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Data Centers and Water: Frequently Asked Questions

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Data Centers and Water: Frequently Asked Questions

SUMMARY

The expanding use of artificial intelligence and other trends in computing have contributed to increased development of data centers. Simply, a *data center* is a physical facility that houses and runs large computer systems. The increased number and size of these facilities have raised concerns about the resources needed to support data center operation, including use, consumption, and discharge of water. These concerns have garnered congressional attention. Members of Congress and their constituents may have questions regarding a data center's potential impact on the quantity and quality of local water resources.

Data centers house equipment that processes, stores, manages, and disseminates digital information, or data, in support of a variety of information technology (IT) services. Within a data center, processing units and other computing and networking devices and systems generate heat. Thermal regulation of the hardware can remove excess heat and maintain system function. Systems that provide thermal regulation manage airflow, cooling, and other air-conditioning needs. Generally, the cooling technologies used in data centers rely on either air cooling or liquid cooling. Liquid-cooled systems generally use water to transfer heat. Data centers may rely on several different types of cooling technologies, depending on facility characteristics such as size, computing load, location, local climate conditions, thermal regulation needs of computing equipment, and access and availability of water for cooling purposes.

How local water resources are affected by data center water withdrawals and consumption (*water consumption* means water withdrawn and no longer available for reuse) depends on the water conditions and supply options available locally and/or regionally, as well as other demands for water. Currently, most operators of data centers acquire water from municipal water systems, commonly referred to as *public water systems*. Other potential sources include treated wastewater (commonly referred to as *reclaimed water*) and direct withdrawals from surface water or groundwater. Congress has generally deferred to the states' primacy in intrastate water allocation. State laws and regulations largely govern access to freshwater within a state. Despite this deference to state primacy, the federal government has invested in infrastructure to assist in the development of water resources through the U.S. Army Corps of Engineers and the Bureau of Reclamation. These facilities may store water for various purposes, which could ultimately include water used for data centers. In some instances, data centers may be using water from these sources indirectly via public water systems or communities that have agreements with such federal agencies.

Data centers may generate different types of water-related discharges (i.e., effluents), including wastewater and stormwater discharges. In addition, in some cases when land is developed to construct data centers, the development may include discharges of dredged or fill material into wetlands or streams. The project proponent for data center development and the owner/operator of the data center facility may need to comply with certain federal requirements, including obtaining Clean Water Act permits or approvals, which aim to prevent or minimize water quality impacts from the data center's discharges. The pollutants that may be present in data center wastewater discharges depend upon several factors, including the source and quality of the water being used for cooling, the cooling technology being used, site-specific operations, and whether the discharges are from normal operations or from construction and commissioning phases. Currently, data centers most commonly send their wastewater effluent to publicly owned treatment works.

To address data centers and water, some Members have introduced bills in the 119th Congress. These bills are identified in a table in this report. Some of these bills include provisions to improve the available information about data center water use, to incentivize certain practices (e.g., water reuse) at data centers, or to limit or facilitate data center construction.

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Introduction

The expanding use of artificial intelligence (AI) and other trends in computing and digital consumption have contributed to increased development of data centers.[1] Simply, a *data center* is a physical facility that houses and runs large computer systems.

Data centers are not new, but their scale and incidence have changed due to various factors. The rise of the internet has led to an increased need for computing power. Paired with the expansion of computationally intensive portions of the economy (e.g., AI, cryptocurrency), these factors have driven an increase in the number and scale of these facilities. This increase has raised concerns about the resources needed to support data center operation, including water.[2]

Concerns over the water used by data centers have garnered congressional attention. Data centers' *direct* water use (i.e., water used or consumed at the data center for thermal regulation, not *indirect* use of water used for off-site power generation or further up the supply chain for manufacturing computer hardware or building materials) is estimated to make up a relatively small proportion (approximately 2%) of total U.S. water consumption.[3] Individual communities may have concerns about data centers contributing to constraints on their community's water supply. For example, the International Energy Agency estimates that a 100 megawatt (MW) U.S. data center may directly consume roughly the same amount of water per day as 2,600 households.[4] Communities where data centers are being considered or operated may have questions about how the water is sourced. Currently, municipal water systems, commonly referred to as *public water systems*, are estimated to supply 97% of the water provided to U.S. data centers, with a few self-sourcing their water supplies (i.e., using surface water or groundwater directly and not via a public water supply facility).[5]

Communities may have concerns over potential water quality impacts of discharges from data centers into nearby waterbodies or into wastewater treatment systems. The quality of water discharged from data centers may affect wastewater treatment processes or the receiving aquatic ecosystem.

Data center water use is difficult to quantify comprehensively, and understanding of its potential effects on local water resources is evolving. Some Members of Congress have shown interest in improving understanding of the potential water-related effects of data centers on communities and the environment. In the 119th Congress, some Members have introduced bills regarding water use by data centers. Many of these bills are related to gathering and publishing data on data center

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[1] Adam Zewe, "Explained: Generative AI's environmental impact," *Massachusetts Institute of Technology News*, January 17, 2025.

[2] For more information about data centers' energy consumption, see CRS Report R48646, *Data Centers and Their Energy Consumption: Frequently Asked Questions*, by Martin C. Offutt and Ling Zhu.

[3] American Water Works Association (AWWA), *Cooling the Cloud: Water Utilities in a Data Driven World*, October 28, 2025, https://www.awwa.org/wp-content/uploads/AWWA-Cooling-the-Cloud-Water-Utilities-in-a-Data-Driver-World.pdf.

[4] This estimate accounts only for direct water consumption and is averaged across the various cooling strategies. The International Energy Agency (IEA) estimates water use of data centers to include 60% indirect (at power plants) and 40% direct water use, with the sum equal to the water consumption of 6,500 households. The direct water use would thus be equivalent to the water consumption of 2,600 households. IEA, *Energy and AI*, World Energy Outlook Special Report, April 2025, p. 242, https://iea.blob.core.windows.net/assets/34eac603-ecf1-464f-b813-2ecceb8f81c2/EnergyandAI.pdf.

[5] Bluefield Research, "U.S. Water-Related Expenditures for Data Centers to Exceed $41 Billion Through 2030," press release, June 23, 2025, https://www.bluefieldresearch.com/ns/u-s-water-related-expenditures-for-data-centers-to-exceed-us4-1-billion-through-2030/.

water use, as well as other approaches to incentivize certain practices at data centers. Others would support or limit data center development.

The questions in this report pertain to direct water use by data centers; a discussion of indirect use, such as the use of water in offsite power generation, is beyond the scope of this report.

What Are Data Centers?[6]

Data centers house equipment that processes, stores, manages, and disseminates digital information, or data, for a computer network in support of a variety of information technology (IT) services and associated infrastructure. They typically include server racks used for data storage and processing. They can range in size from parts of rooms or individual rooms (sometimes referred to as "server closets") to entire buildings. These facilities generally require dedicated uninterruptible power supplies and cooling systems. Large-scale stand-alone facilities may have on-site backup power generation. Data centers may provide different services or multiple services including traditional enterprise services (such as in-house IT system infrastructure management, system security, or system administration), on-demand enterprise services (such as flexible, scalable computational, storage, networking, and security services often on a pay-as-you-go basis), high performance computing, internet facilities, and hosting facilities.

Depending upon the size and computational needs of the facility, data center servers may use different types of processing units. Many data centers use central processing units (CPUs) for general-purpose workloads. Conventional servers may have single, dual, or multiple CPUs. Other types of processors are used for specific tasks. For example, training of AI models primarily relies on graphics processor units (GPUs), which were originally designed for video rendering. In addition, many chip design firms offer custom logic chips designed for particular applications. These chips are referred to as *application-specific integrated circuits* (ASICs). Such custom chips are frequently used for cryptocurrency mining and increasingly used for AI applications. In addition to server racks, data centers also include systems to thermally regulate the hardware.

Data Center Water Use

How Do Data Centers Use Water?[7]

Data centers may directly use water for multiple purposes. Processing units and other computing and networking devices and systems within a data center generate heat. Thermal regulation of the hardware removes excess heat and maintains system function. Systems that provide thermal regulation manage airflow and air-conditioning needs. Some of these systems may use water. Depending upon local climate conditions and data center operations, some data centers may have on-site power generation, which may have separate systems for thermal regulation that also could use water.

Data centers may rely upon several different types of cooling technologies depending upon facility characteristics such as size, location, and thermal regulation needs of the computing equipment. Generally, the cooling technologies used in data centers rely on either air cooling or liquid cooling. (This report focuses on water as the liquid used in liquid cooling systems.) Air-

[6] Corrie Clark, Specialist in Energy Policy, authored this entry.

[7] Corrie Clark, Specialist in Energy Policy, authored this entry.

cooled systems use chilled air to transfer heat from the computing equipment. Liquid-cooled systems use liquids to transfer heat. Still other options exist including hybrid cooling systems, which may combine multiple cooling technologies, and two-phase systems, which can operate and transfer heat by changing between the liquid and vapor phases of the working fluid. Small- or medium-sized data centers or co-located data centers typically rely upon direct expansion systems, referred to as *computer room air conditioners* (CRACs).[8] Larger data centers may rely on other systems.

As computing demands increase for AI training and inference (*inference* is when the AI system stops training and starts "doing" or producing output), cooling needs are also increasing. Some companies have announced plans to retrofit existing data centers to operate with liquid cooling systems, which can be more efficient than air-cooled systems but may not be cost-effective for small- or medium-sized data centers. Other companies are exploring both immersion cooling, in which components make contact with a thermally conducting fluid, and two-phase cooling.[9]

Different technologies for air management and thermal regulation have different water requirements. Characteristics of a data center such as size, computing load, local climate conditions, and access and availability of water for cooling purposes can influence the type of technology or technologies selected for use. These and other factors influence the amount of water used by a particular data center. These topics are further discussed in "What Are Some Potential Options to Reduce Water Used by Data Centers?"

Overall, water use by data centers is increasing. One study estimates that in 2023, U.S. data centers directly used approximately 17 billion gallons of water, compared with 5.6 billion gallons in 2014.[10]

What Are Some Potential Options to Reduce Water Used by Data Centers?[11]

A common metric that can be used to compare the water use of different data centers is *water use effectiveness* (WUE), typically defined as the total water consumption of the data center divided by the electricity demand of the IT equipment. *Water consumption* refers to the volume of water withdrawn from a source and permanently removed from that original source due to evaporation or other irreversible processes (such as deep-well injection of wastewater). WUE generally measures direct water usage at the facility level and does not measure indirect water use, such as water consumed during the off-site generation of electricity that powers data center operations.

A WUE metric that accounts for both facility-level water consumption and indirect water use (e.g., the water consumed to generate electricity used to power the facility) may be more comprehensive. Some consider that accounting for water consumed by both on-site cooling and off-site electricity generation in a single, comprehensive WUE metric would be more appropriate

[8] Arman Shehabi et al., *2024 United States Data Center Energy Usage Report*, LBNL-2001637, December 19, 2024, p. 5, https://eta.lbl.gov/publications/2024-lbnl-data-center-energy-usage-report.

[9] Sebastian Moss, "Nvidia Hiring for Immersion Cooling Technologist to Test Fluids and Materials," *Data Center Dynamics*, July 25, 2024, https://www.datacenterdynamics.com/en/news/nvidia-hiring-for-immersion-cooling-technologist-to-test-fluids-andmaterials/.

[10] Arman Shehabi et al., *2024 United States Data Center Energy Usage Report*, LBNL-2001637, December 19, 2024, pp. 55-56, https://eta.lbl.gov/publications/2024-lbnl-data-center-energy-usage-report (hereinafter Shehabi et al., LBNL 2024 Report).

[11] Corrie Clark, Specialist in Energy Policy, authored this entry.

when considering data center water use.[12] However, a comprehensive WUE metric would add complexity to comparisons of different cooling systems in data centers if the data centers used different off-site sources of electricity (e.g., coal-fired versus natural-gas-fired versus nuclear versus solar versus wind).

Different cooling technologies can use different amounts of water for the same amount of cooling.[13] Evaporative cooling, which uses energy (or waste heat) to change the state of water from a liquid to a gas (and would increase the absolute humidity of the surrounding air), is an effective method for dissipating internal heat loads from IT devices. Data centers that use water-cooled chiller systems include cooling towers that make use of evaporative cooling. Water-cooled chiller systems typically have the highest WUE (i.e., are less efficient at using water), which is largely attributed to the substantial cooling tower water usage.

If cooling systems include *economizers*, which refer generally to heat-transfer technologies that make use of "free cooling" from surrounding resources such as ambient air or water, the WUE for a specific system can be reduced. For example, waterside economizers, which rely on water to transfer heat, can reduce the use of a mechanical chiller and reduce WUE values by eliminating or reducing heat from compressors. Another technology option to decrease WUE could include the use of airside economizers, which rely on air to transfer heat. Airside economizers can allow for the shutdown of chilled water systems during certain weather conditions, which can reduce water consumption. Further reductions in water use can be achieved through operational and management practices, such as elevating setpoint temperatures (the target temperature that a thermostat or control system aims to maintain).

Trade-offs in water consumed and power usage exist between evaporation-based cooling systems and air-cooled systems. Evaporation-based cooling systems are generally more energy efficient than air-cooled chillers or other waterless systems. While air-cooled chillers use no water, they use comparatively more energy.

