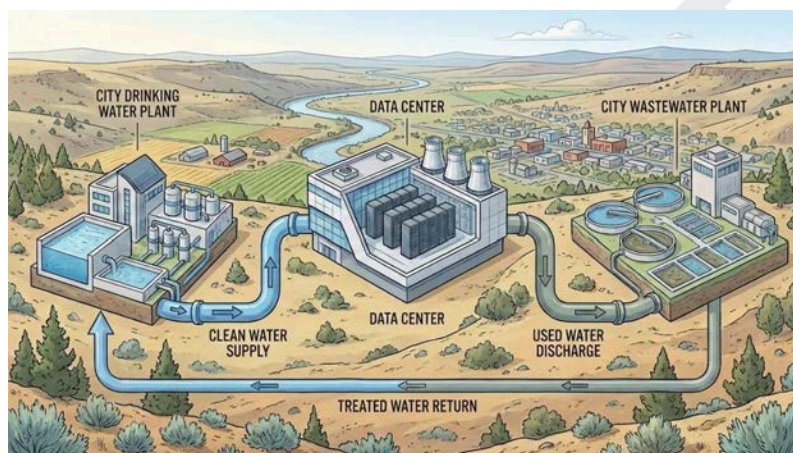


Data Centers and Water

[DIALOGUE DRAFT v 1.0]



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Last updated 5/1/26

Guide for Feedback

We consider this a “Dialogue Draft.” Its purpose is to inform policymakers in a dialogue on how best to consider the water opportunities and challenges with data centers in Oregon. Here are some questions to consider:

- Are there clear “types” of data centers that should be treated differently (e.g., hyperscale or smaller data centers, those with large incremental changes, or those located in overappropriated stream or groundwater basins)?
- What are the current water use reporting requirements for industrial users at the municipal level? There is currently no aggregate data on data center water use in Oregon?
- Water Efficiency Use (WUE) is the standard metric used to look at data center water use, but this loses a lot of nuance on off-site water use, total water used, and server efficiency. $WUE (L/kWh) = \text{Total Water Consumed} / \text{Total Energy Consumed by IT Equipment}$.
- How can Oregon best consider indirect (electricity use) water footprints of data centers?

- Are there other efforts to look at the broader community benefits provided by data centers (i.e., so we just focus on the ones connected to water)?
- Would it be useful in Section IV to include a separate subsection on how other states are considering fees or other funding structures to incentivize water conservation?

DRAFT

Water Policy and Innovation Service

Data Centers and Water

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About the Water Policy and Innovation Service

The Water Policy and Innovation Service is a joint project of Portland State University, Eastern Oregon University, and Southern Oregon University. The Service pulls expertise in water and policy to meet the needs of particular projects. The Service's goal is to provide objective, third party analysis of options and considerations to the collaboratives and decisionmakers wrestling with some of Oregon's toughest water policy challenges.

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i. Executive Summary

Depending on the source, there are anywhere from 123 to 136 data centers currently operational in Oregon, and those data centers can be large, industrial water users. There has also been significant growth in data centers over the last five years. A data center campus with 11 buildings (4.6 million square feet and using 1.7 MWh/year in Central Oregon) consumed about 70 million gallons in 2024.^{1,2} This is close to the 50 million gallons the Intel Aloha manufacturing campuses used in 2023,³ and equivalent to about the amount of water one half of a center pivot in Central Oregon growing alfalfa consumed in the same year (about 128 acres),⁴ or about as much water as 420 Prineville households in 2021.⁵ Data centers can vary greatly in the number of servers from small to hyperscale, the cooling technology used, their source of energy, and other factors that determine different water use requirements.

Data centers can provide significant economic benefits to the cities that house them, including investment in municipal water infrastructure, but also pose risks to long-term water availability or infrastructure if there is not adequate water or wastewater capacity. The Oregon Water Policy and Innovation Service was asked by the Statewide Data Center Advisory Committee (representing conservation, energy and climate, local government, and academic perspectives) to research policy options for managing data center water gathered from similar state and local policies used for data centers and other large-scale industrial users.

Table i.0 Oregon Water and Innovation Service

The Water Policy and Innovation Service (Service)⁶ is an offering of Portland State University's National Policy Consensus Center (NPCC), Eastern Oregon University (EOU), and Southern Oregon University (SOU). The Service completes analysis, designed to be third-party, objective, and useful, at the request of at least two parties with different perspectives of a statewide water policy issue that's of interest to both the state and Oregon communities.

Findings

¹ Meta. (2025). Environmental Data Index. Accessed at

https://sustainability.atmeta.com/wp-content/uploads/2025/10/Meta_2025-Environmental-Data-Index.pdf.

² This estimate assumes 80% of water withdrawn is consumed via evaporative cooling. From Li, P., Yang, J., Islam, M. A., & Ren, S. (2023). *Making AI Less "Thirsty": Uncovering and Addressing the Secret Water Footprint of AI Models*. Accessed at <https://doi.org/10.48550/arxiv.2304.03271>.

³ Intel. (2024). 2023-24 Corporate Responsibility Report. Accessed at

<https://csrreportbuilder.intel.com/pdfbuilder/pdfs/CSR-2023-24-Full-Report.pdf>.

⁴ Open ET. (2025). Filling the Biggest Data Gap in Water Management. Accessed at <https://etdata.org/>.

⁵ City of Prineville, (2023). City of Prineville, Oregon Water System Master Plan. Accessed at

https://cityofprineville.com/sites/default/files/fileattachments/city_council/page/18554/2023_water_master_plan_-_volume_1_reduced.pdf.

⁶ Water Policy and Innovation Service. (2026). Accessed at

<https://www.pdx.edu/policy-consensus-center/water-policy-and-innovation-service>.

If data centers are located where there is plentiful water now and into the future, many of the existing Oregon water quantity and quality policies may be adequate to address potential risks. Data centers often provide community water benefits to Oregon cities that house them. There may be ways to ensure cities have the information and capacity to negotiate those community benefits with companies in a consistent, fair manner. Data centers are an attractive economic opportunity because they require relatively few municipal services relative to local tax revenue generated.

However, data centers can be large water users, and present the most risk where there is rapid data center growth in water basins where A) water availability information is missing or outdated, B) there are not adequate protections for instream, agriculture, and other non-municipal and industrial uses, and C) the municipality or local water utility does not have adequate long-range plans or capacity to best expand water and wastewater service to meet data center and other demands. Some of the options for Oregon to consider include:

- Encourage siting data centers where there is enough water now, and expected into the future.
- Generate and update, on a regular basis, good information on current and long-range water and municipal revenue needs to meet immediate and growing water and infrastructure demands.
- Provide municipal leaders with the information to understand the effect any large incremental increases in water demand or wastewater discharge (not just data centers) may have on the capacity of public water and wastewater systems.
- Encourage the most efficient water use at data centers.
- Ensure community water benefits for the cities that house data centers.
- Encourage net positive water for the watersheds that house data centers.

I. Context & Problem Definition

Table 1.0 Problem definition

“Oregon is experiencing unprecedented demand from large-scale energy users including data centers and artificial intelligence, creating a need to establish clear siting criteria and assessment protocols before further development occurs across our state’s landscape. Proactive planning in partnership with local governments is essential to protect Oregon’s iconic forests and farmlands, sustain thriving local economies, and preserve affordability for all Oregonians.” Oregon Statewide Data Center Advisory Committee⁷

⁷ Oregon Statewide Data Center Advisory Committee. (2026). Charge. Accessed at <https://www.oregon.gov/energy/Get-Involved/Documents/Data-Center-Advisory-Committee-Charge.pdf>.

In Oregon, “All water within the state from all sources of water supply belongs to the public”⁸ and is to be managed for beneficial use (reasonably efficient use of water without waste for...the best interests of the people of the state).⁹ Those beneficial uses, from a water quality perspective, include fish and aquatic life, water contact recreation, fishing, domestic water supply, industrial water supply, boating, irrigation, livestock watering, aesthetic quality, wildlife and hunting, hydropower, and commercial navigation and transportation.¹⁰ The challenge is how to balance these uses as they grow and change.

