

Oregon Governor's Data Center Advisory Committee (DCAC)

Session 2: Data Centers and Water Issues

March 27, 2026 - Facilitators' Summary

The following Facilitators' Summary is intended to capture general discussion, reflections, concerns, and insights shared at the Data Center Advisory Committee's public session. This summary also indicates actions or issues that the Committee may need to discuss at upcoming sessions. This summary is not a transcript of the session. Committee members had the opportunity to review and refine technical information. For more details on the Committee's work, and to view this session's [agenda](#), presentations, and [recording](#), please visit the ODOE's [DCAC website](#).

Welcome and Introduction to the Process and People

Facilitator, **Donna Silverberg**, opened the session and welcomed the Committee Members, speakers, and session attendees. The WATER agenda committee designed Session 2 with curated panelists to discuss key water issues and perspectives to aid the Committee's focus on:

- How the development of data centers affects and can help Oregon meet its climate, clean energy, and natural resource management goals;
- How to protect Oregon's limited water resources in the face of growing demand from data centers while recognizing available clean water is imperative to both existing economic sectors such as agriculture and the growth of new and more diversified local economies; and
- Identifying key issue areas to address when developing a policy framework to help guide the state in the responsible siting of data centers moving forward.

DCAC Co-chair **Michael Jung**, framed the Committee's job as asking smart questions about data centers as a group of people with expertise outside, yet related to, data centers. Donna reviewed session discussion protocols and clarified that the Committee is "advisory" only, not a decision-making body. Rather than a hearing format, the Committee's goal is to engage in informal learning by asking experienced presenters to provide ideas and engage in dialogue. She also noted that, while today's session and public comment period focuses on data centers and water, public listening sessions will be scheduled for general comments regarding data centers sometime in April.

Co-Chair, **Margaret Hoffmann** thanked the session participants for their engagement, noting the Committee had already heard from hundreds of people through public comments. She asked the public to continue providing ideas about what the Committee should consider moving forward and welcomed feedback on what is working and areas for improvement. She noted that this process has been a robust and thoughtful conversation about how data center development could happen while being good stewards of Oregon's natural resources.

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Data Centers and Water – What is the Connection?

A panel of speakers provided the DCAC with context about

- Why and how do data centers use water?
- What is the State's interest in water?
- How do data centers get their water? How does it differ east and west of the Cascades? What does the permitting process and oversight look like?
- How do municipal water rights work in Oregon?
- How do municipalities consider/share water to help meet population growth AND Data Centers?
- What is the role of municipal governments regarding water?

Overview: Brightworks Sustainability Partner, **Josh Hatch**, provided a technical overview of how and why data centers use water. He began by noting that data centers can be thought of as big toasters that need to be cooled. His [presentation](#) explained that most data center water use is for cooling, including air cooling (outside-air/free cooling), liquid cooling directly at the rack or server, evaporative cooling (direct or indirect), and hybrid systems that switch methods depending on season, temperature, and humidity.

He noted that the climate in which data centers are built is significant. Dry air makes evaporative cooling more effective, even in places like eastern Oregon, while cold air can support free cooling. He also explained that water used in evaporative cooling is not typically “dirty” in a domestic wastewater sense; rather, dissolved salts and minerals become more concentrated over time, leading to “blowdown” discharge that must be and is treated. Josh highlighted that water is not destroyed but evaporated into the atmosphere and no longer available locally for drinking, irrigation, or other uses.

When considering a data center's energy to water relationship, less water use often means more electricity use, and using more water can lower energy demand and reduce equipment footprints. Metrics like PUE (Power Usage Effectiveness) and WUE (Water Usage Effectiveness) can be useful but are incomplete; instead, he proposed WUE+ (advanced WUE) as a metric, which adds embedded water from electricity generation and adjusts for regional scarcity and water reuse.

Josh suggested the Committee recommend that data centers use 100% renewable energy, when possible, to reduce embedded water and carbon. He also suggested data centers should be evaluated using metrics including both onsite and offsite water impacts. Additionally, data centers should be assessed differently by region since the significance of a given water volume differs by basin. Finally, he stated that it has been clear that data centers need to increase reporting transparency and use frameworks that make functionality understandable to the public.

Committee Discussion and Q&A:

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- **Q: How important is Oregon's climate for data center water-use design?**
 - **A:** Climate matters a lot for cooling efficiency. In dry climates, evaporative cooling works better because water evaporates more easily; in humid climates it is less effective. Josh noted Oregon's east side is especially suitable for evaporative cooling, while colder weather can also support free cooling using outside air.
- **Q: Is air cooling literally just electricity-powered air conditioning?**
 - **A:** Air cooling can simply mean moving outside air with fans over servers, without a refrigerant cycle. In some systems, air goes over coils that are cooled by water or refrigerant; in others, outside air itself does the cooling.
- **Q: Are the "clouds" seen over some data centers actually water vapor?**
 - **A:** Yes, visible plumes are evaporated water from cooling systems.
- **Q: Is water lost to cooling permanently gone, or still available somewhere?**
 - **A:** Evaporated water is not destroyed, but it is no longer locally available for drinking, irrigation, or reuse. Some water may return to the broader water cycle, but not in a way that immediately helps the local watershed.
- **Q: Is current data center water-use reporting enough to understand impacts?**
 - **A:** Existing metrics like PUE and WUE are helpful but incomplete because they do not fully capture embedded water from electricity generation, water scarcity, or local context.
- **Q: Is WUE+ ready to use?**
 - **A:** The concept exists and has been presented technically, but it is not yet widely adopted or understood by operators.
- **Q: Does embodied water include water used to build chips and buildings?**
 - **A:** The WUE+ concept as discussed thus far includes embedded water from power generation, but not the full life-cycle footprint of building materials or chip manufacturing.

