> | <b>34,163</b> |
|      | High   | 123,915       | 388,787        | 146,702        | 64,382        | 82,320        | 107,840       | 47,327        | 60,513        | 77,964        | 34,215        | 43,748        |

## A.5 Consumptive Ratio

Type-specific consumptive ratios are applied for the three data center types in the calculation of ADD and MDD. Specifically, the U.S.-level consumptive ratio for hyperscale data centers is approximately 0.77, computed as the ratio of aggregated water consumption to aggregated water withdrawal across five hyperscale operators. The corresponding ratio for colocation data centers is approximately 0.79, calculated analogously across seven colocation operators.

The consumptive ratio for “Others” is set to 0.75 by default [47]. This assumption does not affect the Baseline, Moderate, or Optimistic scenarios, because the WUE for “Others” is set to zero in these scenarios and therefore does not contribute to either water consumption or water withdrawal. In contrast, under the

Reference (LBNL and NS) scenarios, all three data center types contribute to water consumption because a common U.S.-wide average WUE is applied to each type.

After obtaining U.S.-level IT energy and WUE for each data center type, the type-specific annual water consumption is calculated as the product of IT energy and WUE. Water withdrawal is then derived by dividing water consumption by the corresponding type-specific consumptive ratio. The resulting annual withdrawal values are reported in Table 9. Since ADD is defined based on water withdrawal, it is computed as follows (without distinguishing leap and non-leap years):

$$\text{ADD}_t = \frac{1}{365} \sum_{i \in \mathcal{D}} \frac{E_{i,t}^{\text{IT}} \cdot \text{WUE}_{i,t}}{\gamma_i}, \quad (10)$$

where  $t$  denotes the year,  $i$  denotes the data center type ( $\mathcal{D} = \{\text{hyperscale, colocation, others}\}$ ),  $E_{i,t}^{\text{IT}}$  is the annual IT energy consumption of type  $i$  in year  $t$ ,  $\text{WUE}_{i,t}$  is the corresponding WUE, and  $\gamma_i$  is the consumptive ratio associated with data center type  $i$ . Under the Reference (LBNL and NS) scenarios, a U.S.-wide average  $\text{WUE}_{i,t}$  is applied across hyperscale, colocation, and others. In contrast, under the Baseline, Moderate, and Optimistic scenarios,  $\text{WUE}_{i,t}$  differs by data center type and is set to zero for “others”.

## A.6 Peaking Factor

To estimate MDD, a daily peaking factor is required to convert ADD into the water capacity demand measured in terms of the maximum daily demand. In Section 3.1.2, we observe that cooling towers exhibit a relatively lower peaking factor (measured or estimated at approximately 2.0–2.5, which will be higher for planning purposes to account for the worst case [123]), whereas dry cooling with evaporative assistance shows a substantially higher peaking factor due to the concentration of water use on a limited number of days each year. For one leading technology company, the daily peaking factor is estimated at approximately 6.5 (based on the measured monthly peaking factor of 4.3) in West Des Moines, Iowa, planned at 8.0+ in Leesburg, Virginia, and planned at 30+ in Wisconsin. Likewise, a leading technology company’s state-of-the-art data center under construction to host AI and core products has secured an allocation of up to 8 MGD of water capacity, resulting in a peaking factor exceeding 6.3 based on the company’s existing U.S.-wide average water withdrawal intensity (see Appendix D for details).

A recent report analyzing water utility data indicates that the measured daily peaking factor of multiple data centers within the Prince William Water service area reached 10 in 2024 [47]. When hundreds of data centers with diverse cooling system designs and operational configurations are aggregated, the overall peaking factor is moderated by multiplexing effects. Nevertheless, the weighted estimate for the actual peaking factor (not for infrastructure planning purposes) in Northern Virginia remains in the range of 3.5 to 3.7 under different scenarios (Table 6-5 of [47]).

For infrastructure planning purposes, the peaking factor will be even higher than the measured value, as an additional safety margin is applied to account for worst-case scenarios and sharp rises in IT loads and cooling demand [123]. This is analogous to additional backup generator capacity (commonly “2N,” or doubling the capacity relative to actual power needs [47]) and power capacity reservation (e.g., a commonly assumed average power utilization factor of 50%, i.e., reserving twice the actual power need [2]). Thus, even assuming a 25% additional reservation, the effective peaking factor for hundreds of data centers in Northern Virginia [47] would be approximately 4.5.

Therefore, to provide a conservative and reasonable estimate grounded in empirical values observed from available sources, we adopt an average industry-wide peaking factor of 4.5, without further increase through 2030. The water capacity demand measured in terms of MDD for planning purposes is subsequently calculated under the peaking factor of 4.5 using Eq. (8).

In the future, as evaporative-assisted cooling becomes more common, it can improve the annual water efficiency while simultaneously increasing the peaking factor, since such systems “use zero water for a majority of the year” [19] and typically operate only 5 to 15% of the year [16]. Thus, the actual peaking factor is likely higher than 4.5, and this variation can be partially accommodated by the different growth rates used in our analysis. As peak water use or the peaking factor is rarely reported publicly, we recommend that data centers include site-level peaking factors in their annual reports to support improved water capacity management.

**Table 10:** Estimated cost for water projects. Projects 12–17 are specifically or partly associated with data centers.

| Project | Description                                                                                       | Unit Cost (\$M/MGD) |
|---------|---------------------------------------------------------------------------------------------------|---------------------|
| 1       | Water treatment expansion only [124]                                                              | 7.6                 |
| 2       | Water treatment expansion only [124]                                                              | 6.6                 |
| 3       | Advanced water treatment, wastewater treatment, concentrate management, and solids handling [124] | 86                  |
| 4       | Advanced water treatment, wastewater treatment, concentrate management, and solids handling [124] | 41                  |
| 5       | Advanced water treatment, wastewater treatment, concentrate management, and solids handling [124] | 23–31               |
| 6       | Advanced water treatment, wastewater treatment, concentrate management, and solids handling [124] | 23–32               |
| 7       | New water reuse/recycling facility [125]                                                          | 46                  |
| 8       | Water treatment expansion only [93]                                                               | 9                   |
| 9       | Reservoir and new water treatment plant [93]                                                      | 12                  |
| 10      | Wastewater treatment construction and expansion only [93]                                         | 20                  |
| 11      | Wastewater treatment facility improvement and expansion [126]                                     | 13                  |
| 12      | Wastewater recycling facility only [109]                                                          | 6                   |
| 13      | Water (0.64 MGD) and sewer service upgrades [3,75]                                                | 40                  |
| 14      | New water source and other necessary facilities (8 MGD) [27]                                      | 37                  |
| 15      | Water and wastewater services (0.11 MGD water and 0.08 MGD wastewater) [76]                       | 50                  |
| 16      | Supplying 25 MGD water to an innovation district [38]                                             | 22                  |
| 17      | Wastewater system improvements and expansion [18]                                                 | 23                  |

## A.7 Estimated Costs for Water Infrastructure Projects

Water infrastructure project costs vary widely depending on factors such as project complexity, geographic location, labor costs, and inflation. For example, a recent public water infrastructure upgrade to support a leading technology company’s data centers cost up to \$400 million for an undisclosed water capacity [16], whereas a smaller upgrade providing approximately 0.11 MGD of drinking water capacity and 0.08 MGD of wastewater capacity to a data center reportedly cost \$5.4 million [76].

To derive a reasonable cost range, we review multiple recent or planned water infrastructure projects documented in the public domain, including official cost estimates from local governments and water utilities as well as publicly reported project costs. Among these, Projects 12–17 are specifically or partly associated with data center water needs. The results are shown in Table 10. All reported costs are in 2025 dollars or earlier without inflation adjustment; consequently, actual project costs may increase in future years due to inflation.

Notably, some reported cost estimates exclude transmission and distribution components, such as pipelines, which can represent a substantial share of total costs and often exceed the cost of water or wastewater treatment facilities themselves [28]. Based on this review and to account for additional applicable infrastructure components including pipes, pumps, and storage, we adopt a conservative unit cost range of \$10–40 million per MGD of capacity for valuing data center water infrastructure requirements in our study.

Importantly, our estimate of cost ranges is intended to represent the scale of infrastructure investment for each MGD capacity and should *not* be interpreted as the actual financial obligation of a specific data center operator, which may vary depending on contractual arrangements, accounting rules, local rate structures, among others.

## B Data Center Water Use in Loudoun County, Virginia

We use Loudoun County, Virginia, as a case study, given its high concentration of data centers. As a large public/community water system according to the EPA’s classification [28], Loudoun Water provides service to over 81,000 households as well as many data centers [26]. In 2024, the measured peak daily water *withdrawal* by data centers in the Loudoun Water service area reached 10.9 MGD, resulting in a peak of 2,716 gallons per megawatt of IT load per day (or 0.428 L/kWh) consolidated over all the served data centers [47]. The 10.9 MGD of water withdrawal includes both potable water and non-potable water, corresponding to a total IT load of approximately 4,013 MW across the Loudoun Water service area. The relatively low peak water withdrawal reflects the current practice that many Northern Virginia data centers predominantly rely on dry-cooling systems, despite the fact that dry coolers are more power-intensive than evaporative cooling, particularly during the summer months. Note that the same report [47] also notes a lower peak of 2,435 gallons per megawatt on Page 6–14, which would imply a higher corresponding IT load and, consequently, a higher peak water use in the following estimate. To remain conservative, we therefore adopt the larger value of 2,716 gallons per megawatt per day.

We consider a hypothetical scenario in which all IT loads are cooled using the more power-efficient evaporative cooling method. To improve the result robustness, we consider the following methods to estimate the corresponding total peak daily water demand.

**The estimate in [47].** The report [47] assumes in Table 6-5 that, under a scenario in which evaporative systems account for 90% of the share, peak water *withdrawal* reaches 5,200 gallons per megawatt of IT load per day. This corresponds to a pWUE of approximately 0.615 L/kWh, which is compared to (or even substantially lower) than many of the average company-wide WUE values reported by leading colocation providers and technology companies (see Table 1). This discrepancy may reflect the particular operational configuration and local climatic conditions, as well as the possibility that some facilities classified as using evaporative cooling in fact serve only a limited portion of their IT load with evaporative systems [47]. Consequently, the estimate of 5,200 gallons per megawatt of IT load per day (under the assumption of 90% evaporative cooling) is specific to the selected set of data centers in the study [47] and may not be representative of the current average WUE or pWUE of U.S. data centers. Nonetheless, under the assumed setting in [47], if all data centers were to adopt evaporative cooling, peak water withdrawal would easily exceed 5,500 gallons per megawatt of IT load per day, corresponding to a total peak withdrawal of approximately 22.1 MGD. In practice, public water utilities also adopt more conservative planning assumptions by incorporating higher peaking factors than actually metered peaks and reserving additional capacity to manage worst-case scenarios, such as extreme heatwaves. This can effectively drive up the total water capacity need to 30 MGD or more.

**Industry disclosures.** To complement the estimates derived based on [47], we consider industry disclosures. A large colocation provider reports an annual average WUE of 1.55 L/kWh for facilities using evaporative cooling in 2024 [117]. In comparison, a large technology company operating multiple data centers in the United States with a mix of water-intensive evaporative cooling and non-evaporative systems reports an estimated annual WUE of 1.13 L/kWh [17]. Note that excluding the four air-cooled U.S. data center sites (whose energy consumption is not disclosed) from the 23 sites in total [17] would increase the estimated annual WUE for evaporatively cooled sites to above 1.13 L/kWh, bringing it closer to the 1.55 L/kWh reported for evaporative cooling by [117]. These company-wide WUE values provide empirical U.S./global benchmarks for water efficiency in large-scale data centers using evaporative cooling. To account for the relatively cooler climate of Northern Virginia, we apply the reported company-wide average WUE values directly and do not incorporate additional peaking factors or redundancy-related capacity allocations. This approach yields estimates that are plausibly conservative. Specifically, the implied peak daily water consumption in 2024 would range from 28.8 to 39.4 million gallons. Using a consumptive use ratio of 0.75 as assumed in [47], the corresponding peak daily water withdrawal would range from 38.3 to 52.6 million gallons.

**Water allocation example.** The total water capacity allocated to a data center is often not publicly disclosed. Nonetheless, public county records [75, 127] indicate that, as of April 2024, the Town of Leesburg, Virginia, allocates 1.23 MGD of water capacity to a large data center campus operated by a leading technology company. This campus is also approved for approximately 314 MW of total diesel generator capacity by the Virginia Department of Air Quality as of March 2025 [128].

Assuming the same “2N” redundancy configuration and an 80% IT load utilization factor as in [47], a 314 MW diesel generator capacity corresponds to an effective IT load of approximately 126 MW. When compared against the 1.23 MGD water capacity allocation, this implies roughly 9,762 gallons of water withdrawal per MW of IT load per day. While future load growth without additional water capacity allocation may be feasible and could reduce the effective pWUE, the current pWUE estimate more closely reflects the planned design value, which accounts for worst case operating conditions as well as anticipated future expansion. Given that tens of large data centers with an estimated aggregate IT load of 4,013 MW are served by Loudoun Water, the total required water capacity could approach 40 MGD if all facilities were to rely on evaporative cooling.