Water Sources and Authorities

What Are the Potential Water Sources Available for Data Centers?[14]

Operators of data centers can acquire water from several sources. Commonly used sources include municipal drinking water systems; treated wastewater, which can be referred to as *water reuse* (for more information, see "What Is Water Reuse?"); and direct withdrawals from surface water or groundwater. As of 2025, U.S. data centers relied on municipal water systems, so-called *public water systems*, for an estimated 97% of their on-site water needs, according to one analysis.[15] (For information about self-sourced data centers, see "Are There U.S. Data Centers That Directly Source Their Water?")

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[12] Shehabi et al., LBNL 2024 Report, pp. 44-45.

[13] For more information on data center cooling technologies, see Sijun Xu et al., "Thermal Management and Energy Consumption in Air, Liquid, and Free Cooling Systems for Data Centers: A Review," *Energies*, vol. 16, no. 3 (2023), p. 1279, https://doi.org/10.3390/en16031279.

[14] Elena Humphreys, Specialist in Environmental Policy, authored this entry.

[15] Bluefield Research, "U.S. Water-Related Expenditures for Data Centers to Exceed $41 Billion Through 2030," press release, June 23, 2025, https://www.bluefieldresearch.com/ns/u-s-water-related-expenditures-for-data-centers-to-exceed-us4-1-billion-through-2030/.

Data centers require water that meets the required water quality parameters for cooling technologies to operate, and water from water systems generally suffices.[16] Regulated public water systems are required to meet federal Safe Drinking Water Act (SDWA) regulations,[17] and some SDWA regulations pertain to maintaining disinfection and controlling the corrosivity of water as it moves through the piped distribution system. As such, water from a regulated water system may be less likely to detrimentally affect the cooling capacity of a data center, compared with water that may cause corrosion, scaling of certain minerals, or growth of microbials on equipment.[18] Data centers that rely on direct withdrawals from surface water or groundwater or on reclaimed water may have to install pretreatment systems to improve water quality and thus limit potential impacts to cooling technologies.

Other factors may play a role in a data center's water source selection. The proximity of a data center to potential water sources is likely a key factor in source selection. In addition to water from public water systems, for example, data centers located in areas with adequate wastewater treatment for water reuse, as well as nonpotable pipe networks (commonly called *purple pipe)*, may be able to access such resources for cooling. Some areas with purple pipe may have competing uses and demand for reclaimed water, possibly limiting the availability of this resource for data centers. (For more information on water reuse, see "What Is Water Reuse?")

Another factor regarding water source selection may involve the length of time required for a data center to access a water supply. For direct withdrawals from groundwater or surface water bodies (self-supply), a data center operator may have to apply for and be granted a permit from the state and/or local government to withdraw the water, as well as to install infrastructure to deliver the water to the center.[19] (For more information about the state and local role, see "Why Are Local Water Authorities and the States the Main Entities Determining If Water Is Available for Data Centers?") By comparison, connecting to an existing public water system may require fewer steps and less time than developing a self-supply.

What Drives a Data Center's Water Demand?[20]

As discussed in "How Do Data Centers Use Water?," several factors drive a data center's demand for water, including the size of a facility and its specific cooling technology.[21] Among the liquid cooling technologies, open-loop water-based cooling systems require more water than closed-loop water-based cooling systems.[22] In addition, the ambient temperature of the data center's location influences the quantity of water needed for cooling. The water use patterns of data

[16] AWWA, *Cooling the Cloud: Water Utilities in a Data Driven World*, October 28, 2025, https://www.awwa.org/wp-content/uploads/AWWA-Cooling-the-Cloud-Water-Utilities-in-a-Data-Driver-World.pdf.

[17] Safe Drinking Water Act (SDWA) regulations apply to water systems that serve more than 25 individuals. SDWA regulations include standards or maximum contaminant levels to control harmful contaminants in public water supplies.

[18] AWWA, *Cooling the Cloud: Water Utilities in a Data Driven World*, October 28, 2025, https://www.awwa.org/wp-content/uploads/AWWA-Cooling-the-Cloud-Water-Utilities-in-a-Data-Driver-World.pdf.

[19] Water Environment Federation (WEF), *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*, April 16, 2026, https://water-ai-nexus.org/reports/water-and-wastewater-utilities-and-data-centers-frequently-asked-questions-faqs/ (hereinafter WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*).

[20] Elena Humphreys, Specialist in Environmental Policy, authored this entry.

[21] WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[22] For *open-loop water-based cooling systems*, heat is directly transferred to water, which then may be directed to a cooling tower to evaporate some of the water and transfer heat into the atmosphere. For *closed-loop water-based cooling systems*, indirect cooling is used where two separate fluid systems are maintained such that heat is transferred without direct fluid contact. Evaporative cooling or another type of cooling may be used for a closed-loop system.

centers that rely on evaporative cooling parallel changes in daily temperature, as well as seasonal changes. Data centers generally require more water for cooling during the hotter parts of the day and of the year.

For data centers employing liquid cooling technologies, the initial quality of the water when it arrives at a data center may play a role in the total water volume needed for cooling purposes.[23] For example, water with levels of dissolved solids below a certain concentration can be reused on-site, possibly cycling through an evaporative cooling technology multiple times. After a certain number of uses, the concentration of dissolved solids in water will increase due to evaporation. When the dissolved solids reach a specific threshold, the water can no longer be used for cooling and is discharged. (For more information about discharges, see "Water Quality Impacts from Data Center Discharges.")

Do Data Center Operators Pay to Use the Water from Public Water Systems? What Determines the Price They Pay?[24]

As discussed above, data centers obtain most of their water from public water systems. Generally, these systems charge their customers, including data center operators, a rate to support the costs to provide water service. This rate and the quantity of water used generally determine how much a customer pays for water. For data centers, these rates, as well as the volume of water in consideration, and other specifications, may be detailed in a water service agreement between a municipality and the data center operator. Such agreements may include provisions that limit the disclosure of this information.

Different water systems use different rate structures, and the water rates charged by public water systems are not generally publicly available.[25] These rate structures may have implications for communities that have added water users, such as data centers, that require a larger volume of water.

Some systems use a uniform rate, where all customers pay the same price per unit of water regardless of the type of customer. Other systems may use a flat fee, where customers pay the same price regardless of the amount of water used.[26] Tiered rate structures may be used to incentivize certain behavior. One type of tiered rate structure is an increasing block rate structure, which involves charging an increasingly higher rate for increasingly greater amounts of water use. Under this rate structure, a system would charge a higher rate for each specific portion of water used than the previous portion, so that a user is incentivized to promote water conservation. Another type of tiered rate structure is a decreasing block rate structure, which may be designed to incentivize the development of certain industries.[27] For example, under a decreasing block rate structure, a system would charge a lower rate for each specific portion of water used than the previous portion, providing a discount to customers, such as commercial customers, with high

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[23] Alliance for Water Stewardship, *Water Stewardship in Data Centres*, North Berwick, Scotland, 2025, https://a4ws.org/resource/water-stewardship-in-data-centres/.

[24] Elena Humphreys, Specialist in Environmental Policy, authored this entry.

[25] Some water rate information exists publicly. Specifically, the Environmental Finance Center at the University of North Carolina, Chapel Hill, provides water rate information for utilities that voluntarily submitted such data from a subset of states. Other states collect rate information for all or a subset of drinking water systems.

[26] AWWA/Raftelis/University of North Carolina, Chapel Hill, Environmental Finance Center, *Water and Wastewater Rate Survey*.

[27] U.S. Environmental Protection Agency (EPA), *Setting Small Drinking Water System Rates for a Sustainable Future*, April 2022, https://www.epa.gov/system/files/documents/2022-06/FINAL%20Sustainable%20Water%20Rate%20STEP%20Guide_508.pdf.

water usage.[28] In addition to tiered rate structures where rates vary by amount of water used, in some areas, commercial customers, as opposed to residents, may pay a different rate per unit of water used.[29]

Some systems' water rates may be regulated by a state public utility commission (PUC) or state public service commission (PSC). The regulatory authority of PUCs and PSCs varies by state. All states, except Georgia, Michigan, Minnesota, North Dakota, and South Dakota, regulate certain private entities that own water systems through PUCs or PSCs.[30] Some states regulate both public and private water systems. For example, Wisconsin's PSC regulates the rates of all water systems. In addition to jurisdiction over private systems, the PUCs/PSCs in Alaska, Indiana, Maine, Maryland, Mississippi, New Jersey, Pennsylvania, Rhode Island, and West Virginia have varying jurisdiction over publicly owned water systems.[31]

PUCs/PSCs may apply different requirements to the systems they regulate. For example, some PUCs/PSCs employ a key principle called *full cost recovery*, which is a pricing practice of setting rates at a level so the water system can fully recover costs. In addition to full cost recovery, PUCs/PSCs typically allow for some amount of return for investors (e.g., most commonly in the case of privately operated water systems).[32] Full cost recovery is intended to ensure that water rate revenues are used to cover the water system's costs, supporting operation and maintenance and capital costs to ensure sustainable water service.

Why Are Local Water Authorities and the States the Main Entities Determining If Water Is Available for Data Centers?[33]

Congress has generally deferred to the states' primacy in intrastate water allocation.[34] The Water Supply Act of 1958 (72 Stat. 320; 43 U.S.C. §390b) states that Congress recognizes "the primary responsibilities of the States and local interests in developing water supplies for domestic,

[28] EPA, *Setting Small Drinking Water System Rates for a Sustainable Future*, April 2022, https://www.epa.gov/system/files/documents/2022-06/FINAL%20Sustainable%20Water%20Rate%20STEP%20Guide_508.pdf.

[29] EPA, *Setting Small Drinking Water System Rates for a Sustainable Future*, April 2022, https://www.epa.gov/system/files/documents/2022-06/FINAL%20Sustainable%20Water%20Rate%20STEP%20Guide_508.pdf.

[30] Janice A. Beecher, *Potential for Economic Regulation of Michigan's Water Sector: Policy Brief for the Incoming 2019 Gubernatorial Administration*, Michigan State University Extension, East Lansing, MI, November 7, 2018, https://www.canr.msu.edu/michiganpolicyguide/uploads/files/11-21%20waterecon%20beecher%20final.pdf.

[31] Janice A. Beecher, *Potential for Economic Regulation of Michigan's Water Sector: Policy Brief for the Incoming 2019 Gubernatorial Administration*.

[32] Janice A. Beecher, *Economic Regulation of Utility Infrastructure*, Lincoln Institute of Land Policy, May 2013, https://www.lincolninst.edu/app/uploads/legacy-files/pubfiles/economic-regulation-of-utility-infrastructure_0.pdf.

[33] Nicole T. Carter, Specialist in Natural Resources, authored this entry.

[34] This is generally not a question of what powers the federal government has and could exercise under the Constitution. Rather, it is a recognition that Congress has often required that the United States defer to or comply with state law in the construction and operation of federal facilities pertaining to allocation, control, or distribution of water (see, for example, §8 of the Reclamation Act of 1902, 32 Stat. 390; 43 U.S.C. §§372, 383). Other laws recognizing state primacy and their effects have been the subject of much judicial interpretation. At the same time, as owner of hundreds of thousands of acres of public domain land, the federal government is the "owner of the right to use the waters pertaining to the public domain lands, the right to use of which has not passed into private ownership under authority of the U.S. or an earlier sovereign." (Letter from Kent Frizzell, Assistant Attorney General, Land and Natural Resources Division, Department of Justice, to the National Water Commission, January 11, 1973.) The federal government also holds reserved water rights—although in many cases unquantified—for the purposes associated with the reservations of federal lands withdrawn from the public domain (e.g., military lands, national forests, national park lands, and wilderness areas).

municipal, industrial, and other purposes."[35] Consequently, states may express concern when federal government actions are seen as infringing on state primacy in water allocation or controlling water management decisions within state boundaries.

As discussed above, state laws and regulations largely govern access to freshwater within a state. Water rights and water supply regulations differ by state and often may differ for surface water and groundwater access within a state.[36] For data center owners and operators, these water rights and access issues would mainly come into play for self-supply (i.e., constructing or operating an intake from a river or lake, or operating wells) rather than obtaining water from a public water system. Otherwise, conforming with state water rights and access requirements would be the responsibility of the water service provider that delivers the water to the data center.

In the United States, municipalities and other water service providers have largely been responsible for developing and distributing water supplies to serve the households, commercial entities, and industries in their service areas. Congress has authorized federal agencies to assist communities with municipal water supply development generally through the provision of financial or technical assistance.[37] Congress also has tasked federal agencies with protecting the quality of drinking water derived from surface waters and groundwater, as well as protecting fish and wildlife resources.[38]

State law often provides statutory authority related to the establishment and operation of water utilities within the state. In many states, a public water system is required to provide water service within its service area (i.e., a utility may have a duty to provide service if certain conditions, such as capacity and water rights, are met and the utility is the exclusive provider of services in the area). Some states may allow utilities to establish terms and conditions of service and may allow utilities to decline to provide services to certain entities for particular uses or reasons. If a utility has authority to establish terms and conditions and chooses to do so, it may be required to establish and enforce those terms and conditions in a fair and impartial manner for customers in generally similar circumstances.