The State's Interest: **Ivan Gall**, Director of the Oregon Water Resources Department (OWRD), [presented](#) on Oregon's water law and water availability. He emphasized that Oregon is facing water scarcity, noting that effects of climate changes are worsening supply challenges. Water rights in Oregon are governed by Prior Appropriation: "first in time, first in right". In the summer, many basins are fully appropriated, especially in eastern Oregon. New water rights are hard to obtain, so data centers often work through municipalities that hold larger rights and can grow into them over time. Data centers increasingly are turning to public water suppliers and existing rights rather than obtaining new rights. Non-municipal water rights have a 5–7-year development window before being finalized; municipal rights are treated differently and can be developed over much longer periods. Water rights must be put to practical, beneficial use, or they can be forfeited after five consecutive years of nonuse.

Ivan noted that, while water right transfers such as changing the place or character of use are possible, they cannot enlarge the overall consumptive footprint or impact other users.

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Ivan also explained the difference between surface water and groundwater development, showing that Oregon has over-appropriated much of its summer surface water supply. Groundwater resources are unevenly distributed and over-drafted in some areas. He highlighted that Aquifer Storage and Recovery (ASR) is an important tool available to data centers, storing water underground with less evaporative loss than surface reservoirs. Finally, he noted that Oregon’s database is limited on data center water use due to current reporting mechanisms.

Committee Discussion and Q&A

- **Q: Can municipalities “bank” water rights or grow into them over time?**
 - **A:** Yes, municipal water rights are treated differently in Oregon law. Cities and some ports can grow into their rights over time, unlike most other users, who generally must prove beneficial use within 5–7 years.
- **Q: Can conserved water be transferred or sold to a third party?**
 - **A:** There are transfer mechanisms, including the conserved water program, but any transfer must not injure other users or enlarge the consumptive footprint. OWRD reviews these carefully.
- **Q: If a data center buys an old industrial facility, can it use the attached water rights?**
 - **A:** Yes, potentially. The water rights tied to the facility may transfer with the property, and the new owner could apply to change the place or character of use, subject to review and possible forfeiture concerns if the rights were unused for too long.
- **Q: Are there any new summer water rights available?**
 - **A:** Generally, no; much of Oregon’s summer surface water is fully appropriated, especially in eastern Oregon.
- **Q: Do groundwater concerns include residential wells?**
 - **A:** Yes, the groundwater concern map includes all available data, including exempt wells, production wells, and other well logs where water levels could be measured.

Mike Kucinski, Oregon Department of Environmental Quality’s (DEQ) Deputy Water Administrator, [presented](#) on Oregon’s water quality permitting framework, clarifying that DEQ’s role is to regulate surface water and groundwater under the Clean Water Act and Oregon groundwater law. He explained that data centers may need either National Pollutant Discharge Elimination System (NPDES) permits for discharges to surface water or water pollution control facility permits for discharges to land. Permit types include General permits (standardized) for multiple facilities operating in a similar manner, or Individual permits, which are site-specific permits for one facility’s discharge.

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Mike emphasized that data center cooling water can become wastewater because it may contain chemicals used to prevent microbial growth, corrosion, and scaling; elevated temperatures, which can harm fish and aquatic life; and concentrated dissolved substances from recirculation and blowdown mentioned earlier. 30 cities have water pretreatment facilities connected to data centers. While DEQ can become involved when data centers discharge into municipal sewer systems, the city and data center must work together on pretreatment, capacity, and temperature issues.

Mike said that DEQ's biggest challenge is that some data centers are reluctant to share information DEQ needs for timely review, especially details on source water, recirculation rates, and additives. Without this information, DEQ cannot complete its technical analysis, which slows or stalls permitting. He also mentioned that some new arrangements are creating legal complexities, such as where a data center may own the land and treatment system, but the city becomes the permit holder. DEQ is not opposed to those arrangements, but they can take time to resolve.

Mike's practical recommendations included bringing DEQ in early for discussions and advice, providing complete and transparent information, using consultants familiar with Oregon's unique water requirements, and avoiding back-and-forth delays that slow the permitting process. DEQ does not seek to be a bottleneck, but it is required to look at the right data to protect Oregon's water quality and human health.