In summary, if all data centers within the Loudoun Water service area were to rely on evaporative cooling during the summer months, the aggregate peak water capacity requirement would likely fall in the range of 20–50 MGD, even under conservative assumptions. In contrast, Loudoun Water reports a total drinking water design capacity of 70 MGD, with a measured peak demand of 41 MGD and an available capacity of less than 30 MGD as of 2022 [129]. The capacity available for new allocation is likely even smaller after accounting for operational reserves and committed but not yet fully utilized allocations. These figures sug-

gest that the remaining infrastructure capacity, after meeting the needs of residential, commercial, and other existing users, would likely be insufficient to accommodate the aggregate peak water demand or allocation requests of data center customers as of the end of 2024, should all data centers rely on evaporative cooling. In addition, even if the total water treatment plant capacity may be sufficient, other components of the system, including pump stations and distribution pipelines, may constitute binding constraints in meeting the peak water demand associated with evaporative cooling across all the data centers.

Accordingly, in the absence of further expansion of water treatment and distribution infrastructure, accommodating the high peak demand associated with a full transition to evaporative cooling for all the data centers would likely be difficult and necessitate alternative strategies. These may include large-scale adoption of reclaimed water (which does not reduce the underlying consumptive water use of evaporative cooling) as well as deployment of dry cooling systems (which shift peak resource burdens from regional water systems to the electricity grid, particularly during summer periods).

## C Water Capacity Need for Cooling 100 MW IT Loads

Assuming sufficient water capacity is available, we now estimate the water capacity need for cooling a 100 MW IT load using evaporative methods. We rely on industrial disclosures and public data sources to develop plausible estimates.

A large colocation provider reports an annual average WUE of 1.55 L/kWh for facilities using evaporative cooling in 2024 [117]. In comparison, a large technology company operating multiple data centers in the United States with a mix of water-intensive evaporative cooling and non-evaporative systems reports an estimated annual WUE of 1.13 L/kWh [17]. Note that excluding the four air-cooled U.S. data center sites (whose energy consumption is not disclosed) from the 23 sites in total [17] would increase the estimated annual WUE for evaporatively cooled sites to above 1.13 L/kWh, bringing it closer to the 1.55 L/kWh reported for evaporative cooling by [117]. These company-wide WUE values provide empirical U.S./global benchmarks for water efficiency in large-scale data centers using evaporative cooling (mostly cooling towers).

The measured daily peaking factor (or estimated based on monthly values) for data center cooling towers is approximately 2.2 (Section 3.1.2). For planning purposes, we adopt a conservative average WUE of 1.2 L/kWh and assume a peaking factor of 2.5 to reflect operational safety margins. This implies a peak daily pWUE of 3.0 L/kWh. Assuming a consumptive ratio of 0.75, consistent with [47], an evaporative cooling system supporting a 100 MW IT load would require a peak water withdrawal capacity of approximately 2.5 MGD. In hotter climates, this requirement could be substantially higher, even exceeding 5.0 MGD. For example, measured monthly peak WUE values exceeding 9 L/kWh have been reported for data centers in Arizona [61].

Next, we examine dry cooling with evaporative assistance. While this approach significantly reduces annual WUE compared to conventional cooling towers, peak water demand can still be substantial. As a real example, consider a leading technology company's data center campus in West Des Moines, Iowa. In 2022, the reported annual WUE was 0.19 L/kWh, [130]. The peak daily WUE (pWUE) can be estimated by multiplying the monthly peaking factor of approximately 3 in 2022 (as shown in Figure 2a) by a minimum adjustment factor of 1.5 based on regulatory guidance [83], yielding a pWUE of 0.855 L/kWh. This is substantially higher than the annual average. Applying the default consumptive ratio of 0.75 [47] results in a water withdrawal intensity of 1.14 L/kWh. Thus, in West Des Moines, Iowa, cooling a 100 MW IT load requires approximately 0.72 MGD, which also needs to be further adjusted upward to approximately 1.0 MGD for planning to maintain operational safety margins in practice.

The same technology company also operates a large data center campus in Leesburg, Virginia, where it invested \$25 million to upgrade local water treatment and sewage infrastructure, ensuring that the associated costs are not passed on to local ratepayers [3]. Public county records [75, 127] indicate that, as of April 2024, the Town of Leesburg, Virginia, allocates 1.23 MGD of water capacity to the data center campus. This campus is also approved for approximately 314 MW of total diesel generator capacity by the Virginia Department of Air Quality as of March 2025 [128]. Following the study [47] to apply the same "2N" redundancy configuration and an 80% IT load utilization factor, a 314 MW diesel generator capacity corresponds to an effective IT load of approximately 126 MW. When compared against the 1.23 MGD water capacity allocation, this implies roughly 9,762 gallons of water withdrawal per MW of IT load per day, corresponding

to a peak water withdrawal intensity of 1.540 L/kWh. Thus, cooling a 100 MW IT load can need a water capacity of approximately 0.98 MGD. With a consumptive ratio of 0.75 as considered in [47], the peak water withdrawal intensity corresponds to a pWUE of 1.155 L/kWh. By comparison, the reported annual WUE for the company’s data center fleet across Northern Virginia is 0.14 L/kWh as of 2023 (which may be lower due to efficiency improvements in 2025) [53]. This comparison suggests that the peaking factor for the Leesburg data center campus is approximately 8 or higher. While future load growth without additional water capacity allocation may be feasible and could reduce the effective pWUE, the current pWUE estimate more closely reflects the planned design value, which accounts for worst case operating conditions as well as anticipated future expansion. In colder climates, the peaking factor can even be substantially higher (e.g., reaching 30 [78]), because evaporative cooling is utilized only on a limited number of days each year.

We now consider company-wide average WUE values measured and reported by leading data centers that primarily employ evaporative assistance. These values typically range from 0.1 to 0.2 L/kWh (Table 1). Assuming 0.15 L/kWh and accounting for a peaking factor of 6.5 (Figure 2c), the peak daily WUE (pWUE) can be roughly 1.0 L/kWh, which corresponds to a peak water withdrawal intensity of approximately 1.3 L/kWh under the default consumptive ratio of 0.75 [47]. For planning purposes, a higher value is appropriate, suggesting that a 1 MGD water capacity allocation is a reasonable estimate for cooling a 100 MW IT load.

While the benefits of water evaporative cooling remain (e.g., a recent \$400 million investment to upgrade public water infrastructure to support data centers hosting AI and cloud services [16]), the adoption of liquid-cooled servers can tolerate higher server-level temperature setpoints, allowing air-cooled heat rejection to be used for a greater portion of the year. This can further reduce total, and potentially peak, water usage. To account for this effect, as well as regional climate variations, we apply a 50% reduction to the water capacity need of 1.0 MGD for evaporatively cooling a 100 MW IT load, based on the current planning data from the leading technology company. This yields an adjusted water capacity need of roughly 0.5 MGD.

In summary, cooling a 100 MW IT load with evaporative cooling typically requires approximately 0.5–2.5 MGD of water capacity, depending on the cooling system design and operational configuration, while excluding extreme climate conditions.

## D Water Allocation in an Innovation District in Boone County, Indiana

The Limitless Exploration/Advanced Pace (LEAP) Lebanon Innovation District in Boone County, Indiana, is a state-led economic development initiative designed to attract high-tech, advanced manufacturing, and research businesses. To support anticipated water demand, the local water utility is upgrading infrastructure to supply up to an additional 25 MGD of potable water capacity and expand wastewater treatment capacity by an additional 15 MGD. These upgrades are estimated to cost approximately \$1 billion, including \$560 million (financed through Indiana’s Drinking Water State Revolving Fund) for new water supply, [38], \$225 million for upgrades to existing infrastructure of the host town (Lebanon, Indiana), and \$350 million for wastewater facility expansion [18]. The full 25 MGD is expected to be delivered by 2031.

We review disclosed water allocation agreements and pre-agreements across several projects spanning different categories to further examine how data centers use water differently. Unless otherwise specified, all water allocation values correspond to the projected full buildout capacity.

- Project 1 (Hospital) [131]: Peak water supply capacity of 34,200 gallons per day (GPD) and average demand of 11,400 GPD; peak wastewater capacity of 27,000 GPD and average flow of 7,000 GPD. The peaking factors for water and wastewater are 3.00 and 3.86, respectively.
- Project 2 (Housing) [132]: Water and wastewater allocations are not directly disclosed, except for 387 equivalent dwelling units (EDUs) and a peaking factor of 1.49. In the innovation district, each EDU corresponds to an average water demand of 500 GPD [133], resulting in an estimated average demand of 193,500 GPD and peak capacity of approximately 288,315 GPD for water supply.
- Project 3 (Industry) [133]: Peak water supply capacity of 135,000 GPD and average demand of 100,000 GPD; peak wastewater capacity of 40,000 GPD and average flow of 33,500 GPD. The peaking factors for water and wastewater are 1.35 and 1.19, respectively.

- Project 4 (Pharmaceutical) [134]: Peak water supply capacity of 1,675,529 GPD and average demand of 1,581,933 GPD; peak wastewater capacity of 1,350,000 GPD and average flow of 864,000 GPD. The peaking factors for water and wastewater are 1.06 and 1.56, respectively.
- Project 5 (Pharmaceutical) [135]: Peak water supply capacity of 749,970 GPD and average demand of 513,482 GPD; peak wastewater capacity of 290,970 GPD and average flow of 205,232 GPD. The peaking factors for water and wastewater are 1.46 and 1.42, respectively.
- Project 6 (Data Center) [18]: Peak water supply capacity of 8,000,000 GPD and average demand of 4,000,000 GPD; peak wastewater capacity of 4,000,000 GPD and average flow of 2,000,000 GPD. This is a final executed agreement. The peaking factors for both water and wastewater are 2.00 based on the disclosed average and peak water use. However, the operator’s existing U.S. data centers (15 different locations) report an average water withdrawal intensity of 0.20 L/kWh as of 2024 [113]. Considering that the planned “state-of-the-art data center” located in the Innovation District has a capacity of 1 GW and will use a closed-loop liquid cooling system that recirculates water and “will use zero water for a majority of the year” [19], it is highly likely that the new facility will achieve an average water withdrawal intensity below 0.20 L/kWh. This would correspond to an average water demand of no more than 1.27 MGD, even under the assumption that all the full 1 GW capacity corresponds to IT load. Given the peak water capacity of 8 MGD, this implies a planned daily peaking factor of at least 6.31, consistent with other large technology operators using similar cooling systems (Appendix A.6). Therefore, the specified average water demand in the agreement likely serves primarily as an administrative placeholder with limited relevance to the data center’s actual operational needs, ensuring that sufficient withdrawal volumes remain authorized if the facility’s design or cooling configuration changes in the future. Nonetheless, although peak water capacity allocations are also often requested above expected operating levels to hedge against worst-case scenarios such as extreme heatwaves or unanticipated IT load growth, securing such peak capacity is costly and requires substantial financial commitment, and thus more closely reflects both the anticipated operational demand and necessary reliability margins.

Importantly, based on the operator’s existing U.S. data center water efficiency, it is highly likely that the planned peaking factor is substantially higher than those of other typical water users, indicating more variability between average and peak demand.

Moreover, the data center’s peak water allocation alone accounts for 32% of the new 25 MGD water capacity and 27% of the expanded 15 MGD wastewater capacity supplied to the innovation district, making it likely the single largest user of the added capacity. Considering \$560 million for the new water capacity of 25 MGD [38] and \$350 million for wastewater capacity expansion of 15 MGD [18], the total estimated investment for the data center’s water infrastructure is approximately \$270 million. We exclude the anticipated \$225 million funding required to upgrade existing water infrastructure [18].

Our cost estimate is intended to represent the scale of infrastructure investment to serve the data center’s water capacity need and should *not* be interpreted as the actual financial obligation of the data center operator, which may vary depending on contractual arrangements, accounting rules, local rate structures, among others.

## E Water-Power Tradeoff for Data Center Cooling

Data center cooling and heat rejection strategies present a fundamental tradeoff between water use and (peak) electricity consumption, particularly during summer ambient conditions. At the facility level, dry air-cooled heat rejection systems (a.k.a., dry coolers) can avoid water use entirely but generally use more energy compared to evaporative cooling methods, which use water to reduce the temperature of the air entering the condenser or facility loop. According to industry disclosures, during peak summer conditions, evaporative-based/-assisted coolers can use 10–35% less electricity than equivalent air-cooled systems [44, 60]. Notably, multiple leading technology companies have recently signed agreements with local water utilities to secure substantial water capacity (e.g., up to 8 MGD at full buildout) for cooling their newest AI and cloud data center campuses across various states [16, 18–21], with some water capacity expected to be delivered in 2031 due to required infrastructure upgrades [18].

The basic thermodynamic distinction that underlies facility-level cooling choices is that evaporative cooling leverages the ambient wet-bulb temperature, whereas dry cooling leverages the ambient dry-bulb temperature. The dry-bulb temperature is the routine measure of air temperature and does not depend on humidity. By contrast, the wet-bulb temperature reflects the lowest temperature that air can reach by evaporative cooling, and is always less than or equal to the dry-bulb temperature except at saturation (100% relative humidity) where they coincide. This is because evaporation removes sensible heat from the air until equilibrium is reached.