Although Congress defers to states' primacy in intrastate water allocation, the federal government has invested in infrastructure to develop water resources, and these facilities may store water for various purposes. For example, reservoirs and dams and other infrastructure operated by the Department of the Interior's (DOI's) Bureau of Reclamation (Reclamation) and the U.S. Army Corps of Engineers (USACE) may store water for irrigation and for municipal and industrial uses,

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[35] The act also states that the federal government should participate and cooperate in developing these supplies at federal flood control, navigation, and irrigation projects.

[36] Depending on individual state water resources and their historic development, states may use one or a hybrid of various water rights doctrines for their surface and groundwater rights regimes. For example, under the *riparian* doctrine, a person who owns land that borders a watercourse has the right to make reasonable use of the surface water on that land. Traditionally, the only limit to users under the riparian system is the requirement of reasonableness in comparison to other users. Under the *prior appropriation* doctrine, a person who diverts water from a watercourse (regardless of his location relative thereto) and makes reasonable and beneficial use of the water may acquire a right to use of the water, and priority is given in order of seniority (i.e., the first person to divert and use water gets first, or senior priority, and persons following in sequence get next priority, or junior priority, according to when they diverted and used the water). Many states east of the Mississippi River generally follow a riparian doctrine of water rights, while many western states typically follow the prior appropriation doctrine. Under the states' legal water rights regimes, some states administer permit programs that require certain water users that withdraw large amounts of water resources to register with the state. Other states have undertaken various planning and reporting programs to monitor water use, but do not generally require a permit.

[37] For more information about these authorities, see CRS Report R46471, *Federally Supported Projects and Programs for Wastewater, Drinking Water, and Water Supply Infrastructure*, coordinated by Jonathan L. Ramseur.

[38] For more information about the federal role in the protection of drinking water sources, see CRS Report RL31243, *Safe Drinking Water Act (SDWA): A Summary of the Act and Its Major Requirements*, by Elena H. Humphreys.

among other purposes. (For more on the role of federal projects in data center water supplies, see “Are Federal Reservoirs and Infrastructure Providing Water to Data Centers?”)

Are There U.S. Data Centers That Directly Source Their Water?[39]

While the vast majority of U.S. data centers have largely met their water needs through municipal water suppliers, various factors may shape the interest of data center developers and operators looking to self-supply, and their interest in options other than municipal water systems and locations outside municipal service areas.[40]

A few data centers reportedly use or have proposed to use groundwater withdrawals to directly meet their water supply needs or to use as a backup for their primary supplies. For example, a proposed data center in Richland Parish in Northeast Louisiana is planning to use groundwater from the Mississippi River Alluvial Aquifer for its cooling.[41] In the past, Congress generally has deferred management of U.S. groundwater resources to the states, with a few exceptions related primarily to protecting drinking water. Therefore, the states or entities of the state primarily determine whether groundwater withdrawals require permits or other approvals.[42] In the federal congressional context, authorities have been proposed and enacted to facilitate state, local, and private groundwater management efforts (e.g., management of federal reservoir releases to allow for groundwater recharge by local utilities).[43]

Comprehensive, publicly available information on data center water sources is not available. To date, CRS has not found sources that identify currently operating U.S. commercial data centers that self-source using surface water. That said, interest in meeting water supply needs other than through municipal water suppliers may increase as commercial data center developers look to sites outside municipal boundaries and service areas (e.g., in unincorporated areas or on federal lands), and as communities respond to local concerns about data center impacts. One way that data center developers may attempt to access surface water without going through municipal water systems is through irrigation districts.[44] How direct water withdrawals and consumption for

[39] Nicole T. Carter, Specialist in Natural Resources Policy, authored this entry.

[40] Local (or state) restrictions on data centers seem to reflect community concerns about data centers on local utilities and resources. These are likely factors shaping interest by data center developers and operators in siting data centers outside local municipal service areas, such as in rural and unincorporated areas.

[41] According to local reporting, the data center is “registered to consume more than 23 million gallons of water per day, or 8.4 billion gallons per year, according to state records and the company itself.... But Meta says those limits are substantially higher than what it will actually use annually. According to the company, the data center will use between 500 to 600 million gallons per year once it is up and running in 2028, or an average of 1.5 million gallons per day” (Josie Abugov, “How Much Water Will Data Center Use?” *Richland Beacon News*, January 1, 2026, https://www.therichlandbeaconnews.com/article/1024,how-much-water-will-data-center-use).

[42] State requirements can vary. For example, the Missouri Department of Natural Resources (Missouri DNR) data centers and water website states: “There are no regulatory restrictions on the amount of water that can be used or for what purposes. Consequently, while the department regulates water quality, it does not regulate water amount or usage, beyond exporting water out of state and requiring annual reports of major water users. *Major water users* refers to any facility or individual with the capability to withdraw at least 100,000 gallons per day (70 gallons per minute) from any water source in Missouri.” (Missouri DNR, “Data Centers,” https://dnr.mo.gov/data-e-services/centers.)

[43] For more information about groundwater management, see CRS Report R45259, *The Federal Role in Groundwater Supply*, by Peter Folger et al.

[44] Two reported examples of data center developers seeking water from irrigation districts are as follows. In December 2024, the Town of Marana, AZ, adopted an ordinance amending the town code to state, “The Marana water department will not provide potable water to a data center (principal or accessory use) for its cooling system, humidity control, and other similar operations” (Town of Marana, Marana Ordinance No. 2024.029, p. 6). For a proposed data center in the town, the Cortaro Marana Irrigation District is expected to provide nonpotable water for industrial, irrigation, and fire (continued...)

data centers could affect local water resources depends on the water conditions and supply options available locally or regionally, as well as other demands for water. That is, the amount of water available, its condition, its seasonal and weather-dependent availability, as well as other uses (such as households, industries including the energy and power industries and agriculture, and environmental and species needs and conditions) can factor into the relative significance of a new water demand from data centers. Similarly, the timing of peak water demand for data centers (e.g., hot days) may also be a factor if it occurs simultaneously to other users' peak demands, or when supplies are particularly constrained. Further, direct withdrawals would be subject to state groundwater and surface water laws and regulations, pursuant to the prevailing water rights doctrine in each state (i.e., riparian, prior appropriation, right of capture, or some hybrid).[45]

Are Federal Reservoirs and Infrastructure Providing Water to Data Centers?[46]

Most large-scale federal water resource projects are owned and managed by the two principal federal water resource agencies: Reclamation, which operates facilities in the 17 western reclamation states,[47] and USACE. Reclamation owns and operates reservoirs, dams, and other infrastructure that are used to store and deliver water for various purposes, including primary project purposes of irrigation and municipal and industrial (M&I) uses. DOI typically acquires water rights in the respective states for these projects as needed and contracts with water users (typically irrigation districts and municipalities) for delivery of project water supplies.[48]

USACE dams typically have not focused on water supply storage as a principal project purpose; instead, water supply storage is often a secondary purpose of multipurpose dams. The role of USACE in water storage nonetheless can be locally significant. Because most USACE reservoirs store water for nonconsumptive purposes (like navigation and flood control), the agency generally does not hold state water rights for its projects. USACE may store water for municipal and industrial uses at its reservoirs; the entity requesting a water supply agreement to withdraw stored water from a USACE-operated reservoir is responsible for securing water rights through the state.

Based on research conducted in early July 2026, CRS did not identify data center developers or operators that have directly entered into a water supply agreement with Reclamation or USACE for withdrawal of water stored at federal facilities.[49] Nonetheless, existing or planned data centers

suppression purposes (Charles Borla, "Rezoning Approved for Marana Data Center Campus," *Arizona Daily Star*, February 18, 2026). In an unincorporated area of Imperial County, CA, reportedly a data center developer claims to have attempted to fallow agricultural land in order to transfer (through a change of purpose application) the conserved water to the data center's operations. The local irrigation district denied the application for the untreated irrigation canal water to be used for industrial cooling water; the developer subsequently filed suit against the irrigation district (Betty Miller, "Data Center Developer Sues IID Over Water Service Denial," *The Desert Review*, June 18, 2026).

[45] See footnote 36.

[46] Nicole T. Carter, Specialist in Natural Resources Policy, and Charlie Stern, Specialist in Natural Resources Policy, authored this entry.

[47] The 17 reclamation states are Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.

[48] For more information on the Bureau of Reclamation, see CRS Report R46303, *Bureau of Reclamation: History, Authorities, and Issues for Congress*, by Charles V. Stern and Anna E. Normand.

[49] For a discussion of U.S. Army Corps of Engineers (USACE) authorities for water supply storage agreements, see CRS Report RL30478, *Federally Supported Water Supply and Wastewater Treatment Programs*, coordinated by Jonathan L. Ramseur.

may indirectly receive water through water utilities or communities that have such agreements with federal agencies. For example, CRS identified two USACE facilities related to data centers:

1. The Project Turbo data center (which was paused as of December 2025) near Gainesville, GA, reportedly had planned to meet its water needs through the City of Gainesville's water system; the city withdraws water from USACE's Lake Lanier as its primary water source.[50]
2. Amazon's project in Caddo and Bossier parishes in Louisiana, associated with land acquisition by STACK Infrastructure (an industrial site developer), has planned water service through Blanchard Utilities of the Town of Blanchard, LA. Blanchard draws its water supply from Caddo Lake, which is formed by a dam operated by USACE.[51]

Some data centers in the 17 western states where Reclamation owns and operates water resource facilities appear to be indirectly receiving water from Reclamation projects through entities that have agreements with federal facilities. For instance, a 2026 study found that 66 data centers were completed or under construction in Central Arizona.[52] This figure included data centers in the areas serviced by municipal water suppliers for Tucson (9), Phoenix (25), Scottsdale (5), and Mesa (8). All of these municipalities receive a significant portion of their water supplies from the federally managed Colorado River, through the Central Arizona Project.[53] Phoenix, Scottsdale, and Mesa also receive significant shares of their water supplies from the federally owned Salt River Project. Some data centers may also pursue the conversion of federal project water for irrigation uses to M&I uses.[54]

The Water Resources Development Act of 2026 (H.R. 9497) as ordered to be reported in July 2026 includes a provision that may provide information relevant to data centers and USACE projects. The provision would direct the Secretary of the Army within one year of enactment to report on impacts of "new commercial and industrial water users" on USACE water resources development projects that are authorized for the purpose of water supply or water conservation.[55]

[50] USACE and the City of Gainesville, GA, entered into an agreement in June 1953 to compensate the city for property taken to construct the Buford Dam and its Lake Lanier reservoir. Pursuant to the agreement, Gainesville was granted the right to remove up to 8 million gallons of water per day from the lake without payment to USACE. Clyde Morris, "Project Turbo Data Center: Is LLA Aware and Involved?" *Lake Lanier Association Newsletter*, 2025.

[51] Liz Swain, "Blanchard Nears First Public Meeting on Contentious Data Center," *The Shreveport-Bossier City Advocate*, March 2, 2026. Unlike most other USACE dams, whose operation remained a federal responsibility after construction, according to USACE, the agency was not transferred authority over the reservoir or the real estate at Caddo Lake, when in 1976 Congress directed USACE to assume responsibility for dam operations. Therefore, Blanchard's water withdrawals from the reservoir are not subject to a water supply agreement with USACE, and an easement to access the lake is not required of USACE. (USACE, personal communication with CRS, May 20, 2026.) Other federal permits and authorizations may be required. Caddo Lake is a 25,400-acre lake and wetland in Texas and Louisiana.

[52] Arizona State University, Morrison Institute for Public Policy, "From Copper, Cattle and Cotton to Chips and Cloud Computing: Large Water Uses in Central Arizona," February 2026, https://morrisoninstitute.asu.edu/copper-cattle-and-cotton-chips-and-cloud-computing-large-water-uses-central-arizona.

[53] For more information, see CRS Report R45546, *Management of the Colorado River: Water Allocations, Drought, and the Federal Role*, by Charles V. Stern, Pervaze A. Sheikh, and Kristen Hite.

[54] For example, see the Marana and Imperial proposals in discussed in footnote 44.

[55] USACE's authorities have typically used "municipal and industrial" to broadly capture nonagricultural water uses, including commercial uses. More generally data centers have often been classified as commercial facilities (e.g., see discussion in "What Is the Current Federal Role in Assessing Data Center Water Use and Its Effect on Water Resources?") and also at times could be considered as industrial facilities (e.g., some local zoning requirements).

How Does and Can the Federal Government Support State and Local Water Supply Planning, Including for Data Centers?[56]

As noted above, most data centers are not currently sourcing their water directly (referred to as *self-supply*) and instead receive water from public water supplies, which generally source from surface water bodies (e.g., Lake Michigan for Mount Pleasant, WI, data centers, or the Potomac River for Loudoun County, VA, data centers) or local groundwater. As previously noted, state laws and regulations generally determine access to water sources within state borders. For some shared resources, however, interstate compacts and associated river basin organizations may play a role in determining access to state water resources, as well as in considering potential impacts on other states (e.g., upstream withdrawals may affect availability of water for downstream states).

Congress has authorized some federal support, including technical assistance for water planning efforts in selected states, and state and local drought planning and water resource planning (e.g., USACE technical assistance for states and local water resource planning authorized by 42 U.S.C. §1962d-16 or USACE watershed studies authorized by 33 U.S.C. 2267a).[57] For example, DOI, through Reclamation's Drought Response Program, has the authority to provide support for the development of comprehensive drought plans for state and local entities in the 17 western Reclamation states, and also may support projects that build long-term resiliency to drought. To date, this assistance has been limited to state and local governments and entities with water or power delivery authorities. Some federal legislative proposals, such as S. 3737 in the 119th Congress (see **Table A-1** in the **Appendix**), would expand this Reclamation authority to include data centers, among other entities, as eligible applicants for project support.