Committee Discussion and Q&A

- **Q: Does DEQ review aquifer storage and recovery (ASR) projects? Is DEQ a reviewer or an enforcer for ASR?**
 - **A:** DEQ has a technical review role and works with OWRD. DEQ reviews whether a project is protective of water quality. He offered to follow up regarding groundwater vs. surface water requirements related to ASR projects.
- **Q: Are there actual tests or monitoring requirements for discharged data center water?**
 - **A:** Mike did not know of a universal requirement from the data he had seen, and that the issue is part of the transparency problem.
- **Q: What happens when data centers send wastewater to municipal sewer systems?**
 - **A:** The city and data center work together under local pretreatment and DEQ permitting frameworks. The city must consider treatment plant capacity, temperature limits, and future growth.

Tribal Overview: **Julie Carter** and **Elijah Cetas**, Columbia River Inter-Tribal Fish Commission (CRITFC), [presented](#) on behalf of the four Columbia River Treaty Tribes, Yakama Nation, Warm Springs, Nez Perce, and Umatilla, to provide a Tribal/Tribal fisheries

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perspective on data centers and water. They introduced The Spirit of the Salmon Plan, CRITFC's guiding framework, rooted in Tribal commitments to restore fish to the rivers and protect watersheds. Water is foundational to salmon, first foods, and Tribal life; and Tribal rights and responsibilities are tied to specific places and river systems. They emphasized that the region's hydropower system, which supports the electric grid, has historically imposed costs on Tribes and salmon; new data center demand adds pressure to an already stressed system.

Data center sites have grown in the Columbia Basin and proposed facilities are especially concentrated along the Columbia River corridor, intersecting with Treaty resources, energy, water rights, and stream health. From the Tribes' perspectives, industrial sites should be transparent about chemicals stored on-site and should be part of basin-wide spill/emergency planning. Julie and Elijah referenced an engineering study showing the tradeoffs for data center liquid cooling: while it can reduce peak electrical demand, it may increase total water use. They highlighted that localized water impacts matter more than statewide averages and urged the Committee to examine how data centers alter peak loads during periods when salmon and rivers are already stressed (e.g., the summer). Data centers must be evaluated as part of a larger water, energy, Treaty rights and salmon-habitat system.

Committee Discussion and Q&A

- **Q: How do data center impacts relate to fish and Tribal water rights?**
 - **A:** Data centers matter because water, river temperature, stream flow, and energy systems all affect salmon, first foods, and treaty rights. Water use cannot be separated from fish habitat and the Columbia Basin's energy system.
- **Q: How should peak load and water be understood together?**
 - **A:** Data center cooling can affect peak power demand, and peak demand matters because it often occurs in summer when fish also need cool, adequate water. Julie stressed that this increases the pressure on the grid and on fish protections.
- **Q: Are data center impacts localized or basin-wide?**
 - **A:** Both. Localized siting decisions matter because impacts on one stream, aquifer, or outfall can be severe even if statewide totals seem small.
- **Q: What kinds of questions should agencies ask about water use and discharge?**
 - **A:** Julie and Elijah recommended asking about water source, hydrologic connection to streams, withdrawal quantity, return flow, low-flow conditions, discharge chemicals, spill planning, and whether Tribal rights and in-stream flows are considered.

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Local Government's Role: **Niki Iverson**, Hillsboro's Water Director and **Dan Dias**, City of Hillsboro, [presented](#) Hillsboro's case study as a long-time location for data centers, how the city plans for water, and how those facilities fit into the broader industrial system. Hillsboro hosts a dense cluster of 18 co-located data centers, largely concentrated in a planned industrial area of ~335 acres. The key reasons data centers located in the area are access to data fiber, power, site availability, workforce, low natural disaster risk, and proximity to related industries like biotech and electronics. The city's industrial base is unusually large, with about 50% of the city's water supply going to industrial use. Data Centers use 1.76% of Hillsboro's water supply and make up 3% of the total industrial water use.

Niki noted Hillsboro's Joint Water Commission (JWC) long-range water planning, which looks 30-50 years ahead and incorporates conservation requirements and supports the Willamette Water Supply Program (WWSP). The WWSP is a major new regional water supply project with an initial capacity of 60 million gallons/day, and an eventual buildout to 120 million gallons/day to support Willamette flows in the event of a major emergency. Hillsboro's share of initial capacity is 15 million gallons/day, with a buildout target of 36.2 million gallons per day. The project is a response to future growth, earthquake resilience, and existing supply limitations. Hillsboro worked with Tribes and state agencies early in project planning and purchased a water right from Salem rather than relying entirely on a new water right. They received a thermal trading plan for drinking water withdrawal that includes habitat and shading offsets. Municipal conservation obligations include 10-year water management/conservation plans and 5-year reporting; with regards to data centers, the city is working to ensure data centers pay their way rather than burden existing ratepayers.