For a given target temperature setpoint required by server-level cooling, the cooling energy scales with the difference between that setpoint and the ambient reference temperature. When employing purely dry cooling, the system can reject heat only down toward the dry-bulb temperature; therefore, dry cooling is sufficient to maintain a facility loop (e.g., 29°C for air-cooled servers or around 40°C for liquid-cooled servers) without mechanical or evaporative assistance only when the dry-bulb temperature is a few degrees lower. In contrast, evaporative cooling can achieve effective heat rejection even when the dry-bulb temperature exceeds the loop setpoint, provided the ambient wet-bulb temperature is a few degrees lower than the setpoint. This evaporative supplement enables cooling at conditions where the dry-bulb temperature alone would be too high without other mechanically-/energy-intensive cooling methods.

Consequently, adjusting the facility-loop temperature setpoint can impact the water-power tradeoff: higher setpoints can decrease the energy savings achievable through evaporation, while lower setpoints increase power reduction benefits of evaporative cooling but require more water. Effectively, the optimal balance between water and electricity depends on site-specific constraints, including local water infrastructure capacity, electricity cost, and peak power capacity.

The introduction of liquid cooling for high-density AI servers at the server level further complicates the design. Liquid-cooled servers allow the facility loop to operate at a higher supply temperature setpoint while still maintaining safe component temperatures. This higher loop setpoint enables a greater fraction of the year to be handled by dry coolers without additional water usage. However, even in these scenarios, evaporative cooling continues to provide energy benefits: by lowering the effective temperature seen by the dry cooler, evaporative assistance reduces pump and fan power (which typically changes in a cubic manner with the fan speed), particularly during peak summer conditions in which the PUE for data centers with dry coolers can be significantly higher than the annualized average PUE [136, 137]. Consequently, evaporative cooling remains a valuable tool for mitigating peak electricity demand, even when higher loop temperatures are permissible with liquid cooling [15, 138]. In other words, dry coolers supplemented with evaporative cooling effectively operate as if the ambient air were cooler than the actual summer conditions. This benefit is especially significant in hotter climates. For example, a leading technology company's state-of-the-art data center under construction to host AI and core products employs a "closed-loop, liquid-cooled system that recirculates the same water" [19], but still needs up to 8 MGD for facility-level (evaporative) cooling assistance during the hottest days of the year [18].

While the high power density of AI server racks often necessitates liquid cooling (e.g., direct-to-chip and immersion cooling) because of its superior heat removal capability [55, 57], they still have approximately 20% or more loads cooled by air that have lower temperature setpoint than liquid-cooled IT loads [15, 139]. This means that evaporative assistance can have significant benefits of peak power reduction for the air-cooled portion of IT loads. For example, to balance the peak power demand and the host community's limited available water capacity, a large data center uses dry coolers for its liquid-cooled AI servers while evaporative assistance for other servers [138]. Indeed, a leading technology company acknowledges that "water is the most efficient means of cooling in many locations" [17].

It is important to note that batteries in data centers are typically deployed to support IT loads and provide uninterruptible power during outages before backup generators are activated, but using large-scale energy storage to directly reduce facility-level cooling power remains both technically challenging and economically costly relative to the achievable peak power reduction. As a result, data centers generally do not rely on battery-based solutions for cooling power reduction. Instead, many facilities employ evaporative cooling assistance, particularly during hot periods, to reduce peak energy consumption for heat rejection. Nonetheless, the limited availability of public water capacity is increasingly emerging as a binding—and often under-recognized—constraint [24], which can play a more decisive role in shaping the future water–power tradeoff for data center cooling.

## F Additional Recommendations

We provide additional recommendations to complement those in Section 5 for comprehensively addressing the growing water demand of data centers.

**Additional Recommendation 1: Waste Heat Recovery.** Waste heat from data centers represents a largely untapped resource that can be leveraged to improve overall energy and water efficiency, particularly as liquid-cooled AI servers increasingly operate at elevated temperatures exceeding 40°C. By capturing and repurposing this excess thermal energy, data centers can supply heating to buildings, district heating networks, or industrial processes, thereby reducing dependence on additional energy- and water-intensive cooling systems [140]. Although significant engineering challenges exist—such as the relatively low “quality” of the heat and the spatial separation from heat demand centers—waste heat recovery remains a promising strategy. It can not only deliver tangible benefits to surrounding communities but also help lower the water demand of data center operations.

**Additional Recommendation 2: Water-Aware Computing.** While water storage tanks can serve as a buffer to smooth hourly water demand peaks, it is challenging to use storage to fully offset multi-day peak water demand during prolonged heatwaves, as this requires costly utility-scale tanks, sanitation, maintenance, and other operational considerations. Nonetheless, data center workloads often exhibit substantial scheduling flexibility [141,142], which, when combined with multi-region site deployment, may effectively reduce peak water demand. Therefore, in addition to power grid demand response, “water-aware” computing presents a promising approach to lowering peak water demand and strengthening public water infrastructure resilience.

**Additional Recommendation 3: Water-AI Nexus.** Technologies such as advanced AI have the potential to substantially enhance the operation, efficiency, and resilience of public water systems [143]. For instance, AI-driven leak detection and predictive maintenance can identify losses in real time, reducing water waste and lowering operational costs [144]. These interventions are especially important given that water losses in distribution networks constitute a significant inefficiency, analogous to transmission and distribution losses in U.S. power grids, which exceeded the total energy consumption of all U.S. data centers in 2023 [2, 145]. By mitigating such losses, AI can effectively increase available water supply without new infrastructure investment. We therefore recommend development and deployment of AI and related technologies to assist public water systems in managing increasingly complex infrastructure networks, improving resilience, and simultaneously accommodating the growing water demands of data centers.

## G Economic Potential of Evaporative Cooling for Peak Power Reduction

We now perform an order-of-magnitude comparison to highlight the potential benefits of evaporative cooling as an economically competitive approach for shaving peak power demand.

Assuming an average power capacity utilization of 50% [2] and a peak PUE reduction of 0.15 as a *reference* case, using evaporative cooling for a 100 MW IT load can effectively reduce peak power demand by 30 MW, while requiring an estimated water capacity of 0.5–2.5 MGD (Appendix C). Based on the valuation of \$10–40 million per MGD capacity (Appendix A.7), we assume the mid valuation at \$25 million per MGD, yielding a total cost range of \$12.5–62.5 million of water capacity to cool a 100 MW IT load. By comparison, installing power generators to supply 30 MW, excluding long-distance transmission costs, would cost approximately \$37.2 million in the U.S. South and \$70.9 million in the U.S. Northeast, according to the most recent 2023 capacity-weighted construction cost estimates from the U.S. Energy Information Administration [146].

Although it does not account for other factors such as environmental reviews and construction lead times, this simplified orders-of-magnitude comparison highlights the potential of evaporative cooling as an economically competitive approach to shaving peak power demand, emphasizing the need for coordinated water-power planning to support growing data center loads. It also aligns with a leading technology company’s statement that “water is the most efficient means of cooling in many places” [17], and that some data centers need up to 8 MGD [18,21] of water capacity (for peak power shaving) with capital costs for the necessary water infrastructure upgrades reaching hundreds of millions of dollars [16,18,27]. Nonetheless,

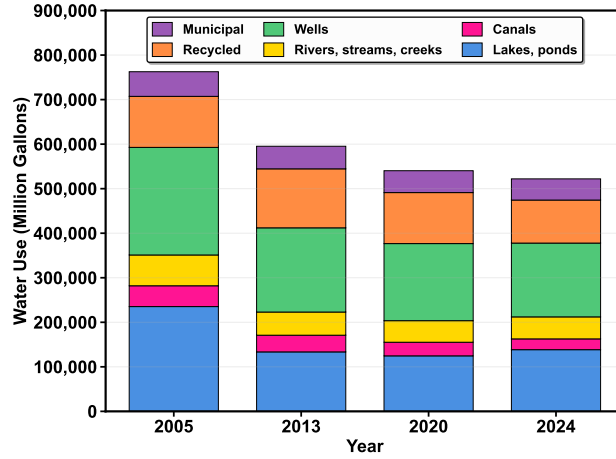


Figure 6: Statistics of the total water use of U.S. golf courses [147]

overall water availability at regional watersheds remains important, and actual peak power reductions can vary depending on local climate conditions and cooling system design.

## H Water Footprint of Animal Products

The study [103] offers a comprehensive assessment of the water footprint associated with farm animals and their products. To make our study self-contained and for clarity, we summarize the key findings in [103] related to animal products.

In hydrological accounting, the total water footprint is divided into three distinct categories: green water, which is the volume of rainwater consumed by crops that is stored in the soil; blue water, which refers to surface and groundwater sourced from aquifers and rivers for agricultural irrigation, livestock consumption, and industrial processes, including but not limited to municipal public water supply; and grey water, which represents the volume of freshwater required to dilute pollutants, such as fertilizer runoff, to meet water quality standards.

The total water footprint of global animal production was roughly 2,400 Gm<sup>3</sup> of water annually during the period 1996-2005. The vast majority of the water footprint is green water (rainfall stored in soil), with smaller portions coming from blue (surface and groundwater) and grey (polluted) water sources. Beef production alone accounts for about one-third of the total water footprint, while dairy production contributes 19%. The overwhelming portion of the water, i.e., approximately 98%, is the indirect water used to grow feed for the animals, whereas direct water use make up only a small fraction of the total. More specifically, drinking water for the animals, service water and feed mixing water account only for 1.1%, 0.8% and 0.03%, respectively.

Even assuming that all the direct water use originates from public or municipal water systems, it accounts for less than 2% of the total water footprint. Therefore, comparing the total water footprint of animal products with data centers' Scope 1 municipal water use is uninformative and obscures the actual challenges faced by public water systems.

## I Water Use of U.S. Golf Courses

We summarize the results of a national water use survey of U.S. golf courses reported in [147]. Although golf courses represent a substantial water user in aggregate when measured by total volumetric withdrawals, the reliance on municipal drinking water is relatively limited, representing approximately 7-9% of their total applied water nationwide between 2005 and 2024. The limited use of municipal water is partly attributable to state and local regulations that restrict or discourage the use of potable water for landscape irrigation, particularly in water-stressed regions [148]. In addition, total projected irrigation demand for U.S. golf courses declined by approximately 31% nationally between 2005 and 2024, reflecting changes in course management practices and efficiency improvement. Region-wise results and further breakdowns are provided in

the original paper [147]. The summary of nation-level water use statistics is presented in Fig. 6. The numbers refer to “applied water,” representing all the water sprayed, dripped, or otherwise applied to turf and landscaped areas.

Additionally, in the context of golf course irrigation, the daily peaking factor is typically less than 3.0 [149]. Golf course irrigation is generally concentrated during nighttime or the early morning, taking place before golfers begin their rounds, despite fluctuations in seasonal water requirements. Even when supplied by public water systems, a typical fully-irrigated golf course uses up to 0.5 MGD [24].

## J Capacity Planning and Management in Public Water Systems

In the United States, public water system capacity planning is governed by a combination of federal capacity development requirements under the Safe Drinking Water Act (SDWA) [70] and state-level implementation through permitting, financing, and utility regulation. While federal law does not prescribe explicit numerical utilization thresholds at which capacity expansion must occur, states typically operationalize capacity planning through a combination of engineering design criteria, financing rules, and legally enforceable limits on service commitments. Here, we use California as a representative and well-documented example [40], which separates planning triggers based on actual utilization from legal limits based on allocated capacity.

**Planning triggers based on utilization.** Capacity expansion planning is typically initiated well before a system reaches its physical design limits. This expectation is reflected in Drinking Water State Revolving Fund (DWSRF) policies administered by the California State Water Resources Control Board [150]. Specifically, under California’s DWSRF rules, capacity expansions are generally limited to approximately 10% above existing MDD. This is intended to ensure engineering reliability, maintain service to existing customers, and reduce financial and operational risk.

As a result, when observed or projected demand approaches roughly 80–90% of existing design capacity, utilities are expected to begin formal planning activities, including demand forecasting, engineering evaluation, environmental review, and financing arrangements. The utilization range of 80–90% serve as planning references rather than enforceable legal thresholds, and are intended to ensure that infrastructure expansion occurs proactively rather than in response to emergency conditions.

**Allocated capacity and legal limits on new connections.** Distinct from the actual operational utilization is the concept of *allocated capacity*, which accounts for existing demand together with approved but possibly not completed service commitments. In California, once allocated capacity equals a system’s demonstrated or permitted supply capacity, additional service connections may be legally restricted even if actual water usage still remains below physical limits.

Specifically, for regulated water utilities, Section 2708 of the California Public Utilities Code empowers regulators to prohibit new or additional service connections when further commitments would impair service reliability or violate capacity constraints [151]. Importantly, this determination is based on the system’s ability to serve its committed load, not necessarily on its actual average usage. Thus, regulatory decisions require utilities that cannot demonstrate adequate source, treatment, storage, or distribution capacity to comply with or request a service connection moratorium until additional capacity is constructed or otherwise secured [152]: *“A system’s facilities shall have the capacity to meet the system’s MDD, PHD plus any required fire flow in the system as a whole and in each individual pressure zone. If, at any time, the system does not have this capacity, the system shall request a service connection moratorium until such time as it can demonstrate the source capacity has been increased to meet system requirements.”* As a result, a public water system may be considered legally “at capacity” once its allocated commitments fully exhaust approved capacity, even if actual demand remains, for example, near or lower than 70% of the physical design capacity.