Governor Kotek formed the Data Center Advisory Committee in early 2026 to make recommendations on a regulatory framework for data centers and other large-scale energy users that balance economic development with other resource demands, including water. The co-chairs of the Advisory Committee, who have experience in rural development, energy, and conservation, requested that the Water Policy Service explore:

- A conceptual framework for the water inputs to data centers (both directly for cooling, and indirectly via their sources of energy), water outputs (via industrial wastewater), and community water-use related benefits (via investments in water supplies, infrastructure, and other actions that benefit the communities where data centers are located more broadly); and
- Policy options for managing data center water gathered from similar state and local policies used for data centers and other large-scale industrial users.

The results presented in this report aim to provide policymakers with a “more complete deck” of options, and potential considerations, to inform dialogue and their actions on possible solutions for Oregon communities considering data centers.

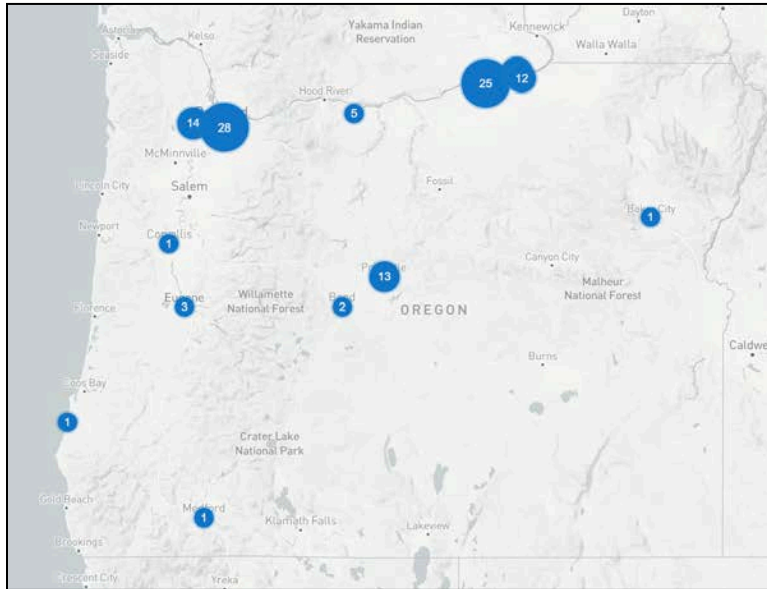
The water policy service does not recommend particular courses of action, nor does it make an assessment on the viability of these actions politically, or otherwise. The service has made this assessment to include policy options that *could* be viable and come from examples that are *comparable enough* to be worth presenting to Oregon policymakers.

Figure 1.0 Current Oregon data centers (<https://www.datacentermap.com/usa/oregon/>)

⁸ Oregon Revised Statutes § 537.110. (2026). Accessed at https://oregon.public.law/statutes/ors_537.110.

⁹ Oregon Administrative Rules § 690-300-0010. (2026). Accessed at <https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=332992>.

¹⁰ Oregon Department of Environmental Quality. (2026). Beneficial Uses of Oregon Waters. Accessed at <https://www.oregon.gov/deq/wg/pages/wq-standards-uses.aspx>.



There are anywhere from 123 to 136 data centers currently operational in Oregon depending on the source. There is currently no statewide source for information on data centers, so estimates can vary. Those centers have 37 different operators, and Amazon Web Services operates 47 facilities. The Google facility in the Dalles is the largest at 80 megawatts and 290,000 square feet.¹¹ Most of the data center facilities are located in the Portland metro area with other concentrations in the Boardman/Umatilla and Prineville areas.

II. Policy Research Methods and Approach

The findings in this report followed a series of process steps to define A) the policy problem/issue to be resolved, B) the kinds of options and considerations that would be useful to explore, and C) the format for delivering those findings. We explored potential case studies, relevant literature, and other published information. An initial conceptual framework for data center water inputs and outputs, and initial policy options, were reviewed by the Data Center Advisory Committee. Initial feedback from the Advisory Committee will lead to followup interviews and revisions to this Dialogue Draft.

The policy options were gathered from other states and local governments who have passed or are actively considering:

- Policies specific to data centers; and/or
- Policies to manage other large-scale industrial water users in rapidly growing industrial sectors (e.g., microchip and battery manufacturing; auto manufacturing; hydraulic fracking; and new power plant construction).

¹¹ Baxtel. (2026). Oregon Data Center Market. Accessed at <https://baxtel.com/data-center/oregon>.

III. Data Center Water Use and Community Water Benefits

3.1. Data center water use and wastewater

Data centers largely use potable water to cool the servers within their facilities. Some data centers in other states are recycling wastewater from nearby wastewater treatment plants. Data centers can use an air-cooled chiller system (which uses less water, but is more energy intensive) and/or water-cooled chillers with evaporative cooling (which uses more water, but is more energy efficient). There are some data centers in Oregon using groundwater, but very few relative to those tied into Public Water Systems.¹² Future technology may change how data centers use cooling water. The direct annual water use of a 4.6 million square foot data center campus with 11 buildings using 1.7 million MWh/year per year, is about equivalent to:

- 420 units of new housing; or
- Half to one center pivot of alfalfa growing in central Oregon.

Throughout this analysis, we pay attention to both the *total quantity* of a data center’s water use, the *incremental addition* of water use from one more data center, and the potential *cumulative addition* of water use from multiple data centers.

Table 3.1.a Sources of water for data centers

Isn’t a drop of water a drop of water? Different sources of water are governed by different policies, and have different considerations. In Oregon, most data centers are drawing their water from municipal drinking water sources. The quality of that water is closely regulated to protect human health by the Oregon Health Authority using the Safe Drinking Water Act and state rules.¹³ The right for a municipality to use the quantity of water is regulated by the Oregon Water Resources Department and permits may differ based on the mix of rivers and lakes, shallow groundwater that is recharged each year by rain and snow melt, and deep groundwater which often recharges more slowly. See Section 5 for more.

Cooling water is eventually discharged, usually to municipal wastewater treatment plants. The volume of that wastewater discharge could be a small percentage of the total (e.g., to a Clean Water Services in Hillsboro) or a large percentage (e.g., to the Dalles).

¹² Oregon Administrative Rule § 333-061-0020. (2026). Accessed at <https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/RULES/Documents/pwsrules.pdf>.

¹³ Oregon Health Authority. (2026). Oregon Drinking Water Services. Accessed at <https://www.oregon.gov/oha/ph/healthyenvironments/drinkingwater/pages/index.aspx>.

Table 3.1.b Potential contaminants currently regulated or not currently regulated

The federal Clean Water Act, and Oregon’s associated rules for implementing the Clean Water Act, regulates wastewater discharge. Any potential contaminant can be regulated when there is an impact to a beneficial use of a waterway (e.g., fishing, swimming, drinking water, wildlife habitat). An applicant for a Clean Water Act permit from Oregon Department of Environmental Quality (DEQ) needs to report the chemical contents of its wastewater. But most data centers will have their wastewater reported as part of an aggregated report from the municipal wastewater plants they discharge too. In feedback from DEQ, some of the chemicals that water quality staff were interested in knowing more about are listed below. Many of these may not be problematic for human health or wildlife, but instead could disrupt operations of the “good bacteria” used in municipal plants to remove pollutants.

- Anti-scalants, anti-foulants, and additives to keep the pipes clear of foulants
- Chlorinated type products, de-chlorination chemicals, potassium hydroxide, and potash that create high pH and that could strip metals off the equipment
- Citric acid, sodium hydroxide, sodium chloride, sodium hypochloride
- Any chemical reactions in water tied to proprietary products and how that water is managed
- Reverse osmosis cleaners, ultrafiltration backwash, other chemicals to clean filters or membranes

Processes that increase water temperature (e.g., cooling warm servers) may impact fish habitat and water quality.