Committee Discussion and Q&A

- **Q: Are data centers in Hillsboro using potable water?**
 - **A:** Yes, they are required to use drinking water, and their discharge goes to the sewer system where it is treated, not to groundwater.
- **Q: Does Hillsboro have enough supply capacity?**
 - **A:** The JWC still has available capacity and long-term planning is critical. The city does not wait until it is out of water before investing in new supply.
- **Q: Is the Willamette Water Supply Program being built just for data centers?**
 - **A:** No, it is a long-planned, regional supply and resilience project, primarily driven by city growth, earthquake preparedness, and broader community needs. As noted, data centers are a small part of the overall demand.
- **Q: Does Hillsboro's planning account for climate change and reduced snowpack?**
 - **A:** Hillsboro is a rain-fed basin, so snowpack is not our main issue. Instead, the city is seeing and planning for more atmospheric rivers, flooding, wildfire impacts, landslides, and water-quality stressors.

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- **Q: What happens if there are power outages or other emergencies?**
 - **A:** The city plans for resilience with standby power and infrastructure investments because outages and emergency conditions are major risks.
- **Q: Do municipalities have special conservation requirements?**
 - **A:** Municipalities must do water management and conservation plans and report to the state every five years. Some municipal rights also include fish persistence flow conditions.

The Dalles Mayor, **Rich Mays**, and former Public Works Director, **Dave Anderson**, [presented](#) a case study of the development of data centers in The Dalles. Mayor Mays emphasized the economic gap left by the city's major aluminum industry closure in 2000. This gap was filled by Google, which was attracted to the area by the available land, adequate water and power, fiber connections, and property tax incentives. Since 2005, the city has negotiated several community benefit agreements with the company, which has brought hundreds of jobs and major revenue streams.

Dave focused the group on the city's 2006 Water Master Plan, with an update in 2024. The city evaluated data centers based on disclosed water needs. The city did not discount water for data centers. Instead, a 2015 agreement required the data center owner to pay for half of a new pipeline and the full cost of upgrading a groundwater well. A 2021 agreement required new wells, reservoirs, pump stations, and distribution piping with transferred water rights from the old aluminum smelter. Dave noted that The Dalles' water rates would have risen more sharply without data center revenue, although the biggest challenge has been public trust around trade-secret withholding of water quantities. Dave and Mayor Mays stressed the importance for local governments and data centers to be transparent, to show fair cost-sharing, and not to subsidize large users at the expense of existing customers.

Committee Discussion and Q&A

- **Q: Were data center water rights or rates subsidized in The Dalles?**
 - **A:** No, data centers paid the same rates as other customers, and the city intentionally did not subsidize their water use at the expense of other ratepayers.
- **Q: How were infrastructure costs handled?**
 - **A:** The data center developers paid for needed pipeline, well, reservoir, pump station, and piping upgrades. The city structured agreements so infrastructure was not assumed by existing customers.
- **Q: What happened to water rates because of data center revenue?**
 - **A:** Data center revenue helped prevent large water rate increases, keeping increases at 7% instead of 35% in 2025.
- **Q: Did the city know the water quantities involved in the agreements?**

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- **A:** The values were treated as trade secrets and redacted, which created skepticism and hurt public trust.
- **Q: How did the city avoid harming existing users or future growth?**
 - **A:** The city used curtailment planning and water-management plans to ensure that adding data centers would not increase the chance of having to restrict other users in a water shortage.
- **Q: Was data center growth part of the original water master plan?**
 - **A:** The city expected new industrial development, but not specifically data centers; the water master plan was broad enough to anticipate a large industrial user.

Panel 1: What Demands are Data Centers Placing on Water in Oregon?

A panel provided insights into the following questions:

- How are data centers' water usage affecting current communities, natural resources, and the environment?
 - How much water do they use in Oregon (as compared to other uses)?
- What are the concerns about water quality and quantity the committee needs to understand?
- What ideas do you have for overcoming these concerns?

Kelly Campbell, Policy Director for Columbia Riverkeeper (CR), [presented](#) on water impacts, transparency, and environmental risks from data centers. She noted that the organization has spent the past year studying how data centers affect water, climate, and river communities. She emphasized that impacts are not just from cooling water on-site, but also from chip manufacturing and electricity generation. Possible pollutants and operational chemicals, including PFAS, biocides, anti-scaling agents, corrosion inhibitors, heavy metals, and thermal pollution are all water quality concerns. She stressed that many companies do not disclose water-use data, and this makes meaningful oversight difficult. Another CR concern is that data centers are concentrated in places already facing water stress, resulting in communities and Tribes bearing the burden.

Policy recommendations: CR called for stronger reporting, water-use transparency as a baseline, addressing environmental injustices on the Columbia, requiring data centers to curtail energy use during emergencies to protect drinking water for people and salmon, and creating Best Practices for water and energy as they relate to data centers, including water protections. In addition, CR urges temporary moratorium on new large data centers as the most practical short-term step until regulations catch up. From CR's perspective, Oregon should not approve large data centers without better disclosure, stronger safeguards, and a clearer understanding of local and cumulative water impacts.