**Implications for new service connections.** Combined together, these mechanisms illustrate a general framework for public water system infrastructure management. First, infrastructure planning and investment are triggered as systems approach high utilization levels but below full design capacity. Second, legally binding restrictions on new service connections may apply once allocated capacity is fully committed, regardless of the actual water use. This structure aligns long-term infrastructure planning with public health protection and service reliability while preventing over-extension of public water system resources.

Consequently, a public water system’s ability to accommodate new service connection requests is governed by its available capacity, decided by (the more restrictive of) the remaining physical capacity and the

uncommitted capacity (i.e., total physical capacity minus already allocated capacity). The system's full design capacity is therefore not the primary determinant in decisions regarding new connections. Even a large public water system serving multiple existing large users may deny a new service connection request if its available capacity is limited, even when the requested capacity is substantially smaller than that of some existing users.

This practice is also reflected in recent data center projects. For example, a major technology company stated that its new data centers in Louisiana will draw water exclusively from the host community's "verified surplus water" capacity, aiming to ensure "no strain on local water supplies" [16].

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# Data centers face a new environmental concern

By [MIRANDA WILLSON \(HTTPS://WWW.EENEWS.NET/MEET-THE-TEAM/MIRANDA-WILLSON/\)](https://www.eenews.net/meet-the-team/miranda-willson/) | 07/20/2026 01:52 PM EDT

Construction of data center pipes can produce wastewater that is troubling to sewer systems and that current regulations may not sufficiently address.



Data center construction is posing new concerns for local wastewater utilities. Marco Bicca/Unsplash

Data centers sprouting up across the U.S. are facing an emerging environmental challenge: What happens to the wastewater they generate, and what kind of contaminants are in it?

Recently, a data center under construction in Cheyenne, Wyoming, was found to have contaminated the sewer system with a rare bacterium.

The water utility took swift action. The Cheyenne Board of Public Utilities fined the project developer, revoked its wastewater permit and announced that it would not accept certain types of wastewater from data centers citywide.

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The developer of the project — which is backed by Meta — is appealing the \$10,000 fine and disputes the utility’s conclusion tracing the bacterium to its project.

But the incident highlights what engineers view as an emerging challenge for the data center industry that is already under scrutiny over its environmental footprint. As new projects crop up nationwide, experts say it’s not clear whether small utilities have the infrastructure and regulations to ensure the

wastewater is properly managed.

“It’s almost like overnight, we have a new industry. Normally when it comes to industrial discharges, the information is public and also well documented,” said Jonathan Brant, an engineering professor at the University of Wyoming.

With data centers, there is “scant actual hard data out there on what these waters look like or how these waters are going to be managed,” Brant said.

Powering AI’s rise are an influx of large, powerful data centers that each contain up to hundreds of thousands of computer chips. Some use water to keep those chips cool, while others primarily rely on electric power — [a trade-off \(https://www.eenews.net/articles/ais-no-win-choice-using-huge-amounts-of-water-or-energy/\)](https://www.eenews.net/articles/ais-no-win-choice-using-huge-amounts-of-water-or-energy/) that can result in projects consuming huge amounts of electricity or guzzling millions of gallons of water per day.

But it’s in the long process of building a new data center where wastewater concerns first arise. The initial build can produce wastewater that local sewer systems may not be used to — and which current regulations might not address.

“The regulatory processes for industries that EPA has are really meant for once it’s constructed and operated. Then you issue them a permit and they have to report to you,” said Kendra Sveum, operations director at Loudoun Water, the utility serving northern Virginia’s data center hub. “There’s really not a system in place for these construction activities.”

To help prevent computer chips from overheating and malfunctioning, most data centers being built now use a closed-loop system that continuously circulates liquid through a sealed pipe.

“Closed-loop” is sometimes used as short-hand for water-efficient data centers. But it has little to do with a data center’s actual water usage, as that depends on whether the data center uses water to expel heat from the building, said Shaolei Ren, an engineering professor at the University of California, Riverside.

Instead, the circulation of liquid coolant through contained pipes is a virtual necessity in modern data center design, providing extra protection against overheating of chips, Ren said. The water can circulate for months or years before it needs to be disposed of and replaced.

“Almost every AI data center today, you’re going to see some type of these closed-loop systems,” Ren said. “So as more data centers are using this type of cooling system, the wastewater discharge is becoming an infrastructure consideration.”

Cheyenne may have learned that the hard way.

Prior to beginning operations, a data center must clean its closed-loop pipes. The process is known as “fill and flush,” wherein water gets circulated through the pipes — sometimes with the addition of chemicals to prevent pipe corrosion — to remove bacteria and other impurities.

What’s left behind is wastewater with contents that utilities may not recognize.

It’s that type of wastewater — fill-and-flush discharges and other wastewater from closed-loop cooling systems — that Cheyenne’s utility says it will no longer accept.

“We’ve set up a rule that says, ‘You will not discharge to the public wastewater system, period, until we learn more about what’s going on and can understand exactly what happened,’” Bryce Dorr, an engineer with Board of Public Utilities, told the Cheyenne City Council last week.

The decision came after utility staff discovered a strange bacterium, *cupriavidus gilardii*, in the sewer system in February. The finding was alarming because the bacterium remained in wastewater after it was treated and reused to irrigate a golf course as part of a water conservation program. Following an extensive investigation, the utility traced the bacteria to the data center in the southern portion of the city.

Meta’s contractor, Fortis Construction, argued that the sewer board hasn’t provided evidence to prove that the contaminant came from its project. It filed an appeal last week to dismiss the fine and get its permit reinstated.

“When the issue was first raised, our contractor immediately stopped releasing water into the wastewater system and hauled it off-site,” Francis Brennan, a Meta spokesperson, said in a statement. “Subsequent independent, third-party testing — including at least one test conducted in conjunction with the Board of Public Utilities — detected no bacteria. However, the Board has not shared all of its underlying testing data or other information with Meta, our contractor, or the public.”

Fortis Construction did not respond to multiple requests for comment.

## ‘We pay very close attention’

If there’s anyone in the sewage treatment business who understands how to deal with data centers, it’s Sveum. At Loudoun Water, she helps manage wastewater from more than 200 data centers in northern Virginia’s data center alley.

Not all water that the facilities send to the sewer system is problematic, Sveum said.

Data centers that use water evaporation to reject heat routinely discharge what’s known as blowdown water. The evaporative process can concentrate whatever contaminants that were in the water to begin with, such as solids and salts, but it’s still similar to what’s generated from commercial buildings and homes, Sveum said.

Similar to the Wyoming project, problems have popped up during the construction of closed-loop pipes, she said.

And in Loudoun County, data center construction has been near-constant for over a decade.

“The construction of those loops, we pay very close attention to, because that process ... can use chemicals that aren’t really suitable for wastewater treatment,” Sveum said. “We put [a] process in place essentially as we experienced issues over time. We realized we needed a control mechanism.”

Data center developers must now test the flush-and-fill water produced during construction before it can be sent to the treatment plant. Loudoun Water also verifies the results independently, Sveum said.

In some cases, the utility has taken issue with the wastewater and directed data center developers to send it to “an appropriate facility” for disposal, she said.

“A lot of smaller utilities are being faced with these challenges. We like to share that Loudoun Water makes [data centers] do this, so they can too,” Sveum said.

Across the U.S., most data centers send wastewater to local treatment plants instead of discharging directly into nearby waters, said Wangusi Barasa, the former director of water sustainability at Amazon who now runs BlueCredit, a water consulting firm.

In general, the biggest risks for utilities receiving the water is if it contains contaminants that the treatment plant cannot remove or that interferes with treatment itself.

If chemicals, metals or nutrients like phosphorous remain in the wastewater after treatment, they can recirculate in rivers, lakes or streams — and utilities may face fines if the levels exceed what’s allowed under their permit.

“You’re concentrating whatever was in the source water. That’s a problem if you’re doing it continuously and in large volumes,” Barasa said.

Last December, Ohio proposed a general permit that would make it easier for data centers to be approved to send wastewater directly into nearby waters instead of to a municipal treatment plant.

The proposal drew criticism from environmental groups and members of Ohio’s congressional delegation, and more than 7,000 people filed comments to the state. Ohio EPA has not taken further action.

## ‘Should never have happened’

It’s not clear how a rare bacterium may have gotten into the wastewater from the Cheyenne data center.

While Loudoun Water has faced issues with data center discharges containing high levels of metals and nutrients, there’s never been an issue with bacteria, Sveum said.

Brant, the University of Wyoming professor, said the bacterium identified is known for proliferating when copper is present. But he has questions about why it would have had time to proliferate in the closed-loop pipes, given that the fill-and-flush process should not have taken very long, and why the utility was even testing for the substance.

Either way, he’d like to see stronger regulations on data center wastewater.

“Do I think there need to be changes? Absolutely,” he said. “And a lot of it is improving the transparency. Stop using little anecdotes, like, ‘[We’re] only using six bathtubs or 10 bathtubs of water.’”

Brennan, the Meta spokesperson, said fill-and-flush is a critical step for commissioning a data center’s pipes before it’s turned on. Although Sveum said some data centers flush out those pipes several times, Brennan said it was a “one-time step” for the data center in Cheyenne.

Meta further described the fluid from fill-and-flush as a “known, monitored” substance that does not contain industrial contaminants. The company also said that it tracks what’s in the water produced by its data centers.

It’s not clear how many data centers in Cheyenne could be affected by the utility’s ban on wastewater from closed-loop pipes. The Cheyenne Board of Public Utilities declined to make someone available for an interview and did not answer written questions.

At the city council meeting last week, Dorr — the utility engineer — said there’s no evidence that the bacterium was intentionally added to the data center pipes. But after the substance was identified, the utility shut down its water reuse system for several months due to the risk of human infections from

exposure.

It took extensive efforts to remove all traces of the substance from Cheyenne’s sewer system and water reuse operations, according to the utility. The \$10,000 fine was meant to help cover those costs.

The utility is “still trying to understand what happened,” Dorr said. In the meantime, some local officials in Cheyenne said the incident should be a sign that data centers need more oversight as the industry grows.

“This was a problem that should never have happened, and I’m still not certain how it did,” said Peter Laybourn, a member of the nonpartisan Cheyenne City Council. “We’re welcoming to data centers and have done well on it so far, but you need regulation.”

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**From:** Ariana Barcenas Kanemoto <[aybarcen@gmail.com](mailto:aybarcen@gmail.com)>

**Sent:** Friday, July 24, 2026 4:20 PM

**To:** DRP Info <[info@planning.lacounty.gov](mailto:info@planning.lacounty.gov)>

**Subject:** Data Center Study

**CAUTION: External Email. Proceed Responsibly.**

To Whom It May Concern:

Thank you Los Angeles County for putting together a study on data centers. I saw on social media that you were taking input from the public for what we wish to see in the study. Though I'm sure you are well into it, I would hope that the final published paper take into account these various topics or look to introduce them if not already. These questions are in regards to hyperscale data centers and AI data centers.

1) Water

- What type of water (such as recycled vs freshwater) do data centers need?
- What is the anticipated water consumption from each type of water resource?
- How much water would be taken away from residents?
- How much of the surrounding area is impacted by the data centers water consumption?
- Would residents expect an increase in their water bill?
- Is there a chance that data centers can introduce harmful chemicals to our water supply?
- Can you explain methodology for determining water usage. I imagine this is tricky to study based on the type of inquiry received by an AI chat bot and its output.
- Are the new technologies to save water enough to significantly reduce the impact?
- Can we potentially face a problem similar to Lake Tahoe?
- How would this affect wildlife?

2) Electricity

- How much energy would they need from the power grid?

Would the proposed areas they are looking into be able to supply the energy demand?

- Would residents expect an increase in their electrical bill?
- Why haven't data centers been seen to pay their share of this utility even accounting for tax revenue, jobs, and income?

### 3) Noise Pollution

- What noise level are we expected to hear and how far does that sound travel?
- Is that noise 24/7?
- What are the harms of persistent noise to the residents both physically and psychologically?
- How does this harm the wildlife? Does this affect their migration patterns?

### 4) Air Pollution

- What pollutants do we expect data centers to emit?
- Do we have the proper instruments to measure all the pollutants that they release in the air?
- What are the risk and harms of these pollutants to residents?
- Are there risks that we cannot measure as of now because of lack of proper instruments?

### 5) Light Pollution

- How much of the surrounding area would be affected by the immense light of these facilities?
- What are the harms of light pollution to residents both physically and psychologically?
- How does this harm the wildlife?

### 6) Soil Impact

- Does the construction of the data centers affect the land's soil or nearby land?
- Does the day to day operations affect the land's soil or nearby land?
- Are there contamination risks?

### 7) Long Term Economic Trade Offs

- How is our property value affected both short term and long term due to the presence of a data center nearby?
- How would these centers help the community in the long term financially? It seems like most of the gain is short term because of the construction, but creates so few jobs in the area in the long term.
- Would data centers contribute to long term economic growth to the host city?
- Data centers may contribute billions to state and local tax revenue, but do

residents end up breaking even if they are expected to pay for the consequences of the data center like rising utility cost?

Thank you for your time.