According to a conversation with DEQ, temperature and trace amounts of metal are the most important to watch for fish and human health. These are currently regulated in Clean Water Act permits. According to a conversation with a former EPA and Indian Health Services engineer, water that is “too clean” with too few bacteria, nutrients, or with too high a PH is a concern for smaller wastewater plants using biological wastewater treatment. When a wastewater plant’s good bacteria get washed out or die off, this is called a “plant upset” and can take several weeks to correct.

The cooling water may not be chemically very different from the incoming potable water, except for some amount of residue from anti-corrosion chemicals, metals, or other elements picked up from the cooling infrastructure. These are the direct water inputs and outputs.

The most significant water footprint from data centers is tied to their sources of energy. Energy generated from hydropower, coal and gas-fired power plants, and other sources consumes water.

Table 3.1.c Ways to understand the energy mix for an industrial facility

Industrial facilities can estimate their average energy mix and associated sources using utility resource disclosures or EPA eGRID subregional generation data.¹⁴ Methodologies have been developed to estimate the indirect emissions footprints for facilities based on the electricity mixes they pull from regional Balancing Authorities (e.g., Bonneville Power Administration, Portland General Electric, Avangrid Renewables, or Idaho Power).¹⁵ Electricity generation’s operational water withdrawal and consumption rates vary by fuel type, cooling system, and geographic location.¹⁶ Such generation technology factors, plant-level water source, and cooling system characterizations are examples of how energy generation facilities are estimating their water footprints.¹⁷ Energy generation that requires cooling (e.g., natural gas and coal thermoelectric plants), consumes the most water. For example, if data centers for 14-25 gigawatts of new natural gas-generated electricity,¹⁸ then associated indirect water consumption would increase.

In 2023, it is estimated that power generation for data center electricity demand consumed 211 billion gallons of water nationwide based on regional energy mixes. Alternatively, direct on-site water consumption for cooling in 2023 is estimated to be 17 billion gallons, or only 8% of the total indirect and direct water consumption footprint (See Figure 3.1.a).¹⁹

Figure 3.1.a. U.S. data center usage: On-site vs off-site

¹⁴ US Environmental Protection Agency. (2026). eGRID Data Explorer. Accessed at <https://www.epa.gov/egrid/data-explorer>.

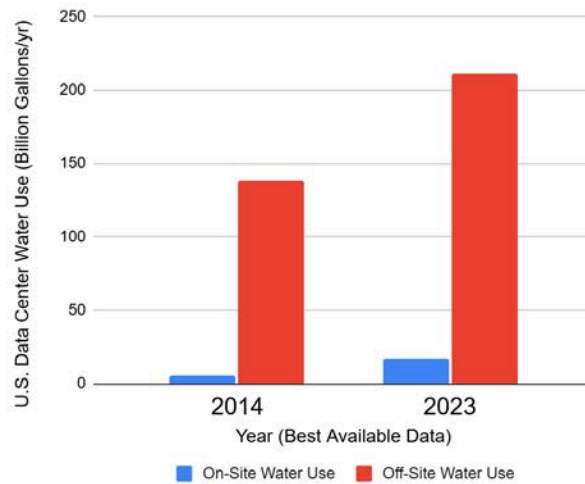
¹⁵ Siler-Evans, K., Azevedo, I. L., & Morgan, M. G. (2012). Marginal emissions factors for the U.S. electricity system. *Environmental Science & Technology*, 46(9), 4742–4748. Accessed at <https://doi.org/10.1021/es300145v>; de Chalendar, J. A., Taggart, J., & Benson, S. M. (2019). Tracking emissions in the US electricity system. *Proceedings of the National Academy of Sciences*, 116(51), 25497–25502. Accessed at <https://doi.org/10.1073/pnas.1912950116>; Hawkes, A. D. (2010). Estimating marginal CO2 emissions rates for national electricity systems. *Energy Policy*, 38(10), 5977–5987. Accessed at <https://doi.org/10.1016/j.enpol.2010.05.053>.

¹⁶ Macknick, J., Newmark, R., Heath, G., & Hallett, K. C. (2012). Operational Water Consumption and Withdrawal Factors for Electricity Generating Technologies: A Review of Existing Literature. *Environmental Research Letters*, 7(4), 045802. Accessed at <https://doi.org/10.1088/1748-9326/7/4/045802>.

¹⁷ A M Peer, R., & T Sanders, K. (2016). Characterizing cooling water source and usage patterns across US thermoelectric power plants: A comprehensive assessment of self-reported cooling water data. *Environmental Research Letters*, 11(12), 124030. Accessed at <https://doi.org/10.1088/1748-9326/aa51d8>.

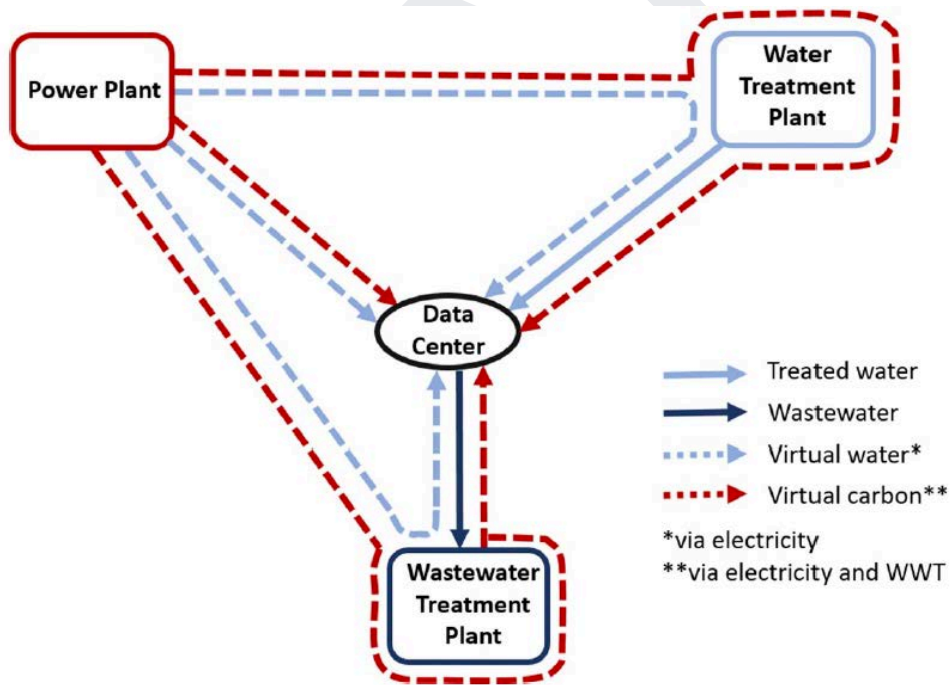
¹⁸ Olson, A., Burdick, A., Li, C., Zohrabian, A., Wheatle, B., de Vasconcellos Oporto, P., Somerset, H., and Jacobson, A. (2026). Resource Adequacy and the Energy Transition in the Pacific Northwest. *Energy and Environmental Economics*. Accessed at https://www.ethree.com/wp-content/uploads/2026/04/E3-NW-RA-Final-Report_040826.pdf.

¹⁹ Arman Shehabi, A., Smith, S.J., Hubbard, A., Newkirk, A., Lei, N., Siddik, M.A.B., Holecek, B., Koomey, J., Masanet, E., and Sartor, D. (2024). 2024 United States Data Center Energy Usage Report. Energy Analysis and Environmental Impacts Division, Lawrence Berkeley National Laboratory. Accessed at https://eta-publications.lbl.gov/sites/default/files/2024-12/lbnl-2024-united-states-data-center-energy-usage-report_1.pdf.



Water-cooled chillers can evaporate up to 80% of the water withdrawn. The water that recirculates can be reused 3-10 times.¹⁷ See Figure 3.1.b for a diagram visualizing a data center’s direct and indirect water footprint.