Committee Discussion and Q&A

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- **Q: What makes data centers different from other industrial uses to CR?**
 - **A:** The combination of direct water use, indirect water use, secrecy, and thermal impacts makes them especially concerning. The issue is not just onsite use but the broader water footprint.
- **Q: What about the scale question — statewide versus local impact?**
 - **A:** Statewide totals can look small, but localized impacts matter greatly because rivers, aquifers, and communities experience the effects directly.
- **Q: Are data centers already effecting river temperatures?**
 - **A:** Thermal pollution is a major concern and existing river temperature limits are already tight. Any additional hot discharge needs to be cooled before entering the river.

Eric Quaempts, Natural Resources Director, Confederated Tribes of the Umatilla Indian Reservation (CTUIR), [presented](#) on behalf of the confederation of the Umatilla, Walla Walla, and Cayuse bands, who have Treaty Rights tied to a much larger ceded land base. He emphasized that water must be understood through the Tribes' First Foods framework, explaining that water comes first in the traditional serving order, and again at the end, showing that water is foundational to fish, deer, roots, berries, and the Tribes' culture. The Tribes see ecological management as a reciprocal responsibility, not just a technical resource issue, and he stressed that surface water and groundwater are connected and must be managed together.

Data center development is occurring in parts of the ceded lands and could affect Tribal resources. Eric recommended using the Oregon Integrated Water Resources Strategy as a tool for local and state planning around data center growth and urged local governments to consider how much water to allocate to data centers, how that fits with future needs, and how to integrate land use planning, conservation, reuse, and protection of tribal treaty rights. From the Tribes' perspective, data center planning should be done through a Tribal ecological and Treaty-Rights lens, with water treated as a publicly owned and culturally vital resource rather than just an input to development.

Committee Discussion and Q&A

- **Q: How does the Tribe want water issues framed?**
 - **A:** The Tribes frame water through the First Foods order and reciprocity. Water is not just a utility input; it is a cultural and ecological foundation.
- **Q: How should municipalities approach allocation decisions?**
 - **A:** Eric suggested cities should understand how much of their existing water allocation should go to data centers versus other future uses and should integrate land-use planning with water planning.
- **Q: What is the tool you mentioned earlier for planning?**
 - **A:** Oregon's Integrated Water Resources Strategy developed by OWRD < DEQ and other state agencies.

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Peter Gray, and **Eric Means**, Trout Unlimited (TU), [presented](#) on the organization's efforts to protect trout, salmon, and other cold-water species in priority waters, and their concerns about impacts from data centers. Data centers are increasingly located near waters TU works to protect. Data center water-use data is often unavailable, which makes it hard to safeguard cold, clean water. TU is developing a framework with five core principles they are encouraging others to use with all industries, not just data centers: 1) smart siting, 2) accounting for both direct and indirect water use, 3) thermal protection, 4) a mitigation hierarchy that prioritizes avoidance first, and 5) transparency, accountability, and life-cycle responsibility.

Peter stressed that data center impacts to water should be considered from planning through operation and eventual decommissioning, including chip and material waste upstream. From TU's perspective, data centers should be sited and managed in ways that protect fish habitat, water quality, and watershed health, not just individual project footprints.

Committee Discussion and Q&A

- **Q: Is the lack of data unique to data centers?**
 - **A:** No, other sectors also create transparency challenges. But data centers are a new and fast-growing issue, so the lack of information is especially problematic now.
- **Q: Would Trout Unlimited still have concerns even if data centers disclosed all their data?**
 - **A:** full water disclosure would help, but it would not solve all concerns as thermal pollution, toxic discharge, and cumulative habitat impacts remain.
- **Q: Are data centers affecting fish?**
 - **A:** It is difficult to prove exact causation because many projects are recent, but the patterns and risks are clear enough that TU is worried about impacts to fish habitat.
- **Q: What should a good policy do first — avoid, minimize, or mitigate?**
 - **A:** Trout Unlimited's framework prioritizes avoidance first, then minimization, then mitigation, with any mitigation staying local rather than being offset elsewhere.

Rose Poton, Water Justice Coordinator for Verde, [presented](#) on Oregon Water Futures Collaborative's Water Justice Policy Action Framework, which was developed from statewide conversations with local communities, Tribal representatives, state agencies, and experts from all counties in Oregon. The Framework's core values include protecting the environment, improving health, advancing economic inclusion, shifting power to frontline communities, and avoiding the repetition of broken systems. From Verde's perspective, data center siting and operation must be evaluated through equity, community participation, and long-term sustainability. Rose highlighted that data centers

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are often concentrated in areas already facing water stress, drought, or groundwater restrictions. She spoke to groundwater contamination, drought risk, declining snowpack, and the state's need for major water infrastructure investment.

Verde has concern about whether the public is getting enough benefit if rising infrastructure costs and utility bills are shifted onto ordinary Oregonians. From Verde's perspective, data center development can be linked to broader community concerns including environmental justice, public health, and cultural/economic change. They suggest stronger transparency, community representation, protections for current and future generations, Community Benefits Agreements, upfront infrastructure funding, and learning lessons from other states. She closed by saying Oregon should use a community-centered, justice-based framework for any data center policy, and communities most affected by water stress should have an authentic voice in decision-making.