Sincerely,

Ariana Barcenas

July 31, 2026

County of Los Angeles Board of Supervisors  
Kenneth Hahn Hall of Administration  
500 West Temple Street, Room 383  
Los Angeles, California 9001

RE: Data Center Health, Environmental, and Land Use Impacts in Unincorporated Los Angeles County

Dear County of Los Angeles Board of Supervisors,

On behalf of the Democratic Socialists of America-Los Angeles (DSA-LA) we appreciate the County's effort to evaluate the health, environmental, and land use impacts of data centers. **We urge the County to recommend and adopt a ban on new hyperscaler data centers in unincorporated Los Angeles County.**

Hyperscaler data centers are fundamentally different from traditional telecommunications facilities, university research computing centers, government data facilities, or smaller enterprise data centers. Hyperscalers are massive facilities designed to support cloud computing and artificial intelligence workloads for some of the largest technology corporations in the world. These facilities consume extraordinary amounts of electricity, water, and land while creating relatively few permanent jobs compared to their environmental footprint. Their impacts are unlike those of traditional commercial development and warrant separate regulation and prohibition.

Los Angeles County is simultaneously confronting a housing crisis, climate emergency, rising utility costs, and environmental justice challenges. The City of Los Angeles is required to plan for 456,643 housing units under its Regional Housing Needs Allocation, while Los Angeles County faces a shortage of approximately 485,667 affordable homes for low-income renter households.<sup>1,2</sup> Scarce land should be prioritized for housing, community-serving development, climate resilience projects, and public infrastructure rather than energy-intensive facilities that primarily serve the growth of private artificial intelligence and cloud computing industries.

The members of DSA-LA, are particularly concerned about the enormous resource demands associated with hyperscaler facilities. Data centers require substantial amounts of electricity and water and can drive costly investments in transmission, generation, and distribution infrastructure. California policymakers have increasingly warned that large-load customers such as hyperscale data centers may shift billions of dollars in infrastructure costs onto ratepayers if adequate protections are not adopted.<sup>3</sup> Research has also found that approximately two-thirds of data centers constructed since 2022 have been built in regions experiencing high water stress.<sup>4</sup> In Southern California, where drought and water scarcity remain persistent concerns, these impacts cannot be ignored.

We are equally concerned about public health and environmental justice impacts. Data centers rely on industrial cooling systems and backup diesel generators that contribute to air pollution, greenhouse gas emissions, and noise pollution. Statewide public health costs associated with data center-related air pollution have been estimated to exceed \$155 million annually and are projected to increase significantly as the industry expands.<sup>5</sup> These burdens are often concentrated in working-class communities and communities of color that already experience disproportionate exposure to warehouses, freeways, freight corridors, and industrial pollution. The County should not permit a new generation of industrial development that deepens existing environmental injustices.

**DSA-LA urges the County to prohibit new hyperscaler data centers in unincorporated Los Angeles County. At a minimum, the County should immediately establish a moratorium on approvals while it develops permanent regulations.** The County should adopt a specific definition of data centers based on electrical load, water consumption, and facility size; require full Environmental Impact Reports for all projects; prohibit reliance on ministerial approvals or categorical exemptions; require public disclosure of projected water and energy use; and conduct cumulative environmental justice analyses for all proposed facilities.

We further recommend that the County establish special utility tariffs and impact fees for existing large-scale data centers to ensure residents are not subsidizing private infrastructure costs. Existing facilities should be required to disclose electricity demand, water consumption, backup generator operations, air emissions, and noise levels. Any facility permitted to operate within the County should be required to procure additional clean energy resources, meet strict noise standards, pay living wages, satisfy local hire requirements, and provide meaningful community benefits.

As part of its consideration of limitations on data centers, the City of Cudahy recently described actions by other localities, including several in Los Angeles County, as per below:

**Monterey Park** (Los Angeles County). On January 21, 2026, the Monterey Park City Council adopted an urgency ordinance establishing a 45-day moratorium on all data center development. The moratorium was subsequently extended through January 21, 2027. On April 20, 2026, the Council adopted ordinances designating data centers as a public nuisance and permanently prohibiting all data centers within city limits — making Monterey Park one of the first cities in California to enact such a permanent ban.

**Montebello** (Los Angeles County). On February 11, 2026, the Montebello City Council adopted an urgency ordinance imposing a 45-day moratorium on data centers, including artificial-intelligence (AI) facilities, while city staff studies their impacts and develops permanent zoning standards. The citywide moratorium was enacted due to concerns over infrastructure, power, and water consumption.

**Oakley** (Contra Costa County). On April 14, 2026, the City of Oakley became one of the first Bay Area cities to adopt a temporary moratorium on data centers by adopting a 45-day urgency ordinance that blocks acceptance, processing, or approval of data center land use applications while the City studies regulatory standards, expressing intent to develop permanent zoning standards by the end of 2026. In May 2026, the moratorium was subsequently extended by the City Council for an additional period of 10 months and 15 days.

**Calipatria** (Imperial County). On May 12, 2026, the Calipatria City Council voted to move forward with a public hearing on an interim urgency ordinance that would establish a moratorium on the approval, permitting, construction, or expansion of large-scale data center facilities. The proposed ordinance defines “large-scale data center” as any facility exceeding 10,000 square feet of dedicated server space, 5 megawatts of projected electrical demand, or one acre of land dedicated primarily to such use.

**El Monte** (Los Angeles County). On March 18, 2026, the El Monte City Council adopted an urgency ordinance establishing a 45-day moratorium prohibiting processing, approval, and acceptance of new data center land use applications. The urgency ordinance was passed in order to allow staff time to evaluate impacts, gather public input, and draft zoning regulations for consideration.

**Baldwin Park** (Los Angeles County). On March 4, 2026, the City Council of Baldwin Park adopted an urgency ordinance establishing a 45-day moratorium on the approval, establishment, or operation of datacenters in the City in order to allow City staff time to analyze and recommend regulatory options for establishing new or updated regulations for data centers. On April 15, 2026, the City Council held a public

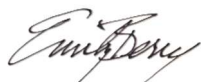
hearing to extend the urgency ordinance establishing a moratorium for an additional 10 months and 15 days.

**Imperial** (Imperial County). On June 3, 2026, the City of Imperial unanimously approved a 45-day temporary moratorium on the approval of certain emergency high-energy industrial and technology uses, including data centers, battery energy storage systems, and similar utility-intensive industrial or technological uses.

Concerns regarding data centers are no longer limited to local communities. In 2026, U.S. Senator Bernie Sanders and U.S. Representative Alexandria Ocasio-Cortez introduced federal legislation that would impose a nationwide moratorium on new artificial intelligence data centers until comprehensive protections are established for workers, communities, consumers, and the environment.<sup>6</sup> The introduction of federal moratorium legislation reflects growing recognition that the rapid expansion of artificial intelligence infrastructure presents significant environmental, economic, and democratic challenges that require public oversight and precautionary policymaking.

Ultimately, the question before the County is not simply how to regulate data centers, but whether the County should allow these facilities to expand at all. The County has made commitments to environmental justice, climate action, public health, and equitable development. We believe those commitments are incompatible with the continued expansion of data centers. We therefore urge the Board of Supervisors to recommend a ban on new hyperscaler data centers in unincorporated Los Angeles County and to prioritize housing, community-serving development, and climate resilience over energy-intensive artificial intelligence infrastructure.

Sincerely,



Emily Berry  
Co-Chair Climate Justice Committee  
On Behalf of the Democratic Socialists of America, Los Angeles Chapter

***Please see comments in the attached file.***

#### Endnotes

1. California Department of Housing and Community Development (HCD), Regional Housing Needs Allocation (RHNA), 2021–2029 Housing Element Cycle.
2. California Housing Partnership, Los Angeles County Housing Need Report, 2025.
3. Little Hoover Commission, Report No. 292, March 2026, examining large electrical loads and utility infrastructure cost allocation.
4. University of California, Berkeley Center for Law, Energy & the Environment (CLEE), Data Centers and Water Stress Analysis, 2026.
5. Environmental and Energy Study Institute (EESI), The Hidden Costs of Data Centers, March 2026.
6. U.S. Senator Bernie Sanders and U.S. Representative Alexandria Ocasio-Cortez, Artificial Intelligence Data Center Moratorium Act announcement, Office of Senator Bernie Sanders, 2026.

Please Ban Data Centers in LA County

| Timestamp       | Email Address               | Name                | Community/City | Zip   | Street Address                  | Cell phone   | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------|-----------------------------|---------------------|----------------|-------|---------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7/23/2026 12:42 | emdberry@gmail.com          | Emily Berry         | Playa Del Rey  | 90293 | 6524 Vista Del Mar              |              | Ban new data centers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7/23/2026 12:47 | cblumenshine02@gmail.com    | Caleb               | Blumenshine    | 90066 | 12760 Caswell Ave #204          | 4064789290   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7/23/2026 12:47 | bookworm.r@gmail.com        | Robert Nickell      | Los Angeles    | 90064 |                                 | 5629009535   | Data centers bad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7/23/2026 12:48 | redwindmill@gmail.com       | Jessica Parral      | Los Angeles    | 90005 |                                 | 6265139867   | I am a struggling LA County resident asking the Board to consider the immense impact of data centers on utility costs, water usage, and pollution. I ask the Board to not approve data centers unless they would eagerly live next to one along with their families.                                                                                                                                                                                                                                                                                                                                       |
| 7/23/2026 12:51 | bnvillanueva86@gmail.com    | Brenda Villanueva   | Canoga Park    | 91303 | 6630 Independence Ave., Apt 306 | 8183076105   | The County has made commitments to environmental justice, climate action, public health, and equitable development. We believe those commitments are incompatible with the continued expansion of data centers. We therefore urge the Board of Supervisors to recommend a ban on new hyperscaler data centers in unincorporated Los Angeles County and to prioritize housing, community-serving development, and climate resilience over energy-intensive artificial intelligence infrastructure.                                                                                                          |
| 7/23/2026 12:52 | wtongsuthi@gmail.com        | William Prince      | Los Angeles    | 90005 | 748 Irolo St                    |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7/23/2026 12:53 | jon.varghese3@gmail.com     | Jonathan T Varghese | Playa Vista    | 90094 |                                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7/23/2026 12:56 | ameliaboadicea@gmail.com    | Amelia Hanson       | Los Angeles    | 90006 | 1209 S Westmoreland Ave         | 651-792-5833 | AI data centers have no place in our communities. These facilities consume enormous amounts of electricity, water, and land that should be reserved for housing, parks, and real, local businesses. Data centers drive up the cost of electricity for all involved, and poison the air and land around it, causing years of damage for nearby communities. The water used by these centers puts a strain on communities where water is already a limited resource. There is no need for these facilities and allowing them to be build in our communities will only cause harm and further climate change. |
| 7/23/2026 13:02 | thisisjoel66@gmail.com      | Joel Martin         | Los Angeles    | 90025 |                                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7/23/2026 13:07 | ibalboaconsulting@gmail.com | Isabel Balboa       | Torrance       | 90504 | 4018 W 175 St                   |              | AI benefits only the billionaires. No working class person wants or needs it.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 7/23/2026 13:10 | maria.my.do@gmail.com       | Maria Đỗ            | Los Angeles    | 90028 |                                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



**Please Ban Data Centers in LA County**

| Timestamp       | Email Address                 | Name                | Community/City        | Zip        | Street Address                         | Cell phone | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------|-------------------------------|---------------------|-----------------------|------------|----------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7/23/2026 13:14 | revelesman@gmail.com          | Aaron Reveles       | East Los Angeles      | 90022      | 706 Bradshaw Ave                       | 6266175621 | Prevent the building of data centers, it will harm working class people across all of LA County                                                                                                                                                                                                                                                                                                                                                 |
| 7/23/2026 13:19 | omnisyncd@gmail.com           | Elizabeth Hernandez | 1104 E Imperial Ave B | 90245      | 1104 E Imperial                        | 3059057259 | We need new housing, we need affordable electricity, and data centers are counter to both goals. It's just common sense. The people do not want data centers. Only greedy companies with no care for environmental consequences do..                                                                                                                                                                                                            |
| 7/23/2026 13:24 | britneyalyse@gmail.com        | Britney Baker       | Los Angeles           | 90016      | 5322 Westhaven St                      | 6187413726 | No Data Centers in LA County!!                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 7/23/2026 13:28 | ephilip2011@gmail.com         | PHILIP Iglaue       | Los Angeles           | 90041      | 5247 Windermere Avenue                 | NA         | Please do the right thing                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7/23/2026 13:29 | clairepalmer14@gmail.com      | Claire Palmer       | Los Angeles           | 90008      |                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7/23/2026 13:34 | spabs1@gmail.com              | Sean Abbott         | Brentwood             | 90049-6266 | 1145 Barry Ave Apt 304                 | 3237706638 | Dear LA BOS: LADWP bills are at record highs especially in the face of the also record high temperatures brought on by the climate crisis we all face together. Please enact a ban for these data centers so that we are not facing worsening conditions from two directions: the exacerbation of the crisis caused by data centers themselves, and the increased price burden on residents' energy bills due to the energy demands. Thank you. |
| 7/23/2026 13:35 | victoriakmaness@gmail.com     | Victoria Maness     | West Hollywood        | 90069      |                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7/23/2026 13:47 | jackiecalvache@yahoo.com      | Jackie Calvache     | San Gabriel Valley    | 91744      | 1129 Indian Summer Ave<br>La Puente    | 6264748363 | I grew up in Unincorporated East Los Angeles and have witnessed the displacement and pollution my community members faced throughout the majority of my life. We need representation and protection. Do your job and stand by the people who make Los Angeles a home to all who visit. Invest in your communities and provide equitable, safe living conditions.                                                                                |
| 7/23/2026 14:21 | noahss2054@gmail.com          | Noah Suarez-Sikes   | Los Angeles           | 90057      | 329 S Reno St                          | 7736201312 | Hyper scale data centers are fundamentally destructive to the entire city, have enormous environmental problems, and empower rich oligarchs at the expense of working class people. No more.                                                                                                                                                                                                                                                    |
| 7/23/2026 14:24 | snorebark@gmail.com           | Lisa Laureta        | Los angeles           | 90029      |                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7/23/2026 14:57 | everythingdauntless@yahoo.com | Maddy Bellman       | Palms                 | 90034      |                                        |            | This shouldn't even be a discussion. NO TO DATA CENTERS.                                                                                                                                                                                                                                                                                                                                                                                        |
| 7/23/2026 15:22 | xander@karafin.com            | Xander Karafin      | Los Angeles           | 90066      |                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7/23/2026 16:09 | bdoherty02@gmail.com          | Brian Doherty       | Marina del Rey        | 90292      | 4241 Via Marina Apt. 406<br>Building K | 3012375282 |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