Figure 3.1.b Data center environmental footprint (from Siddik, Shehabi, and Marston, 2021²⁰)



²⁰ Siddik, M.A.B., Shehabi, A., and Marston, L. (2021). The environmental footprint of data centers in the United States. *Environ. Res. Lett.* (vol 16). Accessed at <https://iopscience.iop.org/article/10.1088/1748-9326/abfa1/pdf>.

3.2. Data center community water benefits

As data centers are sited in communities, there are often negotiations between a data center company and a local government to invest in the community (See Section 4.7 for more detail). Those investments might be focused on water and have included:

- Construction of new potable water storage and conveyance systems (e.g., aquifer storage and recovery, expanded surface water reservoir storage, new potable water treatment facilities, and updated conveyance pipes to reduce unwanted leaks and inflow);
- Construction of new wastewater treatment and conveyance (e.g., new wastewater treatment facilities or upgrades, new wastewater conveyance, and new conveyance for recycled wastewater for industrial and other uses); and
- Investment in replenishing instream water for ecosystems, fish and wildlife, and associated first foods.

Our research has found that most of the conversations around community benefits so far have been around A) ensuring additional tax and other revenue to support the community economically, B) workforce development and local procurement, and C) investing in additional infrastructure capacity to cover both the data center needs and future growth for the community.

3.3. Data center typology

Data centers are not all the same, and some key differences affect their water footprint, including:

- Size (i.e., number of servers and energy demand);
- Energy sources and the associated water footprint of those sources;
- Water sources and associated requirements;
- Server efficiency (amount of work or computation per unit heat);
- Utilization (i.e., the timing and duration of use based on roles for training AI models, storing data, etc.); and
- Cooling technology used (i.e., ambient air-cooled vs water-cooled, and using recycled or potable input water).

Several proposed policies from other states, referred to below, use data center size or water use thresholds (e.g. a “large” data center means consumptive use exceeds 100 million gallons/year). These thresholds are not standardized and are place-dependent. We were asked to differentiate policy options by different types of data centers, but we had trouble finding enough information to delineate clear types for different policy approaches.

IV. Options and Considerations for Oregon

For all of the options below, Oregon might consider looking at data centers with other large water and energy industrial users. It may make more sense to create policy across similar industrial users with similar water and energy footprints. In addition the technology data centers use is likely to change, and any state or local policy will likely need to adapt as these technologies change quickly. Any time water use is discussed, it is important to pay attention to both the total quantity of a data center's water use, the incremental addition of water use from one more data center, the potential cumulative addition of water use from multiple data centers, and the associated wastewater discharge linked to that water use. Any time beneficial uses are discussed, it is important to pay attention to both instream and out of stream uses.

4.1. Siting where there is enough water

In areas of abundant, clean water at the right times of the year, there may be few concerns about siting new data centers as long as existing supply infrastructure and wastewater treatment capacity is adequate or could be expanded to handle the new demands. The challenge in Oregon is that there are few areas where allocated water meets all the needs of existing and forecasted users, especially in summer where cooling demands may be highest for data centers.

Table 4.1 Water available on a water right is not the same as the amount of water available in the stream or ground

The Oregon Water Resources Department has issued water rights—the ability to use surface or groundwater—since passage of the 1909 water law. Many municipalities have older water rights. In some areas, water rights may have been issued prior to fully understanding A) how much water was available, or B) how much water was needed to support instream uses for fish and wildlife. As climate changes, water availability during different times of year may also be changing. Thus, making decisions solely on the “paper water” described in water rights, may not be as accurate as also paying attention to the actual, “wet water” physical volume of water available in streams and aquifers.

For instance, some of Oregon's current data center site clusters are located within or near Groundwater Restricted Areas (e.g., the Deschutes Groundwater Mitigation Program, Lower Umatilla Basin Groundwater Management Area, and the Dalles Critical Groundwater Area). Some states, such as Minnesota, require inter-agency coordination on large data center permits (i.e., where consumptive water use exceeds 100 million gallons/year or about 307 acre feet/year). For Minnesota, the Business First Stop is the coordinating agency among water

quantity and quality agencies.²¹ Given this challenge, there are several aspects of siting to consider:

- Has the municipality appropriately planned for the development of new industrial or large commercial water users?
- Does the municipality have adequate water rights to grow into as data centers, housing, and other development increases demand?
- Does the basin itself have adequate water supply to allow a municipality to develop its full water rights and still ensure enough water for agriculture, Tribes, the environment, and other water users?
- If a city wishes to pursue new water rights or permitted uses, what options and restrictions must it consider? (i.e. water right transfers, aquifer storage and recovery, mitigation credits etc.)
- What priority provisions during a drought exist and how does that affect non-municipal uses?
- Are there existing water quality issues in the sourcewater that could be concentrated by data center cooling processes?
- Are there important fish and wildlife resources or first foods that could be directly impacted?

4.2. Better reporting and transparency of water use and water quality

Precise information on data center water use is hard to come by. Facility-level industrial use (for data centers, breweries, metal fabrication, etc.) may be considered business information, and is usually rolled into a city's overall water consumption or wastewater discharge reporting. Some Oregon cities protect data center water use as confidential during real estate negotiations, but then treat water use as public information after that time. On the other hand, the City of The Dalles had claimed data center water use was a trade secret in response to a District Attorney's request to release the water use data. The Dalles later settled and began releasing water use data.²²

²¹ Minnesota 94th Legislative Session 2025-2026, H.F. 16, Data center regulatory bill. (signed into law). Accessed at <https://www.revisor.mn.gov/bills/94/2025/1/HF/16/versions/0/>.

²² Harris, E., and White, N. (March 23, 2026). Trust issues rise to the surface in The Dalles water dispute. Uplift Local: The Gorge. Accessed at <https://upliftlocal.news/trust-issues-rise-to-the-surface-in-the-dalles-water-dispute/>.

Data center water use reporting is currently driven by an individual corporation’s own sustainability or environmental stewardship policy. The information used for corporate sustainability is different from information needed to manage public water for beneficial use (e.g., public drinking water infrastructure and water quality for fish and wildlife). The reports that are made available vary in how metrics are reported. Indirect water use is usually unavailable.

Municipalities that have not fully developed their water rights are required to report their water use by customer class to the Oregon Water Resources Department in their Municipal Water Management and Conservation Plan. Those reports must include a comparison of the quantities of water used in each sector with the quantities reported in the water supplier’s previously submitted water management and conservation plan and progress reports.²³ For example, the City of Hillsboro reports its top 10 water users (personal communication).²⁴

There is also little information on the water quality of data center wastewater discharge, and whether that water quality changes over time or season if data centers use water differently. Most data centers discharge to publicly operated treatment works, which have extensive Clean Water Act reporting requirements. Yet, interviews for this report suggested an interest in knowing more about A) whether the discharge has too few nutrients and could disrupt a smaller wastewater plant’s biological systems, or B) what products, chemicals, or additives are used, to help identify emerging contaminants of concern. Both of these questions could be answered with national research or some monitoring study, or longer-term reporting requirements.

There is a growing policy interest to increase reporting on consumptive water use, but how would Oregon, or local cities, use that new information to inform decisions (e.g., permitting, allocation of tax incentives, or for long-range planning)? If Oregon is interested in more information on data center water use, it may also need to investigate how best to measure and report on water use to get the information it needs (See Table 4.2).

Table 4.2 Water-related reporting metrics

Metric	What to Know	Potential Use Case
<p><i>Water Usage Efficiency (WUE):</i> The amount of water consumed due to the on-site cooling process (liters) divided by IT equipment energy (kWh).</p>	<p>WUE is a common reporting metric that is useful to understand on-site water efficiency, however WUE cannot be used to compare two or more facilities as it does not account for server</p>	<p>How does a single facility’s water use fluctuate throughout a day or over a year? When is the peak demand for water?</p>

²³ Oregon Administrative Rules § 690-086-0140. (2026). OAR Chapter 690, Division 086. Accessed at https://oregon.public.law/rules/oar_690-086-0140.