Committee Discussion and Q&A

- **Q: What specific chemicals were being referenced in the contamination concerns? What are the sources behind references to biocides, corrosion inhibitors, heavy metals, PFAS, and other pollutants?**
 - **A:** Rose noted references at the end of the slide deck and would make them available to the Committee.
- **Q: Can you support the claim made in the presentation that people have died from nitrate-related contamination in eastern Oregon?**
 - **A:** Rose clarified that she had read that in other references, but it was not something she was personally asserting as a confirmed causation study.
 - **A:** A Committee Member clarified that the Oregon Health Authority has not identified nitrate as the direct cause of death in those cases.
- **Q: What should Oregon do to mitigate and prevent adverse water impacts from data center development?**
 - **A:** Policy ideas such as stronger transparency, community representation, upfront infrastructure funding, community benefit agreements, and safeguards for current and future generations.
- **Q: Can you provide more explanation on how data centers might compound existing groundwater restrictions, drought, and infrastructure stress?**
 - **A:** Siting data centers in already burdened communities and the need for water justice protections.

Panel 2: What Are the Technical & Policy Innovations Data Centers Are or Can Support Regarding Oregon's Waters?

The final panel addressed questions including:

- What could a future look like? What would be helpful for rural and other affected communities? How can we maximize sustainable water usage?

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- What new technological innovations have data centers and others developed to use water in a way that positively affects water quantity and quality?
- What are the gaps and policies that would help Oregon move from where we are to where we could be? How could the state assist with that?

Mark Morgan, Assistant City Manager, City of Hermiston, [presented](#) on the city's water-use profile and ASR strategy, focusing on how data centers fit into Hermiston's broader water system. He explained that irrigation is the dominant water use in Hermiston, far more than most other categories. Data centers use much less water per acre than uses like commercial agriculture, schools, medical campuses, and even some residential development. He described that Hermiston's water demand spikes in summer and falls sharply in winter, creating a large amount of infrastructure that sits underused most of the year. The city's system pulls water from the Columbia River, treats it, and pumps it about 9 miles to the city.

Hermiston's ASR program treats drinking water by injecting it into the aquifer in lower-demand months and recovers that water during peak demand. The city has just received approval to start injecting water into a new ASR well. Mark noted that data center partners helped fund the ASR infrastructure and the city plans to use that investment to benefit the broader community, not just data centers. From his perspective data centers in Hermiston with ASR can create a net water benefit by helping store water, reduce summer river withdrawals, and support fish, farmers, and families. He also noted the city is currently working with DEQ on reusing some water discharges, but that system is not fully in place yet. In Hermiston, data centers are being used as part of a regional water-management strategy: they help fund infrastructure, support ASR, and can be paired with water planning that improves summer river protection and aquifer conditions.

Committee Discussion and Q&A

- **Q: Is the comparison to agriculture fair?**
 - **A:** Yes, in Hermiston the comparison makes sense because irrigation is the dominant water use and data centers use comparatively little per acre. The water footprint should be understood in the local context.
- **Q: Does the city store water underground only in winter?**
 - **A:** Yes, Hermiston plans to inject water from roughly October through March, when demand is lower, and then use that stored water in summer.
- **Q: How much of the ASR project is for data centers versus the community?**
 - **A:** The system is not just for data centers. 360 million gallons of annual storage is primarily for Hermiston's community water planning, though data centers helped fund the infrastructure.
- **Q: Is the aquifer itself improved by the project?**
 - **A:** Yes, the aquifer is warm and sulfur-y, and the injected water creates a cooler "bubble" that improves local aquifer conditions.

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- **Q: What about discharge water — does it get reused?**
 - **A:** Hermiston is working with DEQ on a system to beneficially reuse some discharge water, potentially for irrigation canals, but it is not fully in place yet.

Beau Schilz, Water Strategy and Technology Lead, Amazon Web Services (AWS), [presented](#) AWS's approach to water use in Oregon, and the infrastructure investments they believe support it. AWS's overall water strategy is to return more water than it uses in direct operations by 2030. A fully developed AWS campus in eastern Oregon uses about 22 million gallons per year under the latest design, and a 100 MW campus would use about 9 million gallons per year. He explained that AWS uses outside air for most of the year and only needs water for cooling about 7% of the year in Oregon. AWS's Oregon operations had a WUE of 0.16 liters per kWh in 2024 (totaling 284 million for 2024), which was about 70% lower than the North American data center average. Almost all the water was used between June and August (some in May and September, but very little). He also noted that the amount of water they used is equivalent to a quarter of an irrigation pivot.

Beau noted that using water can reduce electricity demand and help avoid peak power use on very hot days, and AWS has already spent more than a quarter billion dollars on water infrastructure in eastern Oregon. AWS is also helping fund or develop new treatment capacity, intake stations, and other water infrastructure for places like Umatilla and the Port of Morrow. From AWS's perspective, these investments can improve local systems and lower pressure on public ratepayers. AWS works to operate efficiently, use recycled water where possible, and invest in local water infrastructure so data center growth can also support community water needs.