Some states, such as California, Texas, and Florida, have undertaken their own planning efforts. In some cases, it is unclear whether or how these recent planning efforts may have incorporated data center water demands.

While the federal government has continued some support for state planning efforts, at times prior to the mid-1980s there were broader federal water resource planning efforts. For a brief history of federal water planning since 1965, see the text box "Federal Water Planning Since 1965" below.

In 2022, Congress established in statute the Interagency Committee on Water Management and Infrastructure (P.L. 117-316; 15 U.S.C. §9708). Congress directed the committee to work toward improving interagency coordination in water-related matters, including water storage and supplies, and to identify needs for cross-agency research and coordination. Since enactment, various groups have advocated implementing the committee as Congress directed in the law.[58]

[56] Nicole T. Carter, Specialist in Natural Resources Policy, and Charlie V. Stern, Specialist in Natural Resources Policy, authored this entry.

[57] The House-introduced Water Resources Development Act of 2026 (H.R. 9497) would amend the water supply purposes for which the Secretary of the Army can produce a watershed assessment that includes water supply for "projected water supply needs for municipal, domestic, industrial, and agricultural purposes."

[58] Coalition letter from Julie Ufner, National Waterways Conference, et al. to President Donald J. Trump, regarding Executive Order 13956, "Modernizing America's Water Resource Management and Water Infrastructure," September 30, 2025, https://icwp.org/wp-content/uploads/2026/03/Coalition-Water-Subcabinet-Committee-Letter_Sept-2025.pdf.

Federal Water Planning Since 1965

At times, concern about the availability and use of water to support the nation's people, economy, and environment has bolstered interest in federal water supply planning. While many support better coordination of federal water activities and federal financial support, states often react to proposals of a greater federal role in water supply as attempts to exert federal control over what may be considered state and local matters. Congress has not enacted overarching water policy legislation since the 1965 Water Resources Planning Act (P.L. 89-80; 42 U.S.C. §1962). The Water Resources Planning Act was the direct result of recommendations of the Senate Select Committee on National Water Resources, a congressional committee established to review national water resources policy. The 1965 act, among other things, created the interagency Water Resources Council (WRC). Following the 1965 act, the federal government supported federal, state, and river basin planning in numerous ways. By the late 1970s, federal watershed and river basin commission planning was both positively received and criticized for its costs and usefulness. Federal funding for state planning efforts declined. The early-1980s disbandment of the WRC (with re-formation for a few specific decisions in the mid-2010s), and of most river basin commissions, shifted federal project planning away from coordinated watershed-based decisionmaking. Since then, most federal agency planning has been project-specific, with some exceptions.

Although an assessment of the nation's water resource conditions was last conducted in 1975 and several entities have studied selected aspects of water policy and management, the most recent systematic and comprehensive review of nationwide federal water policy was the National Water Commission's 1973 *Water Policies for the Future*. The National Water Commission was created by Congress in 1968 for a five-year term to provide a review of national water resource problems and programs (P.L. 90-515; 82 Stat. 868) and ended in 1973.

Since 1983, coordination of federal water resources efforts has largely been ad hoc. In 2022, Congress established in statute the Interagency Committee on Water Management and Infrastructure (P.L. 117-316) after two years of its operating informally. The committee includes the Administrators of the National Oceanic and Atmospheric Administration and Environmental Protection Agency, and the Secretaries of the Interior, Agriculture, Commerce, Energy, and the Army, and others, as appropriate. The committee's purpose is to "ensure" the federal government engages in water-related matters, including water storage and supplies, water infrastructure, and water forecasting, among other topics, where agencies have joint or overlapping responsibilities.

What Are the Available Data on Data Center Water Use?[59]

The availability of sector-specific or facility-specific water usage data (e.g., that of a data center) is limited. Water utilities may collect water usage data and, when required, report the data to state or local agencies; such data are not always shared publicly.[60] Water usage data for facilities that rely on public supplies are typically combined with water usage data from all the other users within the service area.[61] Thus, effects from individual facilities may be difficult to identify and quantify. Facilities that self-supply often have fewer reporting requirements than a utility, depending on state or local laws and/or regulations.[62]

Some states or localities may pursue more information on current or anticipated water use by data centers. For example, the Texas state legislature directed the Public Utility Commission of Texas to conduct an Energy and Water Use Survey for Data Center and Virtual Currency Mining

[59] Anna Normand, Specialist in Natural Resources Policy, and Elena Humphreys, Specialist in Environmental Policy, authored this entry.

[60] M. Y. Naseri and L. T. Marston, "United States Water Withdrawals Database," *Scientific Data*, vol. 12, article no. 2022 (2025), https://doi.org/10.1038/s41597-025-06300-1; L. Medalie et al., *Water Use Across the Conterminous United States, Water Years 2010–20, Chap. D of U.S. Geological Survey Integrated Water Availability Assessment—2010–20*, USGS Professional Paper 1894–D, 2025, https://doi.org/10.3133/pp1894D (hereinafter Medalie et al., *Water Use Across the Conterminous United States, Water Years 2010–20*).

[61] C. L. Luukkonen et al., *Data and Knowledge Gaps of a Water Bottling Facility Inventory and Select Water-Use Dataset, United States*, USGS Scientific Investigations Report 2024–5106, 2024, https://doi.org/10.3133/sir20245106 (hereinafter Luukkonen et al., *Data and Knowledge Gaps*).

[62] Medalie et al., *Water Use Across the Conterminous United States, Water Years 2010–20.*

Facilities; the commission is required to submit a resulting report to the Legislative Budget Board and the governor by the end of 2026.[63]

What Is the Current Federal Role in Assessing Data Center Water Use and Its Effect on Water Resources?[64]

To date, the federal government has not conducted a systematic assessment of water use by data centers. For the past 70 years, the United States Geological Survey (USGS) has compiled national-, state-, and county-level estimates of water withdrawals across the nation based on reporting from various water use sectors.[65] The USGS historically appears to have classified data centers as commercial for purposes of its water withdrawal estimates through 1995.[66] The USGS has not provided separate water withdrawal estimates for the commercial sector since 1995.[67]

More recently, to fulfill mandates from the Secure Water Act, the USGS Water Availability and Use Science Program developed statistical models using AI and machine learning for estimating water withdrawals and consumptive use.[68] These models rely heavily on information provided by state and local governments, as well as federal datasets.[69] In 2025, the USGS Water Availability and Use Science Program produced the *USGS Integrated Water Availability Assessment—2010-20*, which provided estimates of surface water and groundwater withdrawals for public supply, irrigation, and thermoelectric generation cooling on a subwatershed scale at monthly intervals over a decade.[70] For public supply, the models produced separate estimates for domestic

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[63] Public Utility Commission of Texas, "Frequently Asked Questions: Energy and Water Use Survey for Data Center and Virtual Currency Mining Facilities (Project No. 59281)," https://www.puc.texas.gov/industry/water/utilities/energy-and-water-use-survey/faq/#dcvcmf-g; Public Utility Commission of Texas, *Memorandum Project No. 59181, Data Collection to Study the Water Use of Dam Centers and Virtual Currency Mining Facilities (General Appropriations Act of the 89th Legislative Session at VIll-57 ("Rider 6") Staff Update*, April 2, 2026, https://interchange.puc.texas.gov/Documents/59281_2_1615402.PDF.

[64] Anna Normand, Specialist in Natural Resources Policy, authored this entry.

[65] Through 2015, the United States Geological Survey (USGS) published estimates for one year every five years. USGS, "Accessing Water Use Data," June 17, 2026, https://www.usgs.gov/mission-areas/water-resources/science/accessing-water-use-data.

[66] The commercial sector included computing infrastructure providers, data processing, web hosting, and related services. See the two-digit North American Industrial Classification System (NAICS) 2022 code 518210 and Office of Management and Budget's 1987 Standard Industrial Classification code 7371-7379. U.S. Census Bureau, "North American Industry Classification System," https://www.census.gov/naics/?input=&year=2022; USGS, *Guidelines for Preparing U.S. Geological Survey Water-Use Estimates in the United States for 1995, Appendix B*, https://water.usgs.gov/usgs/watuse/1995compilation/1995guidelines/appb.html.

[67] USGS, "Changes in Water Use Categories," August 3, 2018, https://www.usgs.gov/mission-areas/water-resources/science/changes-water-use-categories.

[68] The Secure Water Act is Title IX, Subtitle F of the Omnibus Public Land Management Act of 2009 (P.L. 111-11). Section 9508 directed the Secretary of the Interior to produce regular, comprehensive assessments of water use and availability in the United States. USGS, "Water Use," November 1, 2023, https://www.usgs.gov/mission-areas/water-resources/science/water-use (hereinafter USGS, "Water Use"); A. Alzraiee et al., "Next Generation Public Supply Water Withdrawal Estimation for the Conterminous United States Using Machine Learning and Operational Frameworks," *Water Resources Research*, 60, e2023WR036632 (2024), https://doi.org/10.1029/2023WR036632.

[69] To support improved collection of water use data by states, the Secure Water Act authorized the USGS Water-Use Data and Research Program to provide financial assistance through cooperative agreements with state water resource agencies. USGS, "Water Use."

[70] The USGS is aiming for a future release of additional categories of use. Subwatershed scale refers to the 12-digit hydrologic units code (HUC-12) watershed areas in the USGS Watershed Boundary Dataset; it is the scale often used for localized studies. USGS, "National Water Availability Assessment Data Companion," https://water.usgs.gov/nwaa-data/; Medalie et al., *Water Use Across the Conterminous United States, Water Years 2010-20;* USGS, *U.S. Geological* (continued...)

deliveries and for combined commercial, industrial, and institutional deliveries.[71] In 2026, the USGS released a dataset covering 2020 self-supply industrial water use by county and subwatershed scale.[72] The facilities in the self-supply industrial water use dataset are based on a manufacturing categorization.[73]

Federal funding has also supported the development of a water use database.[74] In 2025, researchers from the Virginia Polytechnic Institute and State University (Virginia Tech) published the United States Water Withdrawals Database, a standardized compilation of water withdrawal data and estimates for 42 states, which included public supply, industrial, and commercial water use.[75] The database provides water withdrawal values reported by states from water users that are required by state law to periodically report their withdrawals from surface water and/or groundwater. The new USGS water availability assessments are different in that they supplement state-reported values with modeled estimates to fill in spatial, temporal, and sectoral gaps, and do not include self-supply commercial water use.[76]

The USGS's Water Availability and Use Science Program also may investigate with partners the effect of water use in specific sectors or geographic regions on water resources.[77] Appropriated cooperative matching funds have supported partnerships with nonfederal entities to investigate how hydrologic systems are affected by increasing demand and competition for limited regional water resources.[78] In addition, Congress directed the program to conduct a nationwide assessment of water withdrawals for a specific industrial sector—water bottling—and its effect on water resource availability.[79] Similar to data centers, there is no comprehensive national inventory of water bottling facilities that includes the volume of water extracted and associated water source.[80]

Survey Integrated Water Availability Assessment—2010-20, USGS Professional Paper 1894, 2025, https://doi.org/10.3133/pp1894. USGS, "Hydrologic Units of the United States," https://water.usgs.gov/themes/hydrologic-units/.

[71] J. D. Larsen et al., "Public Supply Water Delivery Analysis and Estimation for the Conterminous United States," *Water Resources Research*, vol. 61, e2024WR039271 (2025), https://doi.org/10.1029/2024WR039271.

[72] USGS, "Industrial Water Use for 2020 by County, HUC12, Month, and Year for the Conterminous United States," April 22, 2026, https://www.usgs.gov/data/industrial-water-use-2020-county-huc12-month-and-year-conterminous-united-states.

[73] The USGS provided data based on NAICS codes 31-33: the manufacturing sector "comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products." U.S. Census Bureau, "North American Industry Classification System," https://www.census.gov/naics/?input=&year=2022.

[74] M. Y. Naseri and L. T. Marston, "United States Water Withdrawals Database," *Scientific Data*, vol. 12, article no. 2022 (2025).

[75] The dataset published by the study authors does not provide further specific facility information under these water uses. M. Y. Naseri and L. T. Marston, "United States Water Withdrawals Database," *Scientific Data*, vol. 12, article no. 2022 (2025).

[76] M. Y. Naseri and L. T. Marston, "United States Water Withdrawals Database," *Scientific Data*, vol. 12, article no. 2022 (2025).

[77] USGS, "Water Use."

[78] USGS, "Cooperative Projects," https://www.usgs.gov/programs/water-availability-and-use-science-program/cooperative-projects.

[79] Explanatory statements accompanying Division G of the Consolidated Appropriations Act, 2021 (P.L. 116-260) and Division G of the Consolidated Appropriations Act, 2022 (P.L. 117-103) directed a total of $2.75 million of funding for the USGS to research the hydrologic impact of extraction of water for bottling on water tables, water availability, and water quality. USGS, "Withdrawals for Bottled Water," December 2, 2024, https://www.usgs.gov/mission-areas/water-resources/science/withdrawals-bottled-water.