²⁴ Joint Water Commission. (2021). Water Management and Conservation Plan. P48. Accessed at <https://www.hillsboro-oregon.gov/home/showpublisheddocument/27494/637717035197870000>.

	efficiency, utilization, total water consumption, or off-site water use. Neither does it address total water consumption.	
<i>Energy Source:</i> Hydropower, coal, natural gas, etc.	Recent studies show a data center’s energy source is one of the key determinants of its total water footprint.	When is a data center drawing power from a water intensive energy source, and does this coincide with peak demand?
<i>Total Withdrawal or Consumptive Use:</i> Withdrawal is the volume of water piped into a data center. Consumptive use is water evaporated away or otherwise made unavailable for discharge.	Total consumptive use may be the most useful for municipal-scale planning.	Compared to other users, how much water does a data center withdraw or consume?
<i>Water Use per Workload:</i> ²⁵ The total amount of on-site and off-site water consumed per query.	This metric is a step closer to standardizing water use across different data center types and sizes, but it may be difficult to implement.	How do servers of one data center use water compared to another data center of a different size and location?
<i>Water Usage Efficiency plus (WUE+):</i> The amount of water consumed due to the on-site cooling process (liters) and off-site energy generation divided by IT equipment energy (kWh). WUE+ also includes multipliers for water reuse efficiency (recycling) and regional water stress.	WUE+ may be an improvement on the traditional WUE metric. WUE+ includes off-site water use from energy supply and it captures the effect a data center has on local water availability. WUE+ was recently introduced at Open Compute Project’s Global Summit (2025) ²⁶ , but has not	How does the water use of two data centers of similar size located in different <i>geographies</i> compare? Size: On-site water consumption and IT energy capacity. Geography: Energy supply and local water stress.

²⁵ Lei, N., Lu, J., Shehabi, A., & Masanet, E. (2025). The water use of data center workloads: A review and assessment of key determinants. *Resources, Conservation and Recycling*, 219, Article 108310. Accessed at <https://doi.org/10.1016/j.resconrec.2025.108310>.

²⁶ Open Compute Project. (2025). Water Energy Nexus in Data Center Design. Accessed at https://www.youtube.com/watch?v=Qvw0OF_GCe0.

	been widely adopted by industry.	
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Prior to selecting preferred measures, Oregon would need to consider A) how reported measures would be used and why the State needs to know, B) which information is important prior to constructing a data center and which is important after operations begin, C) how they allow for comparisons, and D) how measures inform tradeoffs or other important decisions. Oregon’s Integrated Water Resources Strategy includes several actions to improve collection and accessibility of water measures that if more fully implemented would better address the need for the data needed to support decisions on data centers.²⁷

Data center water use reporting has emerged as a multistate legislative priority, with active measures pending in at least five states in 2026 and one administrative requirement taking effect in Texas.

- Oregon House Bill 3698 (2025) (not enacted)²⁸ would have required quarterly reporting of data center water and electricity use.
- California Assembly Bill 1577 (2026)²⁹ would require data center owners to submit monthly reports to the State Energy Commission on water use effectiveness (WUE), total water consumption.
- Pennsylvania House Bill 2246 (2026)³⁰ would require data centers projected to use more than 100,000 gallons/day to report maximum anticipated water use, water source, and water temperature discharged to the State Department of Environmental Protection prior to construction.
- Iowa House Bill 2447 (2026)³¹ would require quarterly reports to the Iowa Department of Natural Resources that include total water withdrawal categorized by specific need, water source, and water use effectiveness.
- Michigan Senate Bill 762 (2026)³² would require the state Public Service Commission to report the annual water consumption of data centers in a public water supply service area.

²⁷ Oregon Department of Water Resources . (2025). Oregon’s 2025 Integrated Water Resources Strategy. Accessed at https://www.oregon.gov/owrd/programs/Planning/IWRS/Documents/2025%20IWRS_w%20appendices.pdf.

²⁸ Oregon Regular Session 2025, H.B. 3698, Relating to data centers. (did not pass). Accessed at <https://olis.oregonlegislature.gov/liz/2025R1/Measures/Overview/HB3698>.

²⁹ California General Assembly 2025-2026, A.B. 1577, Data centers: monthly reporting. (in progress). Accessed at https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202520260AB1577.

³⁰ Pennsylvania General Assembly 2025-2026, H.B. 2246, Water Usage Reporting Requirements for Data Centers. (in progress). Accessed at <https://www.palegis.us/legislation/bills/2025/hb2246>.

³¹ Iowa House General Session 2025-2026, H.B. 2447, Water and energy use for data centers. (in progress). Accessed at <https://www.legis.iowa.gov/legislation/BillBook?ga=91&ba=HF%202690>.

³² Michigan Legislature 2025-2026, S.B. 762, Energy and water usage report requirements for data centers. (in progress). Accessed at <https://www.legislature.mi.gov/Bills/Bill?ObjectName=2025-SB-0762>.

- Georgia Senate Bill 421 (2026)³³ would bar local governments from entering into non-disclosure agreements with data center operators that prohibit disclosure of water and energy use.
- The Public Utility Commission of Texas in 2026 will require data centers to report direct water use, cooling technology, and energy sources. The Texas Legislature returns to session in 2027.³⁴

4.3. Maximum extent practicable technology requirements

For some time, federal environmental laws have used a standard of “maximum extent practicable” (MEP) to require technology and best practices for pollution prevention. The MEP standard considers technology cost, safety, and effort, as different from “best available technology” which is just the most effective technology currently available. Some states are requiring technology choices for data centers (i.e., Restrict the use of evaporative cooling to limit water consumption):

- Kansas Senate Bill 400 (2025) (in committee) introduces legislation barring large load data centers (20MW+) from evaporative cooling systems.³⁵
- South Carolina House Bill 4583 (2025) (in committee) would bar evaporative cooling systems and prohibit data centers from extracting groundwater or municipal water.³⁶
- The Southern Nevada Water Authority adopted a moratorium on new evaporative cooling systems in commercial and industrial buildings.³⁷

Oregon also participates in the National Pretreatment Program which allows the Oregon Department of Environmental Quality to approve local pretreatment programs with the legal authority to issue industrial user permits, conduct inspections of industrial and commercial sources, sample industrial discharges and enforce regulations.³⁸ As of 2022, Oregon had 27 approved pretreatment programs.³⁹

³³ George General Assembly 2025-2026, S.B. 421, The Data Center Transparency Act. (in progress). Accessed at <https://www.legis.ga.gov/legislation/72340>.

³⁴ National Ground Water Association. (2026). Texas regulators will require data centers to report water usage this spring. Accessed at <https://www.ngwa.org/detail/news/2026/02/18/texas-regulators-will-require-data-centers-to-report-water-usage-this-spring>.

³⁵ Kansas General Session 2025-2026, S.B. 400, Requiring data centers to use closed-loop cooling systems to mitigate water consumption. (in progress). Accessed at <https://www.kslegislature.gov/bills/SB400/>.

³⁶ South Carolina General Assembly 126th Session 2025-2026, H. 4583, The South Carolina Data Center Responsibility Act. (in progress). Accessed at https://www.scstatehouse.gov/sess126_2025-2026/bills/4583.htm.

³⁷ Southern Nevada Water Authority. (2025). Understand Laws and Ordinances. Accessed at <https://www.snwa.com/conservation/understand-laws-ordinances/index.html>.

³⁸ Oregon Department of Environmental Quality. (2026). Industrial Pretreatment. Accessed at <https://www.oregon.gov/deq/wg/programs/pages/industrial-pretreatment.aspx>.

³⁹ Oregon Department of Environmental Quality. (2026). Oregon Approved Industrial Pretreatment Programs. Accessed at <https://www.oregon.gov/deq/FilterDocs/ODEQPARData.pdf>.