Committee Discussion and Q&A

- **Q: How much water does AWS use in Oregon?**
 - **A:** A fully developed campus in eastern Oregon uses about 22 million gallons per year under its latest design, and a 100 MW campus would use about 9 million gallons per year.
- **Q: Why use water at all if outside air cooling is possible?**
 - **A:** There is a tradeoff. Water can reduce power use and help avoid peak electricity demand on hot days. The company tries to maximize both water and power efficiency.
- **Q: Are you familiar with WUE+?**
 - **A:** No, Beau was not familiar with the metric.
- **Q: Are the infrastructure projects fully paid for by AWS?**
 - **A:** The company invests heavily in local infrastructure and partners with municipalities, but there are nuances because public systems and private systems interact. AWS pays to support its needs while helping to unlock community benefits.
- **Q: Are communities gaining extra capacity from these investments?**

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- **A:** Yes, often projects are built larger or more flexibly than the immediate data center needs, so the community can use the infrastructure too.

Suzie Shin, Data Center Sustainability Programs Manager, Google, added that similarly, Google focuses on advanced responsible water use, benefiting watersheds and communities, and developing tools and technologies to reduce water stress. She explained that Google evaluates each watershed and site individually before choosing a cooling strategy, then looks at the specific water source, not just broad regional conditions. Google uses water in part to improve energy efficiency and reduce carbon as part of their responsible water use. Google’s two Oregon data centers have PUEs of 1.1 and 1.06, which she noted are highly efficient; the company publishes annual water metrics for its facilities.

Suzie [presented](#) that Google invested about \$28 million in ASR and related infrastructure. Community and watershed benefits support comes in the forms of wildfire resilience activities, canal piping, irrigation efficiency, and a dam rehabilitation project with Tribal partners. Google has worked over multiple years with cities and utilities, and these projects are designed to benefit both the company and the community. Google is working to pair efficient cooling, public reporting, and local infrastructure investment with its Oregon data center operations, while also contributing to broader watershed resilience.

Committee Discussion and Q&A

- **Q: How does Google decide where to use water for cooling?**
 - **A:** Google uses site-specific watershed assessment and climate-conscious cooling. It looks at local water conditions and chooses systems accordingly.
- **Q: Does Google report its water use publicly?**
 - **A:** Yes, it publishes annual water metrics globally, including for Oregon.
- **Q: What kinds of community or watershed investments has Google made?**
 - **A:** Google has invested in ASR, wildfire resilience, canal piping, irrigation efficiency, and a dam rehab project with tribal partners.

Derek Smith, Resource Innovation Institute (RII), [presented](#) a concept for co-locating data centers with controlled-environment agriculture — essentially a “farm park” model. RII is a Portland-based organization that develops public-private partnerships to expand controlled-environment agriculture using data center waste heat, CO₂, and chilled water as inputs for greenhouse production. RII believes this approach, if planned well, meets multiple needs by improving food security, creating jobs, protecting arid environments from becoming heated, and improving water efficiency.

To do this, data centers are part of a larger industrial cluster, connecting them and their waste heat to greenhouses, which in turn are connected to cold chain logistics, food processors, and potentially many other businesses. Data centers could be built with “greenhouse-ready” specs, mainly by stubbing out a pipe to later connect heat and chilled-

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water systems, with a central resource hub or utility-like structure needed to manage the flows and finance the system.

Derek referenced models in Virginia, the Netherlands, Europe, and other places where similar symbiosis concepts are being explored. He emphasized that this creative approach could produce more food per acre, better resource efficiency, and more economic benefit than a data center alone. Data center growth could be turned into a broader industrial symbiosis opportunity if Oregon were to develop effective partnerships and infrastructure around data centers and greenhouse production.

Committee Discussion and Q&A

- **Q: Is this something family farms and small businesses do, or is it mainly big agriculture?**
 - **A:** It could scale in different ways. In places like North Dakota, they are looking at larger producers as well as opportunities to train local growers and support entrepreneurship, including culturally relevant crops and native-owned greenhouse operations.
- **Q: Where does the carbon / CO2 input come from in Oregon?**
 - **A:** The system would likely be CHP-driven, meaning natural gas could be used and potentially converted over time. The CO2 can come from the energy system as part of the co-location model.
- **Q: Are there precedents for co-locating greenhouses with other industrial facilities?**
 - **A:** Yes, there are examples elsewhere. RII's site-feasibility work mapped possible inputs like landfills and other sources that could support greenhouse operations. Derek framed the model as a new version of existing industrial symbiosis ideas.

Rachel O'Connor, Environmental Defense Fund (EDF), [presented](#) a policy framework for making data center development more proactive, transparent, and locally beneficial. She emphasized that the core problem with data centers' quick growth is they have a relatively small on-site footprint but create unknown upstream water and energy impacts. She cautioned that water-efficiency improvements can sometimes shift water demand elsewhere or worsen scarcity if savings are not protected. From EDF's perspective, Oregon should stop reacting project-by-project and instead set clear expectations before proposals arrive. Their 3-pronged policy approach includes:

1. Equip Communities
 - Provide model ordinances and model development agreements.
 - Assist smaller jurisdictions that lack staff or technical capacity.
 - Offer technical assistance so local governments can negotiate on more equal footing.