[80] C. L. Luukkonen et al., *Data and Knowledge Gaps*.

The water bottling study may be useful as a possible analogue to any study on water use at data centers, in that any such effort might likely face similar challenges in obtaining comprehensive water use information.

What Is Water Reuse?[81]

Water reuse, also commonly referred to as *water recycling* or *water reclamation*, is the process of capturing wastewater, stormwater, saltwater, or graywater and treating it as needed for a specific beneficial purpose.[82] Such purposes may include industrial processes, agriculture, landscape irrigation, surface or groundwater replenishment, or even drinking water.[83] The extent of treatment depends upon the intended use and any potential risk to human health or the environment.

Amid growing concerns about data centers' water consumption and potential impacts on municipal potable water supplies and other freshwater resources, some data centers are incorporating water reuse into their operations.[84] These practices include installing on-site treatment systems that treat and recycle wastewater for reuse in cooling processes and accessing reclaimed water from nearby wastewater treatment facilities. According to the U.S. Environmental Protection Agency (EPA), many data center operators are interested in transitioning to recycled water for cooling purposes but face an unclear permitting pathway for this specific use.[85]

Does the Federal Government Have a Role in Regulating Water Reuse?[86]

At the federal level, there are no laws or regulations governing water reuse.[87] Generally, states maintain primary regulatory authority in allocating and developing water resources. According to EPA, "Some states have established programs to specifically address reuse, and some have incorporated water reuse into existing regulatory frameworks."[88] Treatment and monitoring requirements may vary depending upon the source of recycled water and the end use. Accordingly, states with water reuse regulations, guidelines, or policies may create separate treatment specifications based on the source of reclaimed water and the end use.[89] EPA data

[81] Laura Gatz, Specialist in Environmental Policy, authored this entry.

[82] WateReuse, "Water Reuse 101," https://watereuse.org/educate/. EPA, "Basic Information about Water Reuse," https://www.epa.gov/waterreuse/basic-information-about-water-reuse#basics.

[83] WateReuse, "Water Reuse 101," https://watereuse.org/educate/. EPA, "Basic Information about Water Reuse," https://www.epa.gov/waterreuse/basic-information-about-water-reuse#basics. EPA, "Water Reuse Resource Hub by End-Use Application," https://www.epa.gov/waterreuse/water-reuse-resource-hub-end-use-application.

[84] Association of Clean Water Administrators (ACWA) and EPA, "Water Reuse for Data Centers," https://www.acwa-us.org/wp-content/uploads/2025/12/ACWA-EPA_webinar_data_center_and_reuse_12032025.pdf.

[85] EPA, "Water Reuse Action Plan: Online Platform," *Action 3.10: Support States in Expanding the Use of Recycled Water for Industrial and Data Center Cooling Applications*, https://www.epa.gov/waterreuse/water-reuse-action-plan-online-platform?action=3.10.

[86] Laura Gatz, Specialist in Environmental Policy, authored this entry.

[87] EPA, "Basic Information About Water Reuse," https://www.epa.gov/waterreuse/basic-information-about-water-reuse#basics.

[88] EPA, "Basic Information About Water Reuse," https://www.epa.gov/waterreuse/basic-information-about-water-reuse#basics.

[89] EPA, "Basic Information About Water Reuse," https://www.epa.gov/waterreuse/basic-information-about-water-reuse#basics.

indicate that as of February 2024, 20 states had developed guidelines or regulations for industrial water reuse.[90]

At the federal level, EPA has taken steps, in collaboration with federal agencies and other partners, to help support the adoption of water reuse and address barriers across a range of technical, institutional, and financial topics.[91] In 2020, EPA published a National Water Reuse Action Plan (WRAP), in coordination with federal agencies, state and tribal partners, and the water utility sector and associations, among other stakeholders.[92] The WRAP identified 37 actions with over 200 implementation milestones to be undertaken by a variety of stakeholders, aimed at supporting consideration and implementation of water reuse as a water resource management strategy. As part of its efforts under the WRAP, EPA and partners developed the Regulations and End-Use Specifications Explorer (REUSExplorer), a web-based tool that summarizes over 185 state reuse regulations, searchable by state, sources of water, and reuse application.[93] The REUSExplorer tool aims to help clarify the regulatory landscape, ensure that interested parties have information on water reuse treatment standards, and help support states as they develop reuse regulations and guidelines.[94]

Enacted in 2021, the Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58) required EPA to take certain actions related to water reuse. Section 50218 of the IIJA directed EPA to establish a Water Reuse Interagency Working Group to develop and coordinate water reuse activities and resources through the implementation of a National Water Reuse Action Plan.

In April 2026, EPA released the Water Reuse Action Plan 2.0 (WRAP 2.0), which the agency characterizes as a renewed initiative, expanding upon the original plan and emphasizing water reuse for "industry, the technology sector, and energy dominance."[95] In a press release for the plan, EPA specified that WRAP 2.0 is not a federal regulatory mandate; that EPA and federal partners recognize that states and local leaders understand their water resources and needs best; and that the initiative leans on collaborative partnerships to advance reuse.[96] WRAP 2.0 has a number of actions aimed at advancing the use of recycled water for data centers. Among these is an action, to be undertaken by EPA, "to work with states and the regulated community to compile and share best practices relevant for industrial cooling systems so states can readily permit the use of recycled water for data centers."[97] Other new data-center-related actions, to be undertaken by EPA and a number of partner stakeholders, include identifying and proposing solutions to the

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[90] Based on a CRS search of EPA's Regulations and End-Use Specifications Explorer (REUSExplorer), for "industry" under "reuse application," https://www.epa.gov/waterreuse/regulations-and-end-use-specifications-explorer-reusexplorer.

[91] EPA, "National Water Reuse Action Plan," https://www.epa.gov/waterreuse/national-water-reuse-action-plan.

[92] EPA, *National Water Reuse Action Plan*, EPA-820-R-20-001, February 2020, https://www.epa.gov/sites/default/files/2020-02/documents/national-water-reuse-action-plan-collaborative-implementation-version-1.pdf.

[93] EPA, "Regulations and End-Use Specifications Explorer (REUSExplorer)," https://www.epa.gov/waterreuse/regulations-and-end-use-specifications-explorer-reusexplorer.

[94] EPA, "Basic Information about Water Reuse," https://www.epa.gov/waterreuse/basic-information-about-water-reuse#basics. EPA and the Association of Clean Water Administrators (ACWA), *Water Reuse for Data Centers*, December 2025, https://www.acwa-us.org/wp-content/uploads/2025/12/ACWA-EPA_webinar_data_center_and_reuse_12032025.pdf.

[95] EPA, "Water Reuse Action Plan 2.0," https://www.epa.gov/waterreuse/water-reuse-action-plan-20.

[96] EPA, "EPA Launches Water Reuse Action Plan 2.0 to Advance Agency's Core Mission and Strengthen US Industry, AI, and Energy Dominance," press release, April 16, 2026, https://www.epa.gov/newsreleases/epa-launches-water-reuse-action-plan-20-advance-agencys-core-mission-and-strengthen-us.

[97] EPA, "Water Reuse Action Plan 2.0 Booklet," https://www.epa.gov/system/files/documents/2026-04/wrap-2.0-booklet.pdf, p. 10.

"regulatory hurdles" associated with using recycled water for data center cooling, hosting a collaborative water and wastewater utility forum on data centers, establishing a Center of Excellence to advance the use of recycled water for AI, and advancing development of on-site water reuse through the Building Infrastructure Locally for Decentralized Water Systems (BILD) initiative.[98]

Water Quality Impacts from Data Center Discharges

What Types of Water-Related Discharges Do Data Centers Generate?[99]

Data centers may generate different types of water-related discharges (i.e., effluents), including wastewater and stormwater discharges. In addition, in some cases when land is developed to construct data centers, the development may include discharges of dredged or fill material into wetlands or streams.

Wastewater

Data centers generate two main types of wastewater discharges: (1) effluent from water-based cooling systems used for thermal regulation of computing equipment, and (2) domestic wastewater.[100] Cooling-water-related discharges, the predominant discharges, may include noncontact cooling water, cooling-system blowdown (i.e., the intentional discharge of water from a system), and discharges associated with construction, commissioning, or maintenance.[101] Domestic wastewater flows are generally more limited discharges generated from employee facilities (e.g., toilets). If the data center has on-site treatment (either for source water prior to its use for cooling or for wastewater prior to discharge) there may be additional wastewater streams from these systems.[102]

The frequency and volume of cooling-water-related discharges vary depending upon a number of factors, such as the cooling technology being used, site-specific operations (including size and facility design), and geographic location (e.g., seasonal air temperature and humidity affect cooling needs and related discharges).[103] Discharges also vary between the construction and commissioning phase and the operation phase.

The type of cooling technology is a key factor affecting the frequency and volume of discharges. For example, open-loop water-based cooling systems (i.e., evaporative cooling systems) typically generate higher volumes of effluent during operations. Water may be cycled through the system multiple times prior to discharge (i.e., blowdown). Closed-loop cooling systems, which circulate

[98] EPA, "Water Reuse Action Plan 2.0 Booklet," p. 10, https://www.epa.gov/system/files/documents/2026-04/wrap-2.0-booklet.pdf.

[99] Laura Gatz, Specialist in Environmental Policy, authored this entry.

[100] Rasheed Ahmad, "Keeping Data Centers Cool," *Civil Engineering*, March 2024, https://www.asce.org/publications-and-news/civil-engineering-source/civil-engineering-magazine/issues/magazine-issue/article/2024/03/engineers-often-need-a-lot-of-water-to-keep-data-centers-cool (hereinafter Ahmad, "Keeping Data Centers Cool," *Civil Engineering*, March 2024).

[101] WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*, April 16, 2026, https://water-ai-nexus.org/reports/water-and-wastewater-utilities-and-data-centers-frequently-asked-questions-faqs/ (hereinafter WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*).

[102] WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[103] WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

water within a sealed system without direct exposure to the environment, may generate more limited wastewater discharges during normal operational phases.[104] Both open- and closed-loop systems also generate wastewater during maintenance and during data center construction and commissioning.[105] Other types of cooling technologies, such as air-cooled systems, may generate little to no wastewater effluent, while immersion cooling (i.e., submersion of equipment in fluid) or hybrid cooling (i.e., a blend of air and liquid cooling) systems may reduce cooling water needs and related effluents.[106]

Data center construction, including commissioning of a facility, involves processes such as cleaning, passivation (i.e., a chemical process that enhances the corrosion resistance of metals), and flushing.[107] These processes involve chemical treatment of the cooling system components (e.g., cooling system loops) to clean and degrease equipment, remove impurities, and improve corrosion resistance.[108] These processes can generate short-term, high-volume discharges with higher pollutant concentrations than those generated during operational phases.[109] Due to the multiphase nature of data center development, these commissioning phases are not limited to one initial event, but rather may occur with each phase of site development.[110]

Stormwater

Stormwater discharges generated by data centers include runoff during construction phases of a data center site, as well as runoff associated with any industrial activities on the site. As discussed previously, data center development sometimes involves multiple phases of construction rather than a single construction period. This may therefore result in multiple periods during which a site may generate construction-stormwater-related discharges. During operational phases, data centers may generate stormwater runoff associated with industrial activities and equipment on the site, such as generators, fuel and chemical storage tanks, outdoor equipment storage, or material loading areas.[111]

Discharges of Dredged or Fill Material for Development

If a data center is constructed on a site that requires development of a parcel of land, in some cases, that development may involve discharges of dredged or fill material into wetlands or surface waters within that parcel.

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[104] WEF, "Advancing Understanding of Data Center Effluent," https://www.wef.org/events--education/webcasts/upcoming-webcasts/understand-data-center-effluent/ (hereinafter WEF, "Advancing Understanding of Data Center Effluent").

[105] WEF, "Advancing Understanding of Data Center Effluent."

[106] WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[107] WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[108] Allegheny Surface Technology, "Passivation for Data Centers: Protecting Stainless Steel Cooling Systems from Corrosion and Contamination," https://alleghenysurface.com/2025/10/passivation-for-data-centers-protecting-stainless-steel-cooling-systems-from-corrosion-and-contamination/.

[109] WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[110] WEF, "Advancing Understanding of Data Center Effluent."

[111] Ohio Environmental Protection Agency, "Fact Sheet for National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Data Center Facilities," https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/35/permits/Data_Centers/OHD000001_Draft.fs.pdf (hereinafter Ohio EPA, "Fact Sheet for NPDES General Permit for Discharges from Data Center Facilities").

What Types of Pollutants Do Data Centers Discharge in Their Wastewater?[112]

The pollutants that may be present in data center wastewater discharges depend upon a number of factors, including the source and quality of the water being used for cooling, the cooling technology being used, site-specific operations, and whether the discharges are from normal operations or from construction and commissioning phases.

For example, in water-cooled data centers that use evaporative cooling systems, the evaporation processes consume some of the water and concentrate any pollutants that were present in the source water.[113] Such concentrated pollutants commonly include total dissolved solids and may also include chlorine if the source water is treated public water or another chlorinated source.[114] Water may be cycled through the cooling system multiple times before it is discharged as blowdown. Data centers vary in the number of times they circulate cooling water prior to discharge. The number of cycles, sometimes referred to as *cycles of concentration*, can affect how much these pollutants concentrate.[115] In some data centers, fresh water may be added to dilute the concentrated cooling water and allow for additional cycles.

