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TEXAS WATER FOUNDATION

GALLONS + GIGAWATTS:

Texas Data Center Water Use and Policy Considerations

Significant attention on data centers is occurring at both state and federal levels, in part due to the rapid increase in the number of centers and more recently due to their direct and indirect water needs. In Texas, data centers are now the subject of interim charges and hearings in five House and Senate committees.[1] Various Texas state agencies are also working to locate and quantify the impact on Texas water resources. The Environmental Protection Agency is currently preparing voluntary wastewater discharge standards for data centers. In states such as Minnesota and Utah, new laws have already been passed to require pre-permitting information and water conservation considerations for new data centers. **This brief describes the current state of data center growth in Texas, water's role in these facilities and development, as well as key challenges and policy considerations this growth presents.**

KEY TAKEAWAYS

- Data center growth is occurring in water-stressed areas because water demands are secondary to other cost drivers such as energy, land, and proximity to broadband lines.
- Current cooling technologies create a tradeoff between a data center's direct water use and its indirect water use in energy consumption. Understanding both is needed to reduce, not shift, water impacts.
- Data on data center water consumption is not currently provided consistently or comprehensively among governmental entities.
- Data center growth is occurring at a pace and scale that traditional infrastructure planning and siting processes have difficulty matching.

DATA CENTERS IN TEXAS

A data center is a central facility that concentrates servers and supporting equipment to process, store, and generate data for global customers. Data centers' size and reach have grown to meet global demand from connected devices, artificial intelligence (AI), and cloud-based services that rely on them. While Virginia and California have historically been popular locations for data centers, **Texas has become an attractive location due to affordable land, its regulatory environment, and an abundant mix of sources in a competitive energy market.**[2]

According to recent market research, **Texas has 608 operating data centers and 121 under construction as of April 1, 2026.**[3] Forty-two percent of operating data centers are currently in the DFW area, and an increasing number are being considered in rural areas. Historically, data centers were sized around

100K square feet, though hyperscale data centers used increasingly for AI-generated content can be as large as 1-2 million square feet and can use as much as 5 million gallons of water per day (GPD).[4] The Texas Comptroller currently lists 67 data centers that are over 250K square feet.[5] Data centers over 100K square feet are currently eligible for 10-20 year state sales tax exemptions, including for cooling systems.[6] The Senate Finance Committee is studying this tax exemption this interim.[7]

CURRENT CHALLENGES

Water is on the list, not the top priority: Water availability tends to fall behind other factors, such as land cost, proximity to fiber routes, and energy capacity as a priority factor in deciding where to site data centers.[8]

Surging Water Demand: Statewide data center water consumption is estimated to increase from 25 billion gallons in 2025 (0.4% of state water usage annually) to 29-161 billion gallons in 2030, a 16-540% increase (0.5%-2.7% statewide) in 5 years.[9] This small overall percentage masks two key developments:

- Data centers can have a larger impact on local water supplies depending on their volume and the location's water stress; and
- This is a substantial increase in demand on water over a short period of time.

Data on Data Centers is Inconsistent: Legislation or laws requiring data centers to disclose their water usage is starting to emerge in other states.[10] Current data collection efforts and requirements in Texas include:

- **Texas Water Development Board (TWDB)** recently surveyed for water use in data centers. Penalties for data centers not responding are limited unless the business has a surface water permit from Texas Commission on Environmental Quality.[11] In 2023, 77% of all entities that were sent a TWDB water use survey responded.[12]
- **The Public Utilities Commission of Texas (PUC)** is surveying data centers on their water usage in Spring 2026 and sharing this information with TWDB and TCEQ.[13]
- **Texas Commission on Environmental Quality (TCEQ)** requires annual water usage and discharge information from entities with surface water permits. If a data center is discharging water on its own and not through another provider, it will also have to give required information to TCEQ to obtain a permit.
- Groundwater Conservation Districts collect groundwater pumping information from permitted users, which can include data centers.
- Public and private water systems bill data center customers for water.

Onsite Water Needs: Data processing generates significant heat and humidity that must be controlled to prevent damage to equipment and operational inefficiency. Generative AI models can use 10x-100x more power than traditional models, which means even more heat.[14] Water is a key component to cooling data center equipment, as well as to generating the power they need to operate continuously. Up to 80% of water used at a data center can be lost to evaporation, though more energy-intensive technologies (such as closed loop or immersive cooling) can reduce onsite water use.[15]

- Equipment cooling: the equipment itself can be cooled by either air or liquid means, though in practice liquid cooling (using a blend of water and refrigerant) is the preferred medium.[16]
- Facility Cooling and Climate Control: Texas' hot climate results in a need for either air-cooled or water-cooled chillers for facilities. Air-cooled chillers do not lose water from evaporation, but require more energy to operate than water-cooled chillers. A water-cooled chiller does require replacement water due to evaporation, but uses less energy
- Water Quality: Naturally filtered or already treated potable water is preferred because it is less likely to damage equipment. Desired characteristics include low scaling corrosion and hardness, moderate alkalinity, and slightly elevated pH.[17] EPA is preparing voluntary wastewater discharge standards for data centers in its upcoming Water Reuse Action Plan revision.

POLICY CONSIDERATIONS

Data Needs: Data on data centers is difficult to obtain. Data centers go through permitting at local levels of government, and specifics on design or water demand can often be proprietary information or masked by non-disclosure agreements. Furthermore, the recent proliferation of data centers is not accounted for in the current state water plan. This process relies on historical data and estimates in forecasting future demands, which in turn are scattered within broad use categories, such as municipal or industrial. Utah, for example, has passed a new law requiring new large data centers to report annual water use and impacts. This law also requires a new data center to formally assert and justify proprietary information to be exempt from disclosure.

Indirect Water Consumption: Analyses on data centers often note that water consumption occurs both in the data center facility as well as in the generation of the electricity. Including this usage has value due to the direct increase in energy usage resulting from water-efficient cooling. To reduce water impacts rather than shift them from a data center to a power plant, capturing and analyzing such data could enable better decisions on addressing data center impacts. However, it adds a special analysis for this type of business. While some data centers are planning to build their own power plants onsite, electric transmission lines effectively mean data center water impacts can also be spread across multiple regions with various energy sources being used.

No [WAT]ERCOT: In contrast to the electric grid, no comparable statewide apparatus to manage large supplies and demands is in place on the water side–though water service restrictions or discontinuations can be included as responses in water systems' drought contingency plans.

Infrastructure Planning Processes and Timelines: Data center growth is occurring at a speed and scale that locally based infrastructure planning processes may have difficulty matching. Water infrastructure, especially to create or access new supplies or wastewater treatment, can take decades to plan, permit, finance, and construct. Minnesota and Utah have recently enacted laws that add pre-application and reasonable water efficiency considerations for data centers that are expected to consume more than 100 million gallons per year.[20]

Metrics: Water usage effectiveness (WUE), the ratio of water consumption to energy consumed by IT equipment over the same period, is an emerging industry metric for evaluating the efficiency of a site's water usage. However, it only captures the efficiency of water usage onsite, which may both include water ancillary to equipment cooling (ex: bathrooms) and, as noted above, excludes water involved in power generation.

For More Information: Data center growth presents both a number of opportunities as well as challenges within Texas' current water infrastructure planning and support processes. For additional information, please consult our data center references list or contact us.

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19. Section 11.1272, Texas Water Code.
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