**Please Ban Data Centers in LA County**

| Timestamp       | Email Address                   | Name               | Community/City      | Zip   | Street Address             | Cell phone     | Comment                                                                                                                                                                                                                                                        |
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| 7/23/2026 16:34 | lamarjorie@proton.me            | Marjorie Hunt      | Los Angeles         | 90031 | 3212 Manitou               |                |                                                                                                                                                                                                                                                                |
| 7/23/2026 16:35 | gabbie.metheny@gmail.com        | Gabbie Metheny     | Los Angeles         | 90042 |                            |                |                                                                                                                                                                                                                                                                |
| 7/23/2026 17:16 | norarahimian@yahoo.com          | nora rahimian      | los angeles, ca     | 90034 |                            |                | People and environment over profit. This doesn't benefit anyone.                                                                                                                                                                                               |
| 7/23/2026 18:11 | riok47@protonmail.com           | Sarah Krichmar     | Los Angeles (Palms) | 90034 |                            | (323) 333 7199 |                                                                                                                                                                                                                                                                |
| 7/23/2026 20:48 | zoeatemple@gmail.com            | Zoë Temple         | Los Angeles         | 90034 |                            |                | We should NOT be building data centers in Los Angeles County. Our communities and ecosystems are already threatened with dangerous water access issues, energy costs, and air quality issues. These lands should be put to better use serving community needs. |
| 7/23/2026 22:35 | jessejamesaustin@protonmail.com | Jesse-James Austin | LA                  | 90025 | 11970 Iowa Ave             | 2126710749     |                                                                                                                                                                                                                                                                |
| 7/24/2026 11:06 | samzacher93@gmail.com           | Sam Zacher         | Los Angeles         | 90042 |                            |                |                                                                                                                                                                                                                                                                |
| 7/24/2026 11:25 | humafz@proton.me                | Humaira Afzal      | Pasadena            | 91106 | 777 S Marengo, Apt 3       |                |                                                                                                                                                                                                                                                                |
| 7/24/2026 12:07 | kristen.cervantes03@gmail.com   | Kristen Cervantes  | Los Angeles         | 90034 |                            |                | As we begin to experience the growing impacts of climate change, we have a responsibility to use our resources wisely. Data centers are having harmful environmental and human impacts in communities across the US. We do not want them here.                 |
| 7/24/2026 12:30 | redbicycle77@gmail.com          | Haley Webb         | Palms               | 90034 |                            |                |                                                                                                                                                                                                                                                                |
| 7/24/2026 12:31 | pendergest@Gmail.com            | mary pendergest    | los angeles         | 90034 |                            |                | Please ban new hyperscaler data centers in unincorporated Los Angeles County and instead prioritize housing, protection for AI surveillance, environmental justice, climate resilience, and community needs.                                                   |
| 7/24/2026 12:33 | ncavideo@gmail.com              | Nick Angilello     | Palm / LA           | 90064 | 2820 S Sepulveda Blvd. #10 | 3234204205     | Thank you for helping save LA from Data Centers and fuck A.I.                                                                                                                                                                                                  |
| 7/24/2026 12:35 | ayuz1qiz@gmail.com              | Meli Sedghi        | La                  | Y     |                            |                | Pleaaee do nit allow datacenter buildouts in La county                                                                                                                                                                                                         |
| 7/24/2026 12:50 | danrobitzski@comcast.net        | Dan Robitzski      | Los Angeles         | 90034 |                            |                | I cannot think of a single greater waste of money and resources than building a new data center.                                                                                                                                                               |

Please Ban Data Centers in LA County

| Timestamp       | Email Address             | Name                  | Community/City      | Zip   | Street Address                        | Cell phone | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------|---------------------------|-----------------------|---------------------|-------|---------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7/24/2026 12:52 | jenniluna13@yahoo.com     | Jennifer Porzio       | Culver City         | 90232 | 11043 Matteson Ace                    |            | Los Angeles is too crowded to have a data center near it. Our water supplies are already taxed, we can't give it to AI!                                                                                                                                                                                                                                                                                                                                                                        |
| 7/24/2026 12:53 | garyclair@gmail.com       | gary clair            | Los Angeles         | 90034 | 3436 Vinton Ave                       | 8184155353 | Corpus Christi, TX is going to be the first city to run out of water. Our drinking water is a finite resource. Only 2.5-3% of the planet's water is fresh water. Only 1% of which is reachable by humans. China put their data centers in the ocean. Be smart like China.<br><a href="https://www.sciencealert.com/tremendously-grave-the-first-us-city-is-on-track-to-run-out-of-water">https://www.sciencealert.com/tremendously-grave-the-first-us-city-is-on-track-to-run-out-of-water</a> |
| 7/24/2026 12:54 | ewilhte13@yahoo.com       | Erica Wilhte          | Los Angeles         | 90034 |                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7/24/2026 12:55 | strategicandvisual@me.com | Andrea Leon-Grossmann | Los Angeles         | 90064 |                                       |            | We cannot drink data and we have enough noise pollution, ban data centers now!                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7/24/2026 13:09 | traceywheeler10@yahoo.com | Tracey Wheeler        | Palms / Los Angeles | 90034 |                                       |            | NO HYPERSCALE DATA CENTERS - PERIOD!                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7/24/2026 13:19 | cjaehnke@ymail.com        | Colin Jaehnke         | Los Angeles         | 90034 |                                       |            | We should not be prioritizing data centers and city/county profits over the health and wellbeing of our residents                                                                                                                                                                                                                                                                                                                                                                              |
| 7/24/2026 13:28 | csoz2126@hotmail.com      | Cynthia Soza          | Palms               | 90034 | 3537 Clarington Ave                   |            | Data centers are already causing issues in other states,we don't need to create such in ours                                                                                                                                                                                                                                                                                                                                                                                                   |
| 7/24/2026 13:31 | maria.duran011@gmail.com  | Maria Catalan         | Palms               | 90034 | 3425 motor ave                        |            | The greater LA community does not want data centers! They use excessive resources that as angelinos we already don't have. Listen to the people and do the right thing! We are watching!!!!                                                                                                                                                                                                                                                                                                    |
| 7/24/2026 13:41 | saritakoz@aol.com         | Sara Kozameh          | Long Beach          | 90807 |                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7/24/2026 13:47 | mplona@gmail.com          | Michael Plona         | Los Angeles         | 90034 |                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7/24/2026 13:49 | carolinesirand@gmail.com  | Caroline Keyes        | LOS ANGELES         | 90034 | 10753 1/2 Tabor Street                | 3104972330 | No data centers in Los Angeles!                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7/24/2026 14:41 | certainclouds@gmail.com   | Abby Polakow          | Culver City         | 90232 |                                       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7/24/2026 14:49 | desi.ewing2014@gmail.com  | Desiree Ewing         | Los Angeles         | 90046 | 1326 N Vista St, Los Angeles CA 90046 | 8057910913 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7/24/2026 15:34 | taliahargrove@gmail.com   | Talia Hargrove        | Palms LA            | 90034 | 3003 jasmine ave unit 1, LA 90034     |            | NO DATA CENTERS IN LA                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

**Please Ban Data Centers in LA County**

| Timestamp       | Email Address              | Name              | Community/City               | Zip   | Street Address                        | Cell phone   | Comment                                                                                                                                                                                                                                   |
|-----------------|----------------------------|-------------------|------------------------------|-------|---------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7/24/2026 15:38 | theabella01@gmail.com      | Thea Rheume       | Los Angeles                  | 90034 |                                       |              |                                                                                                                                                                                                                                           |
| 7/24/2026 15:59 | amandajag90@yahoo.com      | Amanda Jagodowicz | Mar Vista, Los Angeles       | 90066 |                                       |              | No data centers ! No one wants these!                                                                                                                                                                                                     |
| 7/24/2026 16:20 | fluency-oafs-05@icloud.com | Marlana Coe       | Los Angeles                  | 90066 |                                       |              |                                                                                                                                                                                                                                           |
| 7/24/2026 16:29 | jadakd@gmail.com           | Jada Konop D      | Los Angeles                  | 90034 |                                       |              |                                                                                                                                                                                                                                           |
| 7/24/2026 16:32 | sandylevin2000@yahoo.com   | Sandy Levin       | Los Angeles                  | 90034 |                                       |              | environmental costs can be assessed. We cannot afford to use all of our precious water on these things. And, we cannot allow the tax payers to foot the bill.                                                                             |
| 7/24/2026 16:43 | ritjain314@gmail.com       | Ritika Jain       | Los Angeles                  | 90034 |                                       |              |                                                                                                                                                                                                                                           |
| 7/24/2026 18:19 | pdavmail@gmail.com         | Patrick Tully     | Los Angeles                  | 90034 | 10779 Woodbine Street                 | 323-819-0747 | Companies will learn how to make existing data centers work in just power efficiency. We have too much noise as it is. And this would hurt me as I'm hard of hearing. Please don't build any data centers in LA County please. Thank you! |
| 7/24/2026 19:21 | pnarayan92@gmail.com       | Punya Narayan     | Palms                        | 90034 |                                       |              |                                                                                                                                                                                                                                           |
| 7/24/2026 19:22 | alysonmke@gmail.com        | Alyson Carpenter  | Palms                        | 90034 |                                       |              | Our water, air and land are far too precious and important to our livelihoods in Los Angeles to build data centers that will steal our resources and health.                                                                              |
| 7/24/2026 20:14 | nia.farrell@gmail.com      | Nia Farrell       | Los Angeles                  | 90034 |                                       |              |                                                                                                                                                                                                                                           |
| 7/24/2026 20:39 | vivientoumey@gmail.com     | Vivien Toumey     | Los Angeles                  | 90034 |                                       |              | NO to data centers!                                                                                                                                                                                                                       |
| 7/24/2026 20:51 | har1984@mac.com            | Heather Richards  | Los Angeles                  | 90034 | 3754 motor avenue                     | 3106147974   | Absolutely no data centers in Los Angeles                                                                                                                                                                                                 |
| 7/24/2026 22:07 | theresa.marasco@gmail.com  | Theresa Marasco   | Santa Monica                 | 90404 | P.I. Box 1035, Santa Monica, CA 90406 | 720-226-4051 | NO DATA CENTERS!                                                                                                                                                                                                                          |
| 7/24/2026 23:31 | minnar.xie@gmail.com       | Minnar Xie        | Lincoln Heights, Los Angeles | 90031 |                                       |              | Please do not allow these data centers to be built in LA. The pollution and energy consumption is not worth it.                                                                                                                           |
| 7/25/2026 1:08  | tiffanycbailey@gmail.com   | Tiffany Bailey    | Palms                        | 90034 |                                       | 9096455222   |                                                                                                                                                                                                                                           |