Data center operators may also use various types of chemical treatment for their cooling systems. The types of chemicals used vary and are sometimes considered proprietary, but may include acids, disinfectants, dispersants, corrosion inhibitors (to reduce corrosion and scaling in cooling loops), or biocides (to control bacteria, algae, fungi, and biofilm).[116] Typically, some of these may be used to help increase the number of cycles of concentration or to help inhibit corrosion. Data center discharges, therefore, may include these chemicals, particularly during maintenance operations or during commissioning and start-up of a facility.

Wastewater discharges may also contain pollutants that are products of metal pipe corrosion, such as copper, nickel, and chromium. In addition, during commissioning and start-up of a data center, the passivation and cleaning of the cooling loops before the system is put into service may involve use of chemicals to clean the metal and make it more corrosion resistant, which can lead to discharges that include treatment chemicals as well as metals.[117] Metals may also leach from piping materials during extended stagnation or initial system start-up, even when the operator does not intentionally add chemicals.[118]

Other water quality parameters in data center wastewater discharges that can be considered pollutants under the Clean Water Act (CWA) include pH (which can either be acidic or alkaline based on the cooling system's treatment processes), as well as elevated temperature.[119]

[112] Laura Gatz, Specialist in Environmental Policy, authored this entry.

[113] WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[114] Ohio EPA, "Fact Sheet for NPDES General Permit for Discharges from Data Center Facilities." Ahmad, "Keeping Data Centers Cool," *Civil Engineering*, March 2024.

[115] WEF, "Advancing Understanding of Data Center Effluent."

[116] WEF, "Advancing Understanding of Data Center Effluent." WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[117] WEF, "Advancing Understanding of Data Center Effluent."

[118] WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[119] 33 U.S.C. §1362(6). 40 C.F.R. §401.16.

How Are Water-Related Discharges from Data Centers Regulated at the Federal Level?[120]

The project proponent for data center development and the owner/operator of the data center facility may need to comply with certain federal requirements, including obtaining CWA permits or approvals, which aim to prevent or minimize water quality impacts from the data center's discharges. The relevant permits or approvals that may be needed will vary depending upon factors, including site-specific characteristics of the data center development site, facility, and operations; the destination of a facility's discharge (e.g., sewer system, surface water, other); and varying state and local requirements.

Regulation of Discharges of Dredged or Fill Material

If the construction of a data center requires the development of a site that contains waters of the United States (e.g., certain wetlands, streams, or other jurisdictional waters), and if the development would require placement of dredged or fill material into those waters, the project proponent would need to obtain a CWA Section 404 permit. In most states, the USACE administers Section 404 permits.[121] USACE may authorize such discharges through either individual (i.e., site-specific) permits, or through general permits that authorize discharges for categories of activities that are similar in nature. USACE or states issue individual permits for individual projects or applicants, typically when the project's discharge may cause more than minimal individual or cumulative impacts. USACE and states may issue general permits for proposed activities that will result in only minimal individual and cumulative adverse environmental effects. These permits are issued on a nationwide, regional, or state basis for particular categories of activities that are similar in nature.

USACE may issue general permits on a nationwide, regional, or statewide basis. Every five years, USACE issues nationwide permits (NWPs), which are general permits applicable nationwide to authorize categories of similar activities that the agency has determined will result in no more than minimal adverse impacts, individually and cumulatively, to waters of the United States.[122] In USACE's 2026 reissuance of its NWPs, the agency clarified that one of its existing permits, NWP 39, applies to data centers.[123] NWP 39 authorizes "discharges of dredged or fill material into non-tidal waters of the United States for the construction or expansion of commercial and institutional building foundations and building pads and attendant features that are necessary for the use and maintenance of the structures."[124] To qualify for NWP 39, the discharge of dredged or fill material must not cause the loss of greater than half an acre of nontidal waters of the United States.

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[120] Laura Gatz, Specialist in Environmental Policy, authored this entry.

[121] Two states, Michigan and New Jersey, administer their own Section 404 permitting programs; however, USACE retains permitting jurisdiction in certain waters in those states—typically those that are navigable in fact.

[122] USACE, "Regulatory Request System: Do I Need a Permit?" https://rrs.usace.army.mil/rrs/home/permitting.

[123] USACE, "Reissuance and Modification of Nationwide Permits," 91 *Federal Register* 768, January 8, 2026. In the preamble, USACE explained that commenters recommended adding data centers to the list of examples of commercial and institutional developments within the nationwide permit (NWP). USACE further explained that while the list is not intended to be all-encompassing, they added data centers to the list of examples. In July 2025, President Trump issued E.O. 14318, "Accelerating Federal Permitting of Data Center Infrastructure," which directed USACE to review its NWPs and determine whether a specific NWP is needed "to facilitate the efficient permitting of activities" related to certain data center projects. The preamble to the 2026 NWP regulation does not reference the executive order.

[124] USACE, *Decision Document: Nationwide Permit 39*, https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll9/id/3187.

USACE may also authorize discharges of dredged or fill material into jurisdictional waters and wetlands through individual permits, which require site-specific evaluation. According to public-facing USACE data, as of July 2026, the agency has issued 21 individual permits for data centers (between 2009 and 2026) and has additional permits pending.[125] The agency does not have public-facing data on the number of data centers with discharges authorized through general permits.

If a data center needs a CWA Section 404 permit, that also often triggers a requirement to obtain a CWA Section 401 water quality certification from the state or authorized tribe where the discharge would occur.[126] CWA Section 401 water quality certifications are required for any federal permit or license for an activity that may result in a discharge to waters of the United States.[127]

Regulation of Stormwater

Data center developers and owners/operators may also need to obtain National Pollutant Discharge Elimination System (NPDES) permits for stormwater discharges. The CWA authorizes both EPA and delegated states to administer NPDES permits, which authorize discharges of pollutants from point sources (i.e., discrete conveyances) to waters of the United States.[128] Most states (47 states) and one territory (the Virgin Islands) are authorized to administer their own NPDES permits.[129] EPA administers NPDES permits in Massachusetts, New Hampshire, New Mexico, the District of Columbia, the remaining territories, and on Indian lands. Similar to CWA Section 404 permits, NPDES permits can also be issued as individual or general permits.

Any construction project, including a data center development project, that disturbs one or more acres of land and discharges stormwater to waters of the United States must obtain coverage under an NPDES permit. Often, a project proponent can seek coverage under a general permit for construction activities, which establishes pollution prevention and sediment and erosion control requirements for stormwater discharges to waters of the United States.

A data center may also need an NPDES permit for industrial stormwater for the site during operations. Typically, NPDES industrial stormwater permits are required for discharges from specific categories of industrial activity, as designated in EPA regulations.[130] It is unclear whether data centers fall under any of these specific sectors, but the permitting authority may still designate a facility that generates stormwater discharges as needing a permit even when it does not fall under any of the specified sectors.[131] As an example, at least one state has proposed a draft general permit for data centers that would include coverage for discharges of pollutants in

[125] Data is based on a search of USACE, "USACE Regulatory and Section 408 Publicly Available Data," https://permits.ops.usace.army.mil/orm-public, for the term "data center," filtered by "all districts" and "all years." Issuance dates for these permits range from 2009 to 2026.

[126] EPA is the certifying authority on lands of exclusive federal jurisdiction or on Indian lands where tribes have not received authorization for treatment as a state for purposes of Clean Water Act (CWA) Section 401.

[127] For more on CWA Section 401 water quality certification, see CRS Report R46615, *Clean Water Act Section 401: Overview and Recent Developments*, by Laura Gatz and Kate R. Bowers.

[128] 33 U.S.C. §1342.

[129] EPA, "NPDES State Program Authority," https://www.epa.gov/npdes/npdes-state-program-authority. States, territories, and tribes may administer their own National Pollutant Discharge Elimination System (NPDES) permits if they seek and receive approval from EPA to assume the program. To date, no tribe has assumed administration of an NPDES permitting program.

[130] 40 C.F.R. §122.26(b)(14). See also EPA, "Stormwater Discharges from Industrial Activities," https://www.epa.gov/npdes/stormwater-discharges-industrial-activities.

[131] 40 C.F.R. §122.26(a)(9)(i)(C)-(D).

stormwater runoff on the site during operations from generators, fuel and storage tanks, outdoor equipment storage, material loading/unloading areas, or other activities.[132]

Regulation of Wastewater

The water-related permits that a data center may need to obtain for its wastewater discharges depend on what is in the discharge and where a data center sends its discharge—a municipal sewer system, a surface water body, or an alternative disposal method.

Municipal Sewer Systems

According to available sources, data centers most commonly send their wastewater effluent to publicly owned treatment works (POTWs).[133] The POTW then treats the water prior to discharging to nearby surface waters. If that POTW discharges to a water of the United States, then that facility would operate under an NPDES permit for wastewater, and the data center would be considered an *indirect discharger*.[134] Indirect dischargers are subject to regulation under the National Pretreatment Program.

The National Pretreatment Program, a component of the CWA's NPDES program, is intended to prevent the introduction of pollutants into a POTW that will interfere with its operations or pass through the treatment process.[135] Local municipalities are mostly responsible for implementing and enforcing pretreatment requirements.[136] EPA and states authorized to act as the approval authority for POTWs in their states may approve a POTW's pretreatment program. If approved, the POTW is the control authority responsible for ensuring compliance with pretreatment standards. If a POTW does not have an approved pretreatment program, the control authority is the approved state authorized to act as the approval authority or, in unapproved states, the EPA acts as the control authority.[137]

Typically, a control authority establishes pretreatment standards that may include general and specific prohibitions, categorical pretreatment standards, and local limits.[138] The control authority determines which standards are applicable to each industrial discharger, also referred to as an

[132] Ohio EPA, "Fact Sheet for NPDES General Permit for Discharges from Data Center Facilities," pp. 2, 6.

[133] EPA, "Water-Related Permits for Data Centers," accessed May 20, 2026, https://www.epa.gov/watersense/water-related-permits-data-centers#discharge. See also American Society of Civil Engineers (ASCE), "Engineers Often Need a Lot of Water to Keep Data Centers Cool," March 4, 2024. A publicly owned treatment works (POTW) is defined in 40 C.F.R. §403.3(q) to mean a treatment works as defined by Section 212 of the CWA, which is owned by a state or municipality. This includes devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature; sewers, pipes, or other conveyances if they convey wastewater to a POTW; and also the municipality that has jurisdiction over the indirect discharges to and from such a treatment works. See also Joint Legislative Audit and Review Commission, *Data Centers in Virginia, Report to the Governor and the General Assembly of Virginia*, December 2024, p. 133, https://jlarc.virginia.gov/pdfs/reports/Rpt598.pdf.

[134] 40 C.F.R. Part 403.

[135] 40 C.F.R. §403.2. EPA, "National Pretreatment Program Overview," https://www.epa.gov/npdes/national-pretreatment-program-overview.

[136] EPA, "National Pretreatment Program Implementation," https://www.epa.gov/npdes/national-pretreatment-program-implementation.

[137] 40 C.F.R. §403.3.

[138] 40 C.F.R. §§403.5-403.6. EPA, "National Pretreatment Program Overview," https://www.epa.gov/npdes/national-pretreatment-program-overview.

industrial user (IU), based on whether the IU is subject to national categorical pretreatment standards (a *categorical industrial user*) or meets the criteria for a *significant industrial user*.[139]

- *General* and *specific prohibitions* are national standards that apply to all IUs who discharge to a POTW.[140] The general prohibitions forbid the discharge of any pollutants to a POTW that can cause pass through or interference.[141] Specific prohibitions forbid the discharge of eight categories of pollutants that are potentially hazardous or likely to cause pass through or interference.[142]
- EPA establishes national categorical pretreatment standards (as well as limitations that apply to direct dischargers) through federally promulgated regulations called *Effluent Limitation Guidelines and Standards* (ELGs) on an industry-by-industry basis.[143]
- *Local limits*, which are site specific, aim to protect the POTW (including the collection system infrastructure), receiving waters, worker health and safety, and the POTW's sewage sludge disposal practices.[144] Local limits can be numeric or narrative effluent discharge limits and may include best management practices.

EPA has not established ELGs for data centers, so categorical pretreatment standards do not apply. Some public-facing information also indicates that data centers are not typically classified as significant industrial users because CWA regulations exclude cooling system blowdown from flow-based thresholds, even though those flows may still affect treatment processes.[145] Accordingly, data centers must comply with the general and specific prohibitions, and the control authority may develop local limits. POTWs impose local limits at the point of connection to the POTW's collection system.

Some control authorities report challenges in implementing their pretreatment programs to address data centers, due to the nature of data center discharges.[146] Data centers often have intermittent, high-volume "slug" loads during construction and maintenance phases and relatively low-strength discharges during routine operations.[147] In addition, some control authorities report insufficient information about the quality and quantity of the discharges they receive from data centers.[148] In some areas with higher densities of data centers, POTWs may not have the capacity to handle the flows sent to the facility by all the data centers within the sewershed.[149]

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[139] EPA, "Pretreatment Standards and Requirements—Applicability," https://www.epa.gov/npdes/pretreatment-standards-and-requirements-applicability.