4.4. Incentivizing energy and water use efficiency

Requiring particular technologies can be inefficient. For example, lack of flexibility may preclude superior technologies or practices. This may be important given the variety of site conditions present and developing nature of this industry. Technology requirements can also become outdated as technology advances. Policies can set outcome expectations, but provide flexibility and/or incentives for data centers to innovate around technology choice (e.g., utilize direct-to-chip cooling to limit water consumption) or operational choices (e.g., flex time of use, ramping up and ramping down utilization, etc.). Some examples include:

- Virginia Senate Bill 417 (2026) introduces a provision that data centers can receive funds from grant programs only if cooling systems use treated wastewater. To be considered in 2027.⁴⁰
- Colorado Senate Bill 25-280 (2025) (not enacted). The Colorado Data Center Development and Grid Modernization Act, which died in chamber, would have established an incentive program with strong emphasis on environmental stewardship: tax incentives only available to developers who follow water stewardship strategies and conduct detailed infrastructure assessments addressing availability.⁴¹
- Minnesota House Bill 16 (2026) requires consideration of water conservation technology, "...including but not limited to using water efficient fixtures and practices, recycling water before discharging, partnering with local water utilities to use discharged water from the data center, using reclaimed water, installing closed-loop systems, and supporting water restoration and replenishment in local watersheds."⁴² Minnesota also requires large data centers to achieve certification from one of a list of green building standards.

4.5. Accurate forecasting and revenue for municipalities to meet water and infrastructure demands

Water affordability, and utility rate affordability generally, are important issues in Oregon and across the country. Data centers, especially if their water and wastewater use is a large percentage of a city's total use, could be both an opportunity or a challenge to water affordability. The question is whether cities get enough advanced notice and/or support to accurately incorporate data center needs into their long-range water forecasts. Updating physical capacity analyses allows cities to evaluate how they can serve data centers and generate the revenue they need to cover the cost of those services without additional burden on existing residents and businesses. Some of the information that could help municipalities with their physical capacity and critical component analyses for water infrastructure might include:

⁴⁰ Virginia Legislature 2026 Regular Session, S.B. 417, Cloud Computing Cluster Infrastructure Grant Fund; reclaimed water usage. (in progress). Accessed at <https://lis.virginia.gov/bill-details/20261/SB417>.

⁴¹ Colorado 75th General Assembly 2025, S.B. 25-280, Data Center Development & Grid Modernization Act (did not pass). Accessed at <https://leg.colorado.gov/bills/sb25-280>.

⁴² Minnesota H.F. 16, 2026. See note 21.

- Anticipated large changes in volumetric water demand or discharge that could trigger needs to expand water conveyance, storage, or treatment infrastructure capacity;
- The minimum and maximum water demands to understand what water delivery capacity is needed (e.g., peak instantaneous need, intra-day variation, seasonal variation, and gross volumetric demand); and
- Volume, timing, and chemical composition of wastewater discharge.

Municipalities may also want to break industrial and commercial water users into different rate categories. For example, the City of Hillsboro conducts a cost-of-use study every five years so each customer category can be charged based on how they use the water system.⁴³ Similarly, those studies can demonstrate whether one customer category is subsidizing the use of another customer category.

Some examples of what other states are doing include:

- Virginia introduced Senate Bill 1449 (2025), which would allow a locality to require developers of high energy facilities to complete site assessments on ground and surface water impacts before rezoning applications or obtaining special use permits; this bill was vetoed.⁴⁴
- Iowa House Bill 2261 (2025), which would create a new customer class for water utilities supplying facilities requiring at least 20MW of power with separate rates, charges, and schedules.⁴⁵

States and local governments have also looked ahead toward decommissioning. Several states have decommissioning requirements for energy generation facilities (oil, gas, wind, and solar). Payne County, Oklahoma passed a resolution encouraging the state legislature to require performance bonds equal to the cost of construction to cover costs with decommissioning if needed.⁴⁶ Similar to decommissioning, data centers may switch technologies (e.g., from evaporative to closed loop cooling) that could create large, incremental decreases in water demand and wastewater discharges. Those decreases could create a rate burden on remaining water users if the municipality has not planned to decrease infrastructure capacity.

⁴³ HDR. (2024). City of Hillsboro Water Rate Study. Accessed at <https://hillsboro-oregon.civicweb.net/document/241007/>.

⁴⁴ Virginia General Assembly 2025, S.B. 1449, Data centers; site assessment for high energy use facility. Accessed at <https://lis.virginia.gov/bill-details/20251/SB1449>.

⁴⁵ Iowa 91st General Assembly, H.F. 2261, Customer classes for large energy use facilities. Accessed at <https://www.legis.iowa.gov/legislation/BillBook?ba=HF%202261&ga=91>.

⁴⁶ Peters, C. (January 30, 2026). Payne County passes resolution urging decommissioning bonds for wind, solar, data centers. The Stillwegian. Accessed at <https://www.thestillwegian.news/payne-county-passes-resolution-urging-decommissioning-bonds-for-wind-solar-data-centers/>.

4.6. Mitigation and “water positive” pledges

Several major companies operating data centers (e.g., AWS, Microsoft, and Meta) have voluntarily committed to be water positive across their value chains by 2030.⁴⁷ This means that companies are promising to replenish more water than they consume. This might include watershed restoration to get more water instream, or other actions to contribute more water. It is less clear on how localized those efforts might be. In Hermiston, AWS funded an \$18 million aquifer storage and recovery project that meets the needs of AWS, but also will store an additional three billion gallons of winter and springtime Columbia River water over 25 years that can be used by residents, farmers, and to benefit fish in summer months.⁴⁸ There have been some critiques that the water positive pledges do not account for the indirect water usage tied to energy use.⁴⁹ These investments are not guided directly by any state or local policy.

Oregon has experience with water quantity mitigation programs. The Deschutes River Groundwater Mitigation Program requires new groundwater users to provide additional instream water prior to getting permission to pump water.⁵⁰ The City of Prineville used that Mitigation Program to expand its aquifer storage and recovery capacity by acquiring a water right for the release of up to 5,100 acre-feet (AF) of stored water from Prineville Reservoir for downstream fish and wildlife use. These mitigation credits are part of the federal Crooked River Collaborative Water Security and Jobs Act of 2014.⁵¹ Similarly, East Bay Municipal Water District in California requires new planned communities to fully offset projected water demands through on-site and off-site conservation.⁵²

4.7. Ensuring community water benefits

Data centers are often described as the “invisible backbone” of the digital economy. While they have a small physical footprint in terms of personnel relative to their size in square footage, their economic and community impact is documented across several key areas: tax revenue, high-wage job creation, and infrastructure modernization. Each one of us uses data centers each

⁴⁷ Satariano, A., Mozur, P., and Weise, K. (February 1, 2026). Microsoft Pledged to Save Water. In the A.I. Era, It Expects Water Use to Soar. New York Times. Accessed at <https://www.nytimes.com/2026/01/27/technology/microsoft-water-ai-data-centers.html>.

⁴⁸ Kane, M. (October 10, 2025). Hermiston water project to benefit Amazon, community. Hermiston Herald. Accessed at <https://hermistonherald.com/2025/10/10/hermiston-water-project-to-benefit-amazon-community/>.

⁴⁹ Brightmore, D. (September 4, 2024). AWS data centres’ “water positive” pledge isn’t greenwashing, but it is misleading. Interface Media. Accessed at <https://interface.media/blog/2024/09/02/aws-data-centres-water-positive-pledge-isnt-greenwashing-but-it-is-misleading/>.

⁵⁰ Oregon Water Resources Departments. (2026). Deschutes Groundwater Mitigation Program. Accessed at <https://www.oregon.gov/owrd/programs/waterrights/permits/deschutesgroundwatermitigation/pages/default.aspx>.