**Please Ban Data Centers in LA County**

| Timestamp       | Email Address                  | Name                      | Community/City     | Zip   | Street Address               | Cell phone   | Comment                                                                                                                                                                                                |
|-----------------|--------------------------------|---------------------------|--------------------|-------|------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7/25/2026 8:06  | cait1031@gmail.com             | Cathleen Wallace          | Palms              | 90034 | 3533 Keystone Ave 3          | 310-924-1844 | No AI data centers please!                                                                                                                                                                             |
| 7/25/2026 14:41 | kate.staben@gmail.com          | Kate Staben               | Santa Monica       | 90401 | 1120 Arizona Ave             | 424 212 2891 | DATA centers cause harm to citizens and the environment                                                                                                                                                |
| 7/25/2026 15:44 | rbieber@gmail.com              | Rachel Bieber             | Los Angeles        | 90034 |                              |              | We do not need data centers. We need human centered data infrastructure that serves the people, not corporations.                                                                                      |
| 7/25/2026 16:04 | soumya.kalluri1@gmail.com      | Soumya Kalluri            | Palms, Los Angeles | 90034 |                              |              | I do not want data centers to poison our air and water, and strongly urge the LA board of supervisors to ban data centers from being built in our community.                                           |
| 7/25/2026 17:32 | lu.connie10@gmail.com          | Connie Lu                 | Palms              | 90034 |                              |              |                                                                                                                                                                                                        |
| 7/26/2026 8:39  | gabrielle.ann.garcia@gmail.com | Gabrielle Garcia-Williams | Culver City        | 90330 | 4929 Indian Wood Rd #368     | 3109165498   |                                                                                                                                                                                                        |
| 7/27/2026 16:23 | charlesallenmiller@gmail.com   | Charles Miller            | Los Angeles        | 90034 | 3670 Westwood Blvd., Suite D |              |                                                                                                                                                                                                        |
| 7/28/2026 18:05 | cnavarrette121790@gmail.com    | Carlos T. Navarrette      | Los Angeles        | 90063 | 1329 Cordon Dr               | 3233260040   | Ban data centers in the state of California. Full Stop!                                                                                                                                                |
| 7/28/2026 18:17 | w88becerra@gmail.com           | William Becerra           | Montebello         | 90640 |                              |              |                                                                                                                                                                                                        |
| 7/28/2026 18:47 | johnnypost012@gmail.com        | Johnny Huynh              | Alhambra           | 91801 |                              |              |                                                                                                                                                                                                        |
| 7/28/2026 19:30 | megangorman3@gmail.com         | Megan Gorman              | Silver Lake        | 90039 |                              |              |                                                                                                                                                                                                        |
| 7/28/2026 19:54 | katesinger4@gmail.com          | Katie Singer              | Glendale           | 91206 | 1223 North Verdugo road, A   | 9736502459   | Don't buy into the inevitability of these data centers! Please take a stand against these destructive ventures.                                                                                        |
| 7/28/2026 20:32 | mcroom@hmc.edu                 | Maria Croom               | Claremont          | 91711 | 666 Montgomery Cir, apt. C   | 9099421743   |                                                                                                                                                                                                        |
| 7/29/2026 0:26  | crjousma@gmail.com             | Colleen Jousma            | Montebello         | 90640 |                              |              | Low income communities are the ones who are impacted the most by these sites. We absolutely cannot have data centers at all in southern California. We barely have any water as is. Do not allow this. |

Please Ban Data Centers in LA County

| Timestamp       | Email Address               | Name                     | Community/City  | Zip   | Street Address       | Cell phone | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------|-----------------------------|--------------------------|-----------------|-------|----------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7/29/2026 1:39  | dannyangeleno@gmail.com     | Daniel Angel             | South Pasadena  | 91030 | 2057 Meridian Avenue | 8313259135 | People over profits. Environment over tech oligarchs. No mass surveillance warehouses in our county. Do the right thing, supervisors, your community is counting on you!                                                                                                                                                                                                                                                                                                                                                                                           |
| 7/29/2026 5:54  | mengcao2004@yahoo.com       | Karina Cao               | Rowland Heights | 91748 |                      | 5102244189 | Los Angeles County is already home to many major sources of industrial pollution. We should not add more large industrial facilities without carefully evaluating their cumulative impacts. As one of the nation's most densely populated and expensive places to live, Los Angeles should prioritize projects that improve residents' quality of life—not those that may increase electricity demand, place additional pressure on the power grid, contribute to local air pollution through associated infrastructure, or make living here even less affordable. |
| 7/29/2026 7:03  | bmteducator@gmail.com       | Brian Calderón Tabatabai | West Covina     | 91790 | 1333 S Meeker Ave    | 3104970419 | Data Centers are the next industry that history will back on and wonder why elected leaders allowed them, especially in communities of color. They will be the next Exides. Ban Data Centers in LA County.                                                                                                                                                                                                                                                                                                                                                         |
| 7/29/2026 12:10 | callejo98@gmail.com         | Carlos Callejo III       | Pomona          | 91768 |                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7/29/2026 17:02 | manuljoseferreyra@gmail.com | Zé Ferreyra              | La Verne        | 91750 | 715 Juanita Ave      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7/29/2026 17:12 | josiah@josiahsalas.com      | Josiah Salas             | Los Angeles     | 90065 | 1918 Wollam St       | 74758824/7 | These data centers pollute our beautiful city and sap our water supplies in a time of unprecedented water shortages emerging. The people of Los Angeles deserve a clean climate to live in and this space should be utilized for a project that benefits the people of LA like affordable housing.                                                                                                                                                                                                                                                                 |
| 7/29/2026 17:22 | eliasperales416@gmail.com   | Elias Perales            | Montebello      | 90640 | 2636 W Lincoln Ave   | 3238230688 | No more data centers!                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 7/29/2026 17:49 | c.madrigal19@yahoo.com      | Cynthia Madrigal         | Long Beach      | 90810 |                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7/29/2026 17:59 | zachch1902@gmail.com        | Zachary Cronin-Hurley    | Los Angeles     | 90028 |                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7/29/2026 18:01 | Elizabethfrohlich@gmail.com | Elizabeth Frohlich       | Los Angeles     | 91601 |                      |            | Data centers are destroying the environment. we already have a drought problem and overheating. The Pacific Ocean is the hottest its ever been. Thibk about the future of the earth not the lining the pockets of Capatilism                                                                                                                                                                                                                                                                                                                                       |

Please Ban Data Centers in LA County

| Timestamp       | Email Address               | Name                | Community/City            | Zip   | Street Address           | Cell phone   | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|-----------------------------|---------------------|---------------------------|-------|--------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7/29/2026 18:04 | grios0538@gmail.com         | Gerardo Rios        | Compton, CA               | 90220 | 428 W POPLAR ST          | 2132697568   | Don't sell out our communities to Big Data and Tech companies. They will promise lots of jobs and benefits but all they will do is drive up energy costs for the people living in LA county and increase our water usage. We already ask residents to conserve energy and water due to the severe droughts we face. It would be extremely hypocritical to allow these data centers to consume more water and energy for supposed benefits that will never reach out communities. |
| 7/29/2026 18:10 | a2004alvarez@gmail.com      | Angel Alvarez       | Compton                   | 90220 |                          |              | We're already struggling as it is. This does nothing to benefit the everyday people on LA county. Cost of living is bad enough we dont need higher electricity costs soaring now                                                                                                                                                                                                                                                                                                 |
| 7/29/2026 18:27 | victorianaseiro@gmail.com   | Victoria Naseiro    | Glendora CA               | 91740 | 639 scott pl apt 4       | 626\$7128195 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 7/29/2026 18:30 | cartermoon719@gmail.com     | Carter Moon         | Los Angeles               | 90025 |                          |              | Data centers will do nothing for LA's economy while damaging the communities forced to live near them irreparably.                                                                                                                                                                                                                                                                                                                                                               |
| 7/29/2026 18:33 | cyurrita7@gmail.com         | Carlos Yurrita      | Glendora                  | 91740 | 639 Scott Pl unit 4      | 6266348484   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 7/29/2026 18:47 | joepeep@gmail.com           | Danielle            | Leimert Park /Los Angeles | 90008 | 3894 Arlington Ave       |              | I'm moving out of LA if any days centers are built or manage in our city. Please prevent this from happening.                                                                                                                                                                                                                                                                                                                                                                    |
| 7/29/2026 18:54 | jacob.e.n.witt@gmail.com    | Jacob Witt          | Los Angeles, California   | 90049 | 13750 Bayliss Road       | 323 684 4900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 7/29/2026 19:41 | mzblancaamaya@yahoo.com     | Blanca Amaya        | Los angeles               | 90042 | 5115 Monte vista street  | 8188447035   | Date centers hurt everyone                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7/29/2026 20:16 | why.vasquez13@gmail.com     | yvette "ev" vasquez | alhambra                  | 91803 | 2003 s                   | 5628891909   | please put the environment and our communities before corpo profits. our planet and having clean water and bees being able to pollinate is worth more than anything money can buy.                                                                                                                                                                                                                                                                                               |
| 7/29/2026 20:20 | shelleyl.stephens@gmail.com | Shelley Stephens    | South Pasadena            | 91030 | 845 Lyndon St.           | 3234226355   | No data centers!                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7/29/2026 20:28 | laurenangelfield@gmail.com  | Lauren Angel-Field  | South Pasadena            | 91030 |                          |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 7/29/2026 20:43 | gamer073@yahoo.com          | Edwin Barajas       | Downey                    | 90240 | 9918 Richeon Ave         | 562-519-5332 | Please don't allow data centers here                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7/29/2026 21:24 | evanedmiston122@gmail.com   | Evan Edmiston       | North Hollywood           | 91601 | 10933 Huston St APT #202 | 8182991294   | Data Centers are immoral to society.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7/29/2026 21:44 | joeyangelfield@gmail.com    | Joseph Angel-Field  | San Gabriel               | 91776 | 812 Santa Fe Ave.        |              | We need to put our heads together to find better ways to earn money and not ruin the earth.                                                                                                                                                                                                                                                                                                                                                                                      |
| 7/30/2026 0:25  | caidenreed@gmail.com        | Caiden Reed         | Mid-City LA               | 90035 |                          |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |



## **RESOLUTION OPPOSING AI DATA CENTER DEVELOPMENT AND CALLING FOR AN IMMEDIATE MORATORIUM IN THE CITY OF INDUSTRY**

Passed and adopted this 11<sup>th</sup> day of May, 2026, by the membership of the Rowland Heights Community Coordinating Council.

**NOW, THEREFORE, BE IT RESOLVED**, that the Rowland Heights Community Coordinating Council formally opposes the approval, construction, or expansion of AI data centers in the City of Industry and surrounding areas;

**BE IT FURTHER RESOLVED**, that the Council demands the immediate adoption of a moratorium on all pending and future AI data center applications, approvals, and permits until:

- A comprehensive, program-level Environmental Impact Report (EIR) is completed;
- Full cumulative impacts on water, energy, air quality, and public health are disclosed;
- Binding and enforceable mitigation measures are adopted;
- And meaningful community engagement is conducted with affected residents;

**BE IT FURTHER RESOLVED**, that failure to comply with CEQA and other applicable laws will compel the community and its representatives to pursue all available legal remedies, including administrative appeals and litigation, to ensure accountability and environmental protection;

**BE IT FURTHER RESOLVED**, that the Council calls upon decision-makers to prioritize sustainable development, conservation of scarce water resources, and the protection of residential communities over industrial-scale expansion driven by private interests;

**BE IT FURTHER RESOLVED**, that the Rowland Heights Community Coordinating Council urges the following agencies, organizations, and municipalities to adopt similar positions and join in opposition:

- The Los Angeles County Board of Supervisors
- The Walnut Valley Water District Board of Directors
- The Rowland Water District Board of Directors
- Three Valleys Municipal Water District
- The Hacienda Heights Improvement Association
- The City of La Puente
- The City of West Covina
- The City of Diamond Bar
- The City of Covina
- The City of Walnut
- The City of El Monte



August 5, 2026

Attn: Los Angeles County Department of Regional Planning, County Fire Marshal, ISD –  
Energy & Environmental Services  
Kenneth Hahn Hall of Administration  
500 West Temple Street  
Los Angeles, CA 90012

**Re: Feedback on the Data Center Study Motion "Addressing the Health and Environmental Impacts of Data Centers" (Agenda No. 10, April 14, 2026)**

To Whom It May Concern:

On behalf of the International Brotherhood of Electrical Workers (IBEW) Local 11 and the Los Angeles Chapter of the National Electrical Contractors Association (NECA), thank you for the opportunity to provide comments regarding the Board's motion directing County departments to study the health, environmental, and economic impacts of data centers.

Together, our organizations represent the highly skilled electrical workforce and contractors that design, install, test, commission, operate, maintain, and modernize the electrical infrastructure serving Los Angeles County's businesses, hospitals, airports, ports, manufacturing facilities, renewable energy projects, battery energy storage systems, and other critical infrastructure.

As the organizations responsible for building and maintaining much of the electrical infrastructure that powers Los Angeles County, we offer these comments as both a labor stakeholder and a technical resource committed to ensuring that data center development proceeds safely, responsibly, and in a manner that benefits local communities, protects public safety, and strengthens the regional economy.

IBEW Local 11 and NECA support the responsible development of data centers in Los Angeles County. Cloud computing, healthcare, finance, research, advanced manufacturing, public services, and national security increasingly depend upon this infrastructure. At the same time, we recognize that residents have raised legitimate

questions regarding electrical demand, utility costs, water consumption, noise, fire safety, and community impacts.

These concerns deserve thoughtful consideration. They can and should be addressed through objective, measurable, and enforceable performance standards that mitigate potential impacts while providing developers and communities with clear expectations. We respectfully encourage the County to focus on establishing these performance standards and operational guardrails rather than adopting arbitrary restrictions that are not directly tied to a project's actual impacts. Regulations should be proportionate, protect surrounding communities, and allow responsible projects that meet the County's standards to move forward.

Because the County's recommendations are likely to influence future policies adopted throughout Los Angeles County and beyond, the resulting framework must be technically sound, performance-based, and adaptable to future technological advances.

We respectfully submit the following recommendations.

## **Policy Recommendations**

### **1. Require Data Centers to Pay Their Fair Share of Electrical Infrastructure**

Large electrical loads should be responsible for funding the transmission, distribution, substation, and other electrical infrastructure improvements necessary to reliably serve their facilities, unless otherwise approved by the appropriate regulatory authority. This approach protects existing residential and commercial ratepayers by ensuring that the costs associated with serving new, high-demand customers are not shifted onto existing utility customers. Data center development should not result in increased electricity rates or reduced system reliability for households, small businesses, or other existing customers. Instead, the infrastructure necessary to support economic growth should be financed by the customers creating the demand.