[140] EPA, "Pretreatment Standards and Requirements—General and Specific Prohibitions," https://www.epa.gov/npdes/pretreatment-standards-and-requirements-general-and-specific-prohibitions.

[141] 40 C.F.R. §403.5(a).

[142] 40 C.F.R. §403.5(b).

[143] EPA, "Learn about Effluent Guidelines," https://www.epa.gov/eg/learn-about-effluent-guidelines.

[144] 40 C.F.R. §403.5(c). EPA, "Pretreatment Standards and Requirements—Local Limits," https://www.epa.gov/npdes/pretreatment-standards-and-requirements-local-limits.

[145] WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*. 40 C.F.R. §403.3(v).

[146] InsideEPA, "Data Center Discharges Strain Wastewater Treatment Systems in Boom Areas," March 31, 2026 (hereinafter InsideEPA, "Data Center Discharges Strain Wastewater Treatment Systems"). WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[147] WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[148] InsideEPA, "Data Center Discharges Strain Wastewater Treatment Systems." WEF, "Advancing Understanding of Data Center Effluent."

[149] InsideEPA, "Data Center Discharges Strain Wastewater Treatment Systems." EPA defines *sewershed* as the geographic area from which all the sewer flows to a single endpoint.

Slug discharges may lead to pass through or interference at a POTW if the facility does not have the capacity to handle the volume of the slug or if unanticipated pollutants in the discharge interfere with or pass through the treatment operations at the facility. If slug loads include pollutants that impact the effectiveness of a POTW's treatment processes, the load may lead to an *upset* (i.e., temporary noncompliance) at the POTW.[150] Slug discharges may also affect a POTW's ability to comply with its permit limitations for sewage sludge, a byproduct of the treatment process. For example, slugs following start-up or maintenance activities may include higher concentrations of metals compared with discharges from routine operations, which may lead to higher concentrations of metals in the POTW's sewage sludge.[151] Some control authorities also report that slug loads containing certain chemicals may corrode the POTW's infrastructure.[152]

Some control authorities report that with clearer communication and information from data centers about the quantity and quality of the effluent being sent to the POTW, they can take steps to help ensure compliance.[153] Options may include anticipating and adjusting treatment at the POTW to ensure pass through and interference do not occur; requiring the data center to treat its effluent before sending it to the POTW; requiring the data center to establish on-site storage to accommodate fluctuations in flow; or requiring the data center to dispose of the effluent through a different means, such as having it hauled off for disposal in an appropriate facility.[154]

Surface Waters

Some data centers discharge directly into nearby surface waters. If the receiving water is a water of the United States, then that data center, considered a *direct discharger*, would need to obtain an NPDES permit for its wastewater discharges. According to EPA, discharging directly to a surface water body is less common for data centers than for other industrial sectors, but may occur in locations without access to municipal wastewater infrastructure.[155] NPDES permits for data center wastewater discharges may include limits and monitoring requirements for a variety of pollutants and metrics depending upon the characteristics of the source water and site-specific operations. Examples include flow, temperature, pH, nutrients (such as phosphorus or nitrogen), chlorine, treatment additives, and metals.[156] Because EPA has not established ELGs for data centers (which, in addition to pretreatment standards, include technology-based-effluent limitations for direct dischargers), permit writers typically establish discharge limits for data centers based on their best professional judgment.[157]

Any data center with discharges authorized by an NPDES permit that is designed to withdraw at least 2 million gallons per day from waters of the United States for cooling purposes must also comply with technology-based performance requirements specified in CWA Section 316(b) for

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[150] WEF, "Advancing Understanding of Data Center Effluent." An *upset* (defined at 40 C.F.R. §122.41(n)) is an exceptional incident in which there is unintentional and temporary noncompliance with NPDES permit limitations because of factors beyond the reasonable control of the permittee.

[151] InsideEPA, "Data Center Discharges Strain Wastewater Treatment Systems." WEF, "Advancing Understanding of Data Center Effluent." WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[152] InsideEPA, "Data Center Discharges Strain Wastewater Treatment Systems."

[153] InsideEPA, "Data Center Discharges Strain Wastewater Treatment Systems." WEF, "Advancing Understanding of Data Center Effluent." WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[154] WEF, "Advancing Understanding of Data Center Effluent." WEF, *Water and Wastewater Utilities and Data Centers: Frequently Asked Questions*.

[155] EPA, "Water-Related Permits for Data Centers," https://www.epa.gov/watersense/water-related-permits-data-centers#discharge, accessed May 20, 2026.

[156] Ohio EPA, "Fact Sheet for NPDES General Permit for Discharges from Data Center Facilities."

[157] EPA, "Learn About Effluent Guidelines," https://www.epa.gov/eg/learn-about-effluent-guidelines.

cooling water intake structures.[158] These standards aim to ensure that the location, design, construction, and capacity of the structures reflect the best technology available to minimize harmful impact on the environment. Specifically, the standards aim to reduce injury and death of fish and other aquatic life caused by cooling water intake structures through impingement or entrainment.[159]

Alternative Disposal Methods

Data centers may also use alternative disposal methods that have the potential to trigger other regulatory frameworks, some of which may be at the state or local level. At the federal level, any facility that injects wastewater or treatment residuals into subsurface formations would need to obtain authorization under the Safe Drinking Water Act's Underground Injection Control program.[160] A data center with on-site storage or treatment systems (e.g., impoundments or lagoons) may need to comply with design, construction, operation, and permit standards, which may be federal or state standards, to protect groundwater and surface water quality.

Congressional Action

Which Bills Have Been Introduced in the 119th Congress That Address Data Centers and Water?

In the 119th Congress, some Members have introduced bills and proposed amendments that address data centers and a range of topics related to water availability, use, and discharge, among others.[161] As of July 30, 2026, at least one relevant provision had been enacted. Section 1531 of the National Defense Authorization Act for Fiscal Year 2026 (P.L. 119-60) expands the Department of Defense's "High Performance Computing Roadmap" to include estimates of additional electricity and water usage, and associated anticipated effects on the surrounding community, from the construction or expansion of data centers on military installations, to the extent that such estimates do not delay the roadmap's triennial updates.[162]

In both chambers, some Members have introduced bills that address data centers, and the bills have been referred to multiple committees. Most of these bills have not moved past the introduction stage. The measures with specific water provisions generally are bills that address data centers more broadly, and in some instances focus on data centers' energy consumption.

The identified bills propose to address data centers and water through a variety of mechanisms. Some of these bills include provisions to improve the available information about data center water use, to incentivize certain practices (e.g., water reuse) at data centers, or to limit or facilitate data center construction.

Table A-1 lists a selection of these bills and includes the legislation number and related bill(s); title; long title, relevant provision(s), and additional excerpts as needed; relevant federal agencies or other entities; House and Senate committees; and last action and date.

[158] 33 U.S.C. §1326(b). See also EPA, "Cooling Water Intakes," https://www.epa.gov/cooling-water-intakes.

[159] EPA, "Cooling Water Intakes," https://www.epa.gov/cooling-water-intakes.

[160] 40 C.F.R. Part 144.

[161] CRS identified this and other legislation on this topic by searching Congress.gov using the terms *data center(s)*, *datacenter(s)*, and *water.*

[162] Section 1531 of amends Title 10, Section 4001 note, of the *U.S. Code*.

In addition to the bills listed in **Table A-1**, some Members have introduced legislation that relates to "industrial" or "commercial" water use. While these bills may not specifically refer to data centers in their text, data centers may fall under these terms depending on the legislative text or agency interpretation. For example, as discussed in "Are Federal Reservoirs and Infrastructure Providing Water to Data Centers?," the Water Resources Development Act of 2026 (H.R. 9497), as ordered to be reported, would direct USACE to report on impacts of "new commercial and industrial water users" on USACE water resources development projects.

Appendix. Selected Bills on Data Centers and Water Use in the 119th Congress

Table A-1. Selected Bills on Data Centers and Water Use in the 119th Congress

(as of July 30, 2026)

Legislation No. (Related Bill)	Short Title	Long Title and Selected Excerpts	Relevant Agencies or Entities	Committee(s)	Latest Action (Date)
H.R. 2940	Advancing Water Reuse Act	*To amend the Internal Revenue Code of 1986 to allow an investment credit for certain water reuse projects.* Section 2 authorizes a 30% tax credit of the investment for any qualifying water reuse project, which, as defined by the bill, includes "a project which installs, replaces, or modifies an onsite water recycling system within an industrial, manufacturing, data center, or food processing facility."	—	House Committee on Ways and Means	Referred to committee (4/17/2025)
H.R. 5227	Unleashing Low-Cost Rural AI Act	*To conduct a study on the impact of artificial intelligence and data center site growth on energy supply resources in the United States, and for other purposes.* Section 2 states that "The Secretary of Energy shall designate a National Laboratory to conduct a study on the impact of artificial intelligence and data center site growth on energy supply resources in the United States"; and that the study should include "The impact of the co-location of artificial intelligence and data center sites on energy costs, energy supply, energy supply reliability, land-use, water-use, and cost to consumers."	Department of Energy (DOE)	House Committee on Science, Space, and Technology	Referred to committee (9/9/2025)
H.R. 5332 (§3 of H.R. 5332 is similar to §2 of S. 3269)	Liquid Cooling for AI Act of 2025	*To direct the Comptroller General of the United States to conduct a technology assessment focused on liquid-cooling systems for artificial-intelligence compute clusters and high-performance computing facilities, require the development of Federal Government-wide best-practice guidance for Federal agencies, and for other purposes.* Section 3 directs the U.S. Government Accountability Office (GAO) to initiate a review of liquid cooling research and development needs to include, among other topics, "An evaluation of coolant options, including water, water-glycol, and engineered fluids, materials compatibility, corrosion control, bio growth mitigation, filtration, deaeration, and fluid monitoring and management."	GAO	House Committee on Science, Space, and Technology; House Committee on Energy and Commerce	Referred to committees (9/11/2025)

Legislation No. (Related Bill)	Short Title	Long Title and Selected Excerpts	Relevant Agencies or Entities	Committee(s)	Latest Action (Date)
H.R. 6900 (see also H.R. 2940)	American Affordability Act of 2025	*To amend the Internal Revenue Code of 1986 to address the nation's cost-of-living crisis.* Among other provisions, Section 24001 authorizes a 30% tax credit of the investment for any qualifying water reuse project, which, as defined by the bill, includes "a project which installs, replaces, or modifies an onsite water recycling system within an industrial, manufacturing, data center, or food processing facility."	—	House Committee on Ways and Means; House Committee on Education and Workforce; House Committee on Energy and Commerce	Referred to committees (12/18/2025)
H.R. 6984	Data Center Transparency Act	*To require reports on the effects of data centers on air quality and water quality, and on electricity consumption by data centers.* Section 2 requires the U.S. Environmental Protection Agency (EPA), within six months of enactment, and then every three months after, to submit to Congress and post on its website a report that includes, among other elements, "(1) the total amount of water consumed by data centers located in the United States; (2) how such data centers reuse water, and the amount of such reused water; (3) how such data centers affect local water systems, including with respect to— (A) the availability of potable water; (B) whether the data center increased demand on local water utilities; (C) any potential data on service disruptions for other customers of local water utilities; (D) any changes in residential rates for water services; and (E) the type and amount of pollutants (as such term is defined in section 502(6) of the Federal Water Pollution Control Act (33 U.S.C. 1362(6))) discharged into water by data centers…"	EPA	House Committee on Energy and Commerce	Referred to committee (1/8/2026)
H.R. 7858	Data Center Community Impact Act	*To require the Secretary of Energy to conduct a study on the effect of data centers on communities of color and low-income communities, and for other purposes.* Section 3 requires DOE, in coordination with EPA, the Department of Commerce (Commerce), the Federal Energy Regulatory Commission (FERC), and the Council on Environmental Quality (CEQ) to conduct a study on "communities of color and low-income communities." Among other information, this study is to include "The amount of water consumed by data centers, including how such consumption affects local water supplies and drought-prone regions," and "How the cooling processes used by data centers affect wastewater systems."	CEQ, Commerce, DOE, EPA, FERC	House Committee on Energy and Commerce	Referred to committee (3/5/2026)

Legislation No. (Related Bill)	Short Title	Long Title and Selected Excerpts	Relevant Agencies or Entities	Committee(s)	Latest Action (Date)
H.R. 8033 (see also §2 of H.R. 9629)	No Harm Data Centers Act	*To ensure that American families are protected from the impacts of data centers on the electric grid, and for other purposes.* Section 5 directs EPA to seek to enter an agreement with the National Academies (NAS). Through this agreement, NAS shall "conduct an assessment of the impacts of data centers on the environment and public health," including on water consumption and water supply, among other topics; develop recommendations to mitigate such impacts; and submit the report and assessment to the relevant congressional committees.	EPA, NAS	House Committee on Energy and Commerce	Referred to committee (3/20/2026)
H.R. 8037	Protect American AI Act of 2026	*To limit the effect of litigation on the environmental application process for data centers and associated infrastructure.* Section 3(a) states, "A civil action relating to an environmental review under … the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.) … with respect to a data center or covered infrastructure shall not affect the validity of a permit, license, or approval issued for the data center or covered infrastructure that is the subject of the civil action." Section 3(b) states, "If, in a civil action described in subsection (a), the environmental review for a permit, license, or approval issued to the data center or covered infrastructure that is the subject of the civil action is found by the applicable court to violate … the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.) … (1) notwithstanding chapter 5 or 7 of title 5, United States Code (commonly referred to as the 'Administrative Procedure Act'), the applicable court shall not set aside or vacate the permit, license, or approval issued for the data center or covered infrastructure but instead remand the matter to the relevant Federal agency to resolve the violation; and (2) the relevant Federal agency shall continue to process all covered applications."	—	House Committee on Energy and Commerce; House Committee on the Judiciary	Referred to committees (3/24/2026)