⁵¹ City of Prineville, 2023. See Note 5.

⁵² Christiansen, B. (2015). Water Offset Policies for Water-Neutral Community Growth. Alliance for Water Efficiency. Accessed at <https://allianceforwaterefficiency.org/wp-content/uploads/2019/06/Water-Offset-Policies-for-WaterNeutral-Community-Growth150126.pdf>.

and every day, whether we realize it or not. Data centers have a relatively high service to revenue ratio. For example, in Loudoun County, Virginia, for every \$1 in public services provided to data centers, the county receives approximately \$26 in tax revenue.⁵³

Traditionally, municipalities have incorporated new water users into their water, sewer, and stormwater services by charging system development charges.⁵⁴ Some states are defining large data centers as “large load users” and creating different fee structures, conditioned tax incentives, etc., since existing system development charges may not fully account for the infrastructure costs of large data centers. In Oregon, some municipalities negotiate supply agreements with large industrial water users outside of the normal system development charges to ensure those new users cover the full cost of the infrastructure (See examples below).

How can communities that house data centers ensure their communities benefit? There are multiple community benefit possibilities, but this report focuses specifically on community *water* benefits, which might include:

- Additional tax and other revenue to cities;
- Investments in workforce development (infrastructure and beyond);
- Upgrades to current water, wastewater, and stormwater infrastructure that benefits both data centers and the broader community;
- Agreements that generate investment in river, riparian, or other aquatic habitat;
- Agreements that generate additional water availability for the environment, agriculture, and other water users.

Some ways Oregon communities have worked with data centers to create community benefit include:

- Prineville implemented a five percent Franchise Fee on electricity usage.⁵⁵ Because data centers consume a lot of power, this generated \$8.19 million in 2024 alone, accounting for 63% of the city’s entire tax base.⁵⁶

⁵³ Northern Virginia Technology Council. (2024). Virginia Data Centers Supported 78,140 Jobs and \$31.4 Billion in Economic Output in 2023. Accessed at <https://www.nvtc.org/press-releases/virginia-data-centers-supported-78140-jobs-and-31-4-billion-in-economic-output-in-2023>.

⁵⁴ League of Oregon Cities. (2020). System Development Charges. Accessed at <https://www.orcities.org/resources/reference/topics-z/details/system-development-charges>.

⁵⁵ City of Prineville, Oregon. (2021) Ordinance No 1268 - Granting an Electric Utility Franchise and General Utility Easement. Accessed at <https://www.cityofprineville.com/ordinances/ord-no-1268-granting-electric-utility-franchise-and-general-utility-easement>.

⁵⁶ City of Prineville, Oregon. (2024) Annual Comprehensive Financial Report Year Ending July 30, 2024. Accessed at https://cityofprineville.com/sites/default/files/fileattachments/finance/page/92/city_of_prineville_acfr_fy_2024_fi nal_linked.pdf. Page 33.

- Companies funded Prineville’s Aquifer Storage and Recovery (ASR) system⁵⁷, which helps manage the local water supply during droughts.⁵⁸
- Meta has invested over \$2 million directly into the Crook County School District for STEM and technology.⁵⁹
- Google invested \$28 million to build a municipal water treatment and storage system. Upon completion, Google transferred ownership of the system and its associated water rights to the City of The Dalles, providing the community with 100 million additional gallons of water capacity annually.^{60 61}
- Under a 2021 Strategic Investment Program (Business Oregon) agreement, Google committed to a “Total Annual Payment Amount” which is the greater of 50% of what property taxes would have been or a minimum of \$3 million per year.⁶² By the end of current abatement periods, the community is projected to have received over \$45 million in direct payments.⁶³ In 2025, Google’s newest data center generated \$9.8 million in taxes and fees, which far exceeded expectations for its first year of operations.⁶⁴
- In Morrow and Umatilla counties, AWS returns up to 96% of its cooling water—treated and cooled—to local farmers for free, supporting irrigation for corn, soybean, and wheat crops in a water-stressed region. AWS funded a specialized Data Center Technician Training Program at Blue Mountain Community College, including \$100,000 in annual scholarships.⁶⁵

⁵⁷ Meta (2022) Volumetric Water Benefits 2021. Accessed at https://sustainability.fb.com/wp-content/uploads/2022/08/Meta_2021_Volumetric_Water_Benefit_Report.pdf. Page 6.

⁵⁸ Cascade Business News. (2024) “We’re All Pulling the Chain in the Same Direction,’ Praises Prineville’s Planning Director” Accessed at <https://cascadibusnews.com/were-all-pulling-the-chain-in-the-same-direction-praises-prinevilles-planning-director/>

⁵⁹ Crook County School District (2026) Website. Accessed at <https://www.crookcountyschools.org/school-board/>.

⁶⁰ City of The Dalles, Oregon (2026) Website. Accessed at https://www.thedalles.org/news_detail_T4_R195.php.

⁶¹ Oregon Business (2025) Google Advances Commitment to The Dalles, Launching Sustainable Water Storage System. Accessed at <https://oregonbusiness.com/google-advances-commitment-to-the-dalles-launching-sustainable-water-storage-system/>.

⁶² Columbia Community Connection News (2021) TD City, County to take Testimony on Google Investment. Accessed at <https://columbiacommunityconnection.com/the-dalles/td-city-county-to-take-testimony-on-google-deal>.

⁶³ City of The Dalles, Oregon. (2026) Enterprise Zone & Strategic Investment Program Agreements with Google. Accessed at https://www.thedalles.org/business/google_data_centers/ezandsipagreements.php.

⁶⁴ Columbia Community Connections News (2026) Critics Question Google Tax Breaks as New Data Center Delivers \$9.8M Locally. Accessed at <https://columbiacommunityconnection.com/the-dalles/critics-question-google-tax-breaks-as-new-data-center-delivers-98m-locally>.

⁶⁵ Association of Oregon Counties. (2023) Amazon Working with Local Utility in Oregon to Power AWS Data Centers with Clean Energy. Accessed at <https://oregoncounties.org/amazon-working-with-local-utility-in-oregon-to-power-aws-data-centers-with-clean-energy/#:~:text=In%20addition%20to%20AWS%20investing,power%20AWS%20operations%20in%20Oregon.>

- In Hillsboro, companies have agreed to purchase at least 10% of their services from local vendors.⁶⁶

The Alliance for the Great Lakes produced a guide that includes some options for community benefit agreements with data centers, and case studies from Lancaster, Pennsylvania; Detroit and Southeast, Michigan; Chicago Metropolitan Region Illinois; Ohio and Wisconsin Urban area.⁶⁷ Oregon might consider some guidelines for community benefits, getting information municipalities need to understand the cost of large, incremental increases in water use, and what happens when data centers reduce their water use or close down.

4.8. A role for recycled water

Currently, few data centers use recycled wastewater as the sourcewater for cooling. There are also few data centers that land-apply their discharge water, or make it available for irrigation. However, there is interest in both of these options. In Virginia, Senate Bill 417 (2025) (in progress) proposes to condition state data center grants on using recycled water.⁶⁸ There are different pros and cons for using recycled water whether A) data centers are using reclaimed wastewater from municipal or other industrial discharges, or B) agriculture or other industries are using data center wastewater.

Data centers using recycled water

Using recycled water can sometimes reduce the volume of water diverted into Public Water Systems and then delivered to data centers. Using recycled water likely requires additional delivery infrastructure to move wastewater to the data center for use. The cooling process could concentrate whatever pollutants are in the source water, and add additional thermal load warming the water. Sometimes, wastewater discharges are important sources of summertime flows for streams, and diverting that water for recycled uses might limit water availability for downstream uses.