### **2. Establish Performance-Based Environmental Standards**

Rather than prescribing specific technologies, the County should establish measurable environmental performance standards addressing greenhouse gas emissions, air quality, and other environmental impacts. Developers should retain flexibility to determine the most effective means of achieving those outcomes. Performance-based standards encourage innovation while maintaining accountability.

### **3. Encourage Low-Water Cooling Technologies**

The County should encourage cooling system designs that minimize potable water consumption through low-water or closed-loop cooling technologies. Performance standards should focus on measurable reductions in water use rather than mandating any single cooling technology, allowing future innovations to be incorporated while protecting local water resources.

#### **4. Require Noise Mitigation and Ongoing Compliance**

The County should establish objective, enforceable operational noise standards that protect surrounding communities while recognizing that data centers are an industrial land use. Project approvals should include measurable property-line noise limits, appropriate acoustic design, reasonable limitations on routine backup generator testing during sensitive hours, and mechanisms for ongoing monitoring and enforcement. Noise requirements should be performance-based and consistent with standards applied to comparable industrial facilities rather than unique requirements applicable only to data centers.

#### **5. Require Electrical Operations and Maintenance**

To address the Board's concerns regarding fire safety, electrical reliability, public safety, and the long-term resilience of critical infrastructure, Los Angeles County should require ongoing inspection, testing, predictive maintenance, preventive maintenance, and recommissioning of customer-owned electrical infrastructure in accordance with NFPA 70B and applicable manufacturer recommendations.

We recommend that the County require:

- an Electrical Maintenance Program (EMP) for customer-owned electrical infrastructure;
- periodic inspection, testing, and preventive maintenance of substations, transformers, switchgear, switchboards, medium-voltage equipment, protective relays, generators, UPS systems, stationary battery systems, and associated electrical distribution equipment;
- predictive maintenance techniques, including infrared thermography, transformer oil analysis, electrical testing, and other condition-monitoring methods appropriate to the equipment;
- updated short-circuit, protective device coordination, and arc-flash studies following significant electrical system modifications, capacity expansions, or major equipment replacements, and periodically thereafter consistent with NFPA 70B;
- acceptance testing and recommissioning of newly installed, modified, expanded, or repaired critical electrical infrastructure before being placed into service;
- documentation of inspections, testing, maintenance activities, engineering studies, and corrective actions, together with annual certification to the County that the Electrical Maintenance Program has been implemented; and

- inspection, testing, maintenance, acceptance testing, and recommissioning of critical electrical infrastructure to be performed by licensed C-10 electrical contractors employing a Skilled and Trained Workforce, as defined in California Public Contract Code Sections 2600-2603.

## **6. Encourage Community Benefits and Local Accountability**

The County should encourage developers to prepare Community Benefits Plans identifying measurable commitments related to local hiring, apprenticeship opportunities, workforce development, environmental performance, and ongoing community engagement. These plans should serve as transparent accountability tools throughout the life of the project.

## **7. Require High-Road Workforce Standards**

Because modern data centers contain some of the most sophisticated electrical infrastructure constructed today, County approvals should require payment of prevailing wages, utilization of state-registered apprentices, and a Skilled and Trained Workforce, as defined in California Public Contract Code Sections 2600-2603, for the construction, acceptance testing, commissioning, recommissioning, operation, and maintenance of critical electrical infrastructure. These standards improve workmanship, electrical reliability, worker and public safety, long-term operational resilience, and support local careers and state-approved apprenticeship programs.

## **Conclusion**

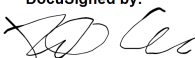
The County's study presents an important opportunity to establish a thoughtful and durable framework for responsible data center development.

We respectfully encourage the County to adopt objective, measurable, and performance-based standards that address health, environmental, electrical reliability, public safety, and community impacts while avoiding arbitrary restrictions that are not directly tied to a project's demonstrated impacts. A performance-based framework can protect residents, environmental resources, utility customers, and neighboring communities while providing the regulatory certainty necessary to attract responsible investment, high-quality construction, and long-term economic benefits.

IBEW Local 11 and the Los Angeles Chapter of NECA stand ready to serve as technical resources as the County develops its recommendations. We welcome the opportunity to continue participating as stakeholders and to provide additional expertise regarding electrical infrastructure, workforce development, system reliability, construction, commissioning, operations, and maintenance.

Thank you for your consideration.

Sincerely,

DocuSigned by:  


**Robert Corona**

Business Manager & Financial Secretary  
IBEW Local 11

Signed by:  
  
458701CB8EBA1A2...

**Eric Cartier**

Executive Director  
NECA Los Angeles Chapter

August 6<sup>th</sup>, 2026

Attn: LA County Planning, County Fire Marshal  
Kenneth Hahn Hall of Administration  
500 West Temple Street  
Los Angeles, CA 90012

**Re: Feedback on the Data Center Study Motion “Addressing the Health and Environmental Impacts of Data Centers” (Agenda No. 10, April 14, 2026)**

To Whom It May Concern,

The National Energy Management Institute (NEMI) appreciates the opportunity to provide feedback on the Board’s motion directing County departments to study the health, environmental, and economic impacts of data centers. NEMI is approved by the California Energy Commission as a Mechanical Acceptance Test Technician Certification Provider (ATTCP) under Title 24, Part 1, Section 10-103.2, and our affiliated certification body, the Testing, Adjusting and Balancing Bureau (TABB), certifies Testing, Adjusting, and Balancing (TAB) technicians across the state, including in Los Angeles County. TABB’s certification scope is also expanding to include fire and smoke damper testing, reflecting the close relationship between the mechanical systems addressed in Part I below and the fire and life safety systems addressed in Part II. Because this motion is directed in part to the County Fire Marshal, we have organized our feedback in two parts: mechanical system performance, which governs the water and energy outcomes the Board’s motion is most concerned with, and fire and life safety systems, which are installed, tested, and maintained by much of that same certified technician workforce.

Both parts rest on the same underlying point: a permit application’s projections, whether for water savings, energy efficiency, or fire and smoke containment, are only as good as the field verification behind them. A Lawrence Berkeley National Laboratory analysis of commercial building commissioning found median whole-building energy savings of 13 percent in newly constructed buildings and 16 percent in existing buildings, most of it recovered simply by verifying that installed systems actually operated as designed<sup>1</sup>. The same principle applies to passive and active fire protection: a fire damper or an HVAC shutdown sequence that was never tested provides none of the protection its design assumed. California already has field verification requirements addressing each of the topics below, and we believe the County’s findings should recommend consistent enforcement of them for data centers specifically.

**Policy Recommendations**

**I. Mechanical System Performance and Verification (Water and Energy)**

**1. Require Duct Leakage Testing Consistent with 2025 California Mechanical Code Section 603.9.2**

Data center air distribution systems are subject to mandatory duct leakage testing under 2025 CMC Section 603.9.2, performed per the SMACNA Air Duct Leakage Test Manual. Leaky ductwork wastes fan energy and undermines the very efficiency gains a facility’s cooling design was

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<sup>1</sup> See E. Mills, 2009, Building Commissioning: A Golden Opportunity for Reducing Energy Costs and Greenhouse Gas Emissions, Lawrence Berkeley National Laboratory, prepared for the U.S. Department of Energy (analysis of newly constructed and existing commercial buildings found median energy savings of 13 percent and 16 percent, respectively, from commissioning).

permitted to achieve. We recommend the County confirm that this testing requirement is being enforced for data center construction and that test results are documented and available for review.

## **2. Require Documented Acceptance Testing (ATT) of Mechanical Systems Under Title 24, Part 6, Section 120.5**

Title 24, Part 6, Section 120.5 already requires field acceptance testing of key mechanical systems, including air economizers and cooling plant controls, the same equipment central to the low-water, dry-cooling and hybrid designs the County's motion encourages, for both new construction and covered renovations of existing facilities. Acceptance testing must be performed and documented by a certified Acceptance Test Technician (ATT) before a project can receive final sign-off. This is a functional verification step, not a paper commitment: it confirms the economizer and control sequences installed in the field actually operate the way the permit application said they would. We recommend the County require that completed acceptance test documentation for data center mechanical systems be submitted and retained as part of the permit record. We further recommend the County adopt a requirement that all acceptance test documentation be maintained onsite, and that upon a change in tenant occupancy or a significant alteration affecting building systems, the applicable acceptance tests be updated and repeated as necessary to verify continued compliance.

## **3. Require Testing, Adjusting, and Balancing (TAB) at Commissioning and on a Recurring Basis**

Consistent with 2025 CMC Section 403.10 and ANSI/ASHRAE Standard 62.1, Section 8, we recommend the County require TAB of mechanical systems both at initial commissioning and on a recurring cycle thereafter, performed by technicians certified through the Testing, Adjusting and Balancing Bureau (TABB), the Associated Air Balance Council (AABC), or the National Environmental Balancing Bureau (NEBB). Mechanical systems drift out of balance over time as filters load, dampers stick, and control setpoints are adjusted in the field. Recurring TAB is what catches that drift before it shows up as excess energy and water use. We recommend the County require that these recurring TAB assessments, as distinct from the initial commissioning TAB, be documented using NEMI's standard Ventilation Verification and Energy Optimization Assessment forms based on NEMI templates<sup>2</sup>, adapted as needed to fit the County's own reporting requirements. These forms document measured airflow and static pressure against design intent, readings that can help engineers identify excess energy use, so the recurring assessment supports catching problems affecting both ventilation and energy performance.

## **4. Make Verification Documentation a Condition of Permit Sign-Off and Ongoing Compliance**

Taken together, duct leakage testing, acceptance testing, and TAB form a continuous chain of verification that runs from construction through occupancy through ongoing operation, and the same logic applies to the fire and life safety systems addressed in Part II below. We recommend the County require that documentation from each of these steps, not just design-phase projections, be submitted as a condition of final permit sign-off, and that recurring TAB, ATT re-verification, and fire and life safety testing documentation be required on an ongoing basis for facilities already in operation. What these initial acceptance tests, ongoing maintenance, and ventilation verification

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<sup>2</sup> National Energy Management Institute, Ventilation Verification resources, <https://www.nemionline.org/ventilation-verification/>.

assessments do is provide an enforceable, evidence-based way to confirm that data center HVAC systems are operating as designed and continue to meet the minimum code requirements.

## **II. Fire and Life Safety**

### **5. Require Periodic Testing of Fire and Smoke Dampers at Data Center Air Barrier Penetrations**

Under California Building Code Section 717, any duct or air-transfer opening that penetrates a fire-rated wall, floor, or shaft enclosure, including those separating a data center's IT equipment spaces from adjacent areas, must be protected with a fire damper, smoke damper, or combination fire/smoke damper. NFPA 80 and NFPA 105 require these dampers to be tested and inspected one year after installation, and every four years thereafter<sup>3</sup>. In practice, damper actuators and fusible links fail quietly, and a damper that never closes provides none of the protection its rated wall was designed around. Consistent with California's contractor licensing framework, we recommend this testing be performed by technicians holding a C-16 fire protection contractor's license or a valid State Fire Marshal certification, as applicable, the same standard of accountability recommended above for TAB and acceptance testing. We recommend the County confirm that data center operators are meeting these periodic testing intervals and retaining documentation.

### **6. Require Testing and Airflow Verification of Smoke Control and Smoke Purge Systems**

Where a data center is required to have an engineered smoke control or smoke purge system, whether under California Fire Code Section 909 (Smoke Control Systems) or Section 910 (Smoke and Heat Removal), California already requires integrated testing consistent with NFPA 4 at commissioning and at intervals not exceeding ten years, with system design and tenability criteria governed by NFPA 92<sup>4</sup>. A ten-year maximum interval is a long time for a life-safety system to go unverified, and confirming it is not much additional work for the same technicians already performing the TAB and acceptance testing described above. We recommend the County require these systems be tested, including airflow and flow verification, on a cycle more frequent than the ten-year code minimum, performed by technicians holding a C-16 fire protection contractor's license or a valid State Fire Marshal certification, as applicable.

## **Conclusion**

NEMI stands ready to serve as a technical resource to the County as it prepares its findings under the Board's motion, on both the mechanical performance and fire and life safety topics addressed above, including with respect to the specific code sections and testing standards referenced. We welcome the opportunity to discuss these recommendations further with County Planning and the Fire Marshal's office.

Thank you for your consideration.

### **For more information or questions, contact:**

**Steven Winstead**

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<sup>3</sup> NFPA 80, Standard for Fire Doors and Other Opening Protectives, Section 19.4.1; NFPA 105, Standard for Smoke Door Assemblies and Other Opening Protectives, Section 6.5.2.

<sup>4</sup> California Fire Code (Title 24, Part 9), Sections 909 (Smoke Control Systems) and 910 (Smoke and Heat Removal); NFPA 4, Standard for Integrated Fire Protection and Life Safety System Testing; NFPA 92, Standard for Smoke Control Systems.

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Representative, Western Region  
National Energy Management Institute  
3180 Fairview Park Drive, Suite 400  
Falls Church, VA 22042  
[swinstead@nemionline.org](mailto:swinstead@nemionline.org)  
916.502.2394

## **ATTACHMENT 4**

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