Legislation No. (Related Bill)	Short Title	Long Title and Selected Excerpts	Relevant Agencies or Entities	Committee(s)	Latest Action (Date)
H.R. 9372	Data Infrastructure Energy Measurement and Standards Act	*To direct the Director of the National Institute of Standards and Technology to develop best practices for measuring data center energy use, study data availability for the purpose of improving energy demand forecasting capabilities, and for other purposes.* As introduced, Section 2 directs the National Institute of Standards and Technology (NIST), with DOE, to carry out a measurement research program "to inform the development or improvement of best practices, definitions, methodologies, procedures, and technical standards for the measurement of … water use by data centers … including the measurement of … water use resulting from training and inference of artificial intelligence models or other compute intensive information processes." This section further details specific activities to be included in the NIST program.	National Institute of Standards and Technology, DOE	House Committee on Science, Space, and Technology	Ordered to be reported in the nature of a substitute (amended) (6/25/2026)
H.R. 9419 (§201 of H.R. 9419 is similar to H.R. 2940 and H.R. 6900)	Power and Water for Families Act of 2026	*To facilitate the responsible development of data centers and related infrastructure, to protect existing ratepayers from the shifting of incremental infrastructure costs attributable to large-load facilities, to encourage investment in water reuse, and for other purposes.* Section 201 authorizes a 30% tax credit of the investment for any qualifying water reuse project, which, as defined by the bill, includes "a project which installs, replaces, or modifies an onsite water recycling system within an industrial, manufacturing, data center, or food processing facility, replaces the use of freshwater, such as groundwater, with recycled water from a municipal water provider for the production of goods or provision of services by the taxpayer, or builds or expands a municipal water recycling system for the purpose of securing recycled water for the production of goods or provision of services."	—	House Committee on Ways and Means; House Committee on Energy and Commerce	Referred to committees (6/24/2026)
H.R. 9442 (see also S.4214)	Artificial Intelligence Data Center Moratorium Act	*To impose a moratorium on the construction of new data centers until legislation is enacted that safeguards the public from the dangers of artificial intelligence.* Section 3 includes a requirement for DOE to submit quarterly reports on AI data centers that "shall include … the water usage of the artificial intelligence data center … the wastewater discharge and thermal outputs of the artificial intelligence data center."	DOE	House Committee on Energy and Commerce; House Committee on Foreign Affairs	Referred to committees (6/24/2026)

Legislation No. (Related Bill)	Short Title	Long Title and Selected Excerpts	Relevant Agencies or Entities	Committee(s)	Latest Action (Date)
H.R. 9629 (see also §5 of H.R. 8033)	Protecting Communities from Data Center Impacts Act of 2026	*To require an assessment of the environmental and public health effects of data centers, and for other purposes.* Section 2 directs EPA to seek to enter an agreement with the National Academies (NAS). Through this agreement, NAS shall "conduct an assessment of the impacts of data centers on the environment and public health," including on water consumption and water supply, among other topics; develop recommendations to mitigate such impacts; and submit the report and assessment to the relevant congressional committees.	EPA, NAS	House Committee on Energy and Commerce	Referred to committee (7/9/2026)
H.R. 9777	Protecting Ratepayers Act	*To require that new and existing data centers use off-grid power and water supplies, and for other purposes.* Section 3 prohibits private companies or private entities that own, operate, or maintain a data center or have plans to, from building, owning, operating, or maintaining a new data center or existing data center, unless the data center derives all "water, including back-up water, from an on-site water source, or some other water source or combination of sources separate from, and not deriving water from, the public water system."	—	House Committee on Energy and Commerce	Referred to committee (7/20/2026)

Legislation No. (Related Bill)	Short Title	Long Title and Selected Excerpts	Relevant Agencies or Entities	Committee(s)	Latest Action (Date)
H.R. 9825 (see also S.4213)	Data Center Water and Energy Transparency Act of 2026	*To require data center operators to submit to States or the Administrator of the Environmental Protection Agency and the Secretaries of Energy and Agriculture reports on data center energy and water use, and for other purposes.* Section 3 states that "each data center operator with 1[one] or more data centers [with a peak demand of not less than 25 megawatts] in a State shall submit to that State an annual report that" describes "total water use and the source of that water during each month of that calendar year; and annual average power usage effectiveness and water usage effectiveness; projected on-site energy use and water use for not less than the following 5 calendar years, which shall include proposals for reducing the energy use and water use of the data center and the increases in efficiency that are anticipated to result from those proposals." This section also requires new or expanded data centers to report to the state (or to DOE and EPA in areas where the state does not have the authority to collect such information) on "the projected energy use and water use and the sources of energy and water of the new data center during the first 5 calendar years after the data center begins operation; or (II) the projected increase in energy use and water use as a result of the expansion of a data center during the first 5 calendar years after completion of the expansion; and (ii) proposals for reducing the energy use and water use of the data center and the increases in efficiency that are anticipated to result from those proposals," and requires EPA and DOE to report annually on specified information, including water sources, supply, and associated community impacts, submitted by new and expanded data centers.	EPA, DOE	House Committee on Energy and Commerce	Referred to committee (7/22/2026)

Legislation No. (Related Bill)	Short Title	Long Title and Selected Excerpts	Relevant Agencies or Entities	Committee(s)	Latest Action (Date)
P.L. 119-60 (see also §1625 of the Senate-passed National Defense Authorization Act for Fiscal Year 2026 (S. 2296))	National Defense Authorization Act for Fiscal Year 2026	*To authorize appropriations for fiscal year 2026 for military activities of the Department of Defense, for military construction, and for defense activities of the Department of Energy, to prescribe military personnel strengths for such fiscal year, and for other purposes.* Section 1531 expands the Department of Defense's (DOD's) "High Performance Computing Roadmap" to include estimates of additional electricity and water usage, and associated anticipated effects on the surrounding community, resulting from the construction or expansion of data centers on military installations, to the extent that such estimates do not delay the roadmap's triennial updates.	DOD	Senate Committee on Veterans' Affairs; Senate Committee on Armed Services; House Committee on Armed Services; House Committee on Rules	Became Public Law (12/18/2025)
S. 3269 (§2 of S. 3269 requires a similar but broader GAO review as compared with §3 of H.R. 5332)	Liquid Cooling for AI Act of 2025	*To direct the Comptroller General of the United States to conduct a technology assessment focused on liquid cooling systems for artificial intelligence compute clusters and high-performance computing facilities, and for other purposes.* Section 2 directs GAO to initiate a review of liquid cooling research and development needs to include, among other topics, "An evaluation of coolant options, including water, water-glycol, and engineered fluids, materials compatibility, corrosion control, bio growth mitigation, filtration, deaeration, fluid monitoring and management, single-phase and 2-phase engineered fluids, testing for total thermal performance, heat transfer capacity, and energy efficiency."	GAO	Senate Committee on Energy and Natural Resources	Referred to committee (4/15/2026)
S. 3737	GROW SMART Act	*To amend the Reclamation States Emergency Drought Relief Act of 1991 to provide financial and technical assistance to eligible entities for the conduct of innovative approaches to voluntary water partnership agreements among multiple water users and projects conducted by individual agricultural entities, and for other purposes.* Section 2 defines "Qualified applicants" for the voluntary water partnership agreements to include, "1 [one] or more agricultural entities (including irrigation districts)"; and "1 [one] or more industrial or commercial entities, including data centers."	Bureau of Reclamation	Senate Committee on Energy and Natural Resources	Committee hearings held (3/17/2026)

Legislation No. (Related Bill)	Short Title	Long Title and Selected Excerpts	Relevant Agencies or Entities	Committee(s)	Latest Action (Date)
S. 3852	GRID Act	*To impose certain requirements on data centers to ensure the prioritization of residential ratepayers, and for other purposes.* Section 3 defines "utility" to include "a public water system (as defined in section 1401 of the Safe Drinking Water Act (42 U.S.C. 300f)); a treatment works (as defined in section 212 of the Federal Water Pollution Control Act (33 U.S.C. 1292)); and any other regulated utility that provides water, energy, or other essential services to a data center." Section 5 requires DOE to establish requirements for data centers to provide to the public estimates of utility usage for new and existing data centers, and publicly disclose any utility transaction or agreement, and utilities are to publicly disclose any transaction or agreements with data centers.	DOE	Senate Committee on Energy and Natural Resources	Referred to committee (2/11/2026)

Legislation No. (Related Bill)	Short Title	Long Title and Selected Excerpts	Relevant Agencies or Entities	Committee(s)	Latest Action (Date)
S. 4213	Data Center Water and Energy Transparency Act of 2026	*To require data center operators to submit to States or the Administrator of the Environmental Protection Agency and the Secretaries of Energy and Agriculture reports on data center energy and water use, and for other purposes.* Section 3 states that "each data center operator with 1[one] or more data centers [with a peak demand of not less than 25 megawatts] in a State shall submit to that State an annual report that" describes "total water use and the source of that water during each month of that calendar year; and annual average power usage effectiveness and water usage effectiveness; projected on-site energy use and water use for not less than the following 5 calendar years, which shall include proposals for reducing the energy use and water use of the data center and the increases in efficiency that are anticipated to result from those proposals." This section also requires new or expanded data centers to report to the state (or to DOE and EPA in areas where the state does not have the authority to collect such information) on "the projected energy use and water use and the sources of energy and water of the new data center during the first 5 calendar years after the data center begins operation; or (II) the projected increase in energy use and water use as a result of the expansion of a data center during the first 5 calendar years after completion of the expansion; and (ii) proposals for reducing the energy use and water use of the data center and the increases in efficiency that are anticipated to result from those proposals," and requires EPA and DOE to report annually on specified information, including water sources, supply, and associated community impacts, submitted by new and expanded data centers.	EPA, DOE, Department of Agriculture	Senate Committee on Energy and Natural Resources	Referred to committee (3/25/2026)
S. 4214	Artificial Intelligence Data Center Moratorium Act	*To impose a moratorium on the construction of new data centers until legislation is enacted that safeguards the public from the dangers of artificial intelligence.* Section 3 includes a requirement for DOE to submit quarterly reports on AI data centers that "shall include … the water usage of the artificial intelligence data center … the wastewater discharge and thermal outputs of the artificial intelligence data center."	DOE	Senate Committee on Commerce, Science, and Transportation	Referred to committee (3/25/2026)

Legislation No. (Related Bill)	Short Title	Long Title and Selected Excerpts	Relevant Agencies or Entities	Committee(s)	Latest Action (Date)
S. 4784	National Defense Authorization Act for Fiscal Year 2027	*An original bill to authorize appropriations for fiscal year 2027 for military activities of the Department of Defense, for military construction, and for defense activities of the Department of Energy, to prescribe military personnel strengths for such fiscal year, and for other purposes.* Section 1632 amends the DOD's "High Performance Computing Roadmap" (last amended by Section 1531 of P.L. 119-60) to expand the data centers for which DOD is required to estimate water and other resource usage to include those supporting military operations as well as data centers to be built or expanded. It also increases the frequency of the updates to the roadmap from triennial to annual, among other provisions.	DOD	Senate Committee on Finance	Motion to proceed to consideration of measure made in Senate (7/27/2026)
S. 5054	Data Center Tax Accountability and Disclosure Act of 2026	*A bill to exempt AI data centers from bonus depreciation and require data center operators to submit certain information relating to electricity and water use by data centers, and for other purposes.* Among other provisions, Section 3 defines a *covered data center* to "mean a data center, including a dual-use data center and a data center that is co-located or otherwise shares commercial space with a dedicated Federal data center, the power demand of which is 25 megawatts or more," excluding federal data centers. This section requires new and existing covered data centers to report annually on water quantity used during that year, the source of the water used, the annual average "water use effectiveness," and "any water rights, permits, or long-term supply agreements" held by the data center operator. This section authorizes states to elect to receive such reports (so-called "electing states") and authorizes EPA and DOE to receive such reports for covered data centers in states that do not elect to do so. This section requires "electing states" to share that information with EPA and DOE, annually. This section also requires EPA and DOE to make these reports publicly available on the agencies' websites. This section also directs the Office of Management and Budget to develop standards for water source, quantity, water use effectiveness, and supply agreements reporting for data centers that provide service "to both the Federal Government and 1 or more non-Federal interests."	EPA, DOE, Office of Management and Budget	Senate Committee on Finance	Referred to committee (7/21/2026)

Source: Compiled by CRS using Congress.gov, https://www.congress.gov/quick-search/legislation?wordsPhrases=%28%22data+center%22+OR+%22data+centers%22+OR+datacenter+OR+datacenters%29+AND+water&include=on&wordVariants=on&congressGroups%5B0%5D=0&congresses%5B0%5D=119&legislationNumbers=&legislativeAction=&sponsor=on&representative=&senator=&s=6.
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