Using data center wastewater for other uses

Data center wastewater could be used to supplement water for agriculture, or could be used again for compatible industrial uses. That wastewater could also be injected into aquifer storage and recovery systems to be used later. Current Oregon rules govern all these possible uses, and there are pros and cons. Applying data center wastewater for agriculture or to other land uses does not necessarily reduce the impact of diverting that water from streams in the first place. Data centers might need to treat their wastewater before any application. For example,

⁶⁶ City of Hillsboro, Oregon (2026). Enterprise Zone Program webpage. Accessed at <https://www.hillsboro-oregon.gov/our-city/departments/economic-development/choose-hillsboro/enterprise-zone-program>.

⁶⁷ Volzer, H., and Iturbide-Chang, M. (2026). A regional playbook for managing data center impacts in the Great Lakes: Education, tools, policies, and community actions. Alliance for the Great Lakes. Chicago, IL. Accessed at https://greatlakes.org/wp-content/uploads/2026/03/AGL_DataCenter_Playbook_2026_Final.pdf.

⁶⁸ Virginia SB 417. See note 40.

injecting wastewater into groundwater requires that water meet drinking water standards. Another consideration is that wastewater application to farm fields or infiltration basins could have a connection between shallow groundwater and nearby surface waters that create a “functional equivalent” to direct discharge to surface water that requires additional review under the Clean Water Act.⁶⁹

4.9. Moratoriums on new data center construction

There have been calls for moratoriums on new data center construction in some places until more information can be gathered. Georgia (introduced bill), Maine (passed and vetoed), Maryland (introduced), Michigan (introduced), Minnesota (introduced), New Hampshire (did not pass), New York (introduced), Oklahoma (introduced), Pennsylvania (introduced), South Carolina (introduced), South Dakota (introduced), Vermont (introduced), Virginia (continued), and Wisconsin (did not pass) have all considered legislation with some forms of temporary moratoriums.⁷⁰ In Oregon, municipalities can adopt moratoriums on construction or land development under certain conditions (e.g., shortage of public facilities and/or housing and economic needs have been met).⁷¹ There may be legal limits to applying moratoriums on specific types of businesses.

⁶⁹ County of Maui, Hawaii vs. Hawaii Wildlife Fund et. al., 140 S. Ct. 1462 (2020). Accessed at https://www.supremecourt.gov/opinions/19pdf/18-260_jifl.pdf.

⁷⁰ National Conference of State Legislatures. (April 27, 2026). Which States Are Banning Data Centers? Accessed at <https://www.ncsl.org/fiscal/which-states-are-banning-data-centers>.

⁷¹ Oregon Revised Statutes § 197-520. (2026). Accessed at https://oregon.public.law/statutes/ors_197.520.

V. Options Within the Oregon Context

Oregon has land use, water quantity, and water quality policies and programs that may be able to manage much of the increased demand presented by data centers—if those policies are used and agencies overseeing them have needed capacity. Some of those programs are summarized below.

Forecasting long-range municipal and industrial water needs

Oregon’s statewide land use planning system, overseen by the Department of Land Conservation and Development, guides long-range planning and includes:

- Goal 9 and Economic Opportunity Analyses (EOA) to ensure appropriate zoning for planned economic growth. This includes identifying “target industries” that will require the service of public facilities.⁷²
- Goal 11 and public facilities plans to ensure 20 years of service for residential growth and target industries.⁷³

The Oregon Water Resources Department requires cities to create a Water Management and Conservation Plan that ensures existing water rights can support the Goal 11 public facilities plan as a part of the municipal water permit extension process. In practice, the requirements for water availability, serviceability, and allocation from these planning documents are combined into a single Master Water Plan that also includes requirements from the Oregon Health Authority for safe drinking water. The interplay between these planning efforts is designed to ensure cities have a well-informed 20 year plan, with periodic review, to meet forecasted residential and industrial growth. Yet, some cities and counties have limited planning capacity to keep these plans current. The Portland State Population Research Center provides regular population forecasts,⁷⁴ but industrial growth forecasts are harder to predict. Industrial growth forecasts are based on current zoning, project proposals from developers, and preferences of city leaders.

Providing information on water availability and access to water rights

Oregon Water Resources Department maintains the Water Availability Reporting System⁷⁵ for new water right applications for most surface water. This system is based on outdated streamflow data and is in the process of modernization. Other information on groundwater

⁷² Department of Land Conservation and Development. (2026). Goal 9: Economic Development. Accessed at <https://www.oregon.gov/lcd/OP/Pages/Goal-9.aspx>.

⁷³ Department of Land Conservation and Development. (2026). Goal 11: Public Facilities and Services. Accessed at <https://www.oregon.gov/lcd/OP/Pages/Goal-11.aspx>.

⁷⁴ Portland State University Population Research Center. (2026). Population Forecasts. Accessed at <https://www.pdx.edu/population-research/population-forecasts>.

⁷⁵ Oregon Water Resources Department. (2026). Surface Water Availability Reporting System. Accessed at <https://www.oregon.gov/owrd/programs/streamslakessanddams/surfacewater/pages/surface-water-availability.aspx>.

basin volumes or in-stream water needs may be incomplete or outdated. The Oregon Water Data Portal is also a new platform designed to make statewide water data more accessible.

In droughts, there may need to be conversations about who has access to which water. With scarce water, Oregon's system of prior appropriation ensures older/more senior water right holders get their water before more recent/junior water right holders. If a city does have enough water rights to support industrial growth, they can acquire additional water using tools such as water right transfers, aquifer storage and recovery, and mitigation credits.

Protecting water quality

The Oregon Health Authority implements the federal Safe Drinking Water Act to protect the quality and safety of drinking water—especially water provided by public water systems.⁷⁶ The Oregon Department of Environmental Quality (DEQ) issues water quality permits for activities such as industrial and construction stormwater management, pretreatment of industrial wastewater discharged to publicly operated treatment works, and the discharge from those public wastewater plants.⁷⁷

For any regulated contaminant, DEQ has determined there is treatment technology, which is how DEQ sets technology-based effluent limits. National Pollution Discharge Elimination System (NPDES) discharge permits require whole effluent toxicity monitoring, which can address many of the additives listed above according to an interview with DEQ staff. Water Pollution Control Facility (WPCF) permits for industries with discharge directly to surface waters do not have this requirement.

⁷⁶ Oregon Health Authority. (2026). Oregon Drinking Water Services. Accessed at <https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/Pages/index.aspx>.

⁷⁷ Oregon Department of Environmental Quality. (2026). Water Quality Permits. Accessed at <https://www.oregon.gov/deq/wg/wqpermits/pages/default.aspx>.

VI. Next Steps and Conclusion

Oregon experienced a wave of data center development before fully knowing what the future of AI and hyperscale data centers might demand from Oregon electricity, water, and other resources. Those data centers provide important community and economic benefits. This report attempts to provide more precision on how data centers use water, data water center use in the context of other water uses, and options from other states on how Oregon might use or update existing policies to best balance the opportunity and challenge provided by future data center development.

This report is preliminary. We consider it a dialogue draft, and welcome feedback on the types of additional information that might be helpful for the State of Oregon, Oregon municipalities and Tribes, and others looking to manage water in Oregon.

Appendix A. List of Initial Feedback

An initial version of this Dialogue Draft was presented to the Data Center Advisory Committee meeting on water on March 27, 2026 with an invitation for early feedback from Advisory Committee members and others presenters (listed on the Committee website at <https://www.oregon.gov/energy/Get-Involved/Pages/Oregon-Data-Center-Advisory-Committee.aspx>). Several others reached out to provide resources. Thank you to the following people for early feedback:

- Data Center Advisory Committee Members
- Ivan Gall and the Oregon Water Resources Department
- Mike Kucinski and the Oregon Department of Environmental Quality
- Julie Carter and Elijah Cetas - Columbia River Inter-Tribal Fish Commission
- Niki Iverson and the City of Hillsboro
- Rose Poton - Verde
- Mark Morgan - City of Hermiston
- Rachel O'Connor - Environmental Defense Fund
- Mat Martinson - Martinson Infrastructure Consulting and former EPA and IHS official
- John Devoe - Water Watch of Oregon