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2. Build Guardrails
 - Require public reporting of annual and peak water use.
 - Consider creating rules for water-sensitive siting.
 - Protect municipal and groundwater systems.
 - Explore limits on potable water use in especially stressed areas.
 - a. Policy examples from other states include Arizona, Ohio, and Virginia.
3. Generate Public Benefit and Buy-In
 - Tie incentives to water performance.
 - Make water-positive pledges measurable and enforceable.
 - Use Community Benefit Agreements or similar tools.
 - Ensure local communities and watersheds get durable, enforceable benefits rather than voluntary promises.

In closing, Rachel noted that Oregon should use the DCAC's work to create a framework that supports communities knowing the terms before proposals arrive, developers know the expectations up front, and water risks are addressed before projects are approved.

Committee Discussion and Q&A

- **Q: Do you have examples of communities getting technical capacity-building help for water-specific negotiations?**
 - **A:** A Virginia report that found local governments lacked authority and technical capacity to evaluate data center water impacts. Also, Pennsylvania had examples of model ordinances and community benefit agreements. She had no Oregon-specific water program as a direct example.
- **Q: Where should the expertise live — at the state or local level?**
 - **A:** An idea was to use examples such as Hillsboro and The Dalles as templates for smaller jurisdictions that lack staff or leverage, rather than having the state take over the negotiation itself.
- **Q: What about efficiency upgrades in agriculture?**
 - **A:** Savings can be misleading unless some of the conserved water is protected for the aquifer or river.
- **Q: Could water-positive pledges help?**
 - **A:** They are promising so long as they are measurable and enforceable, not just voluntary commitments.
- **Q: What about the role of utilities and communities?**
 - **A:** The state should help create clear guardrails and public-benefit tools, but local governments still need flexibility to negotiate the deal that fits their community and geography.

Bobby Cochran, Oregon Water Policy & Innovation Service (Service), **Peter Maille**, Eastern Oregon University/REV, and **Trevor Hildebrand**, Oregon State University, [presented](#) on practical policy options Oregon might consider in managing data center water impacts.

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Bobby explained the purpose of the Service is to provide impartial, objective policy options for complex water issues. To this end, the team has looked nationally for examples Oregon could adapt, instead of reinventing the wheel. He introduced a memo with several policy pathways for the Committee to consider.

Peter showed how data centers use water and discharge water. He used comparisons to show scale, including data centers versus agricultural irrigation and household water use, to help build understanding of how data centers compare to other water users. Trevor walked through the seven policy discussion areas in the memo:

- Siting data centers where enough water exists
- Better reporting and transparency of water use
- Technology or performance standards for cooling systems
- Incentives for efficient energy and water use, rather than mandating a single technology
- Accurate forecasting and revenue planning so cities can plan for large users
- Water-positive pledges with real measurement and local relevance
- Community water benefits through infrastructure, stormwater, and local investment

He also described examples from other states, including Minnesota (centralized, proactive pre-permitting coordination), California, Iowa, and Michigan (reporting bills), Kansas and South Carolina (technology restrictions in some cases), Ohio (community benefit-linked abatements), Arizona (per-gallon water fees for data centers), and Pennsylvania and Virginia (water-impact review ideas and local capacity concerns). From their perspective, Oregon should use a Proactive Policy Toolkit to require better information, help communities negotiate, set guardrails up front, and create enforceable local benefits before more data centers are approved.

Committee Discussion and Q&A

- **Q: Should the state be directly involved in local negotiations?**
 - **A:** No, the state could provide templates, model agreements, and technical assistance so smaller communities can negotiate on more equal footing.
- **Q: If technology improves, can data centers solve the water problem that way?**
 - **A:** Technology will likely improve; but technology alone won't solve the issue. State policy should still set the target and use incentives or performance standards to push both water and energy efficiency.
- **Q: Should the state mandate a specific cooling technology?**
 - **A:** Scale matters a lot. For statewide policy you should include indirect energy-water impacts; for local siting decisions the site-specific water footprint and local watershed conditions matter the most.
 - **A:** Trevor said some states do mandate specifics, but he thought performance-based standards were better for preserving innovation.

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- **Q: Would model agreements help smaller communities?**
 - **A:** Yes — model ordinances and agreements could help communities understand what to ask for and what protections to include before a developer arrives.
- **Q: How useful is the comparison of data center water usage to center-pivot irrigation?**
 - **A:** Bobby noted the comparison helps give scale, but the Committee should judge it in context. If a data center uses municipal water, comparing it to an irrigation pivot is less direct than comparing it to another industrial or commercial use.
- **Q: Should comparisons be regional or watershed-based?**
 - **A:** The regional context for water use is very important, and in many cases more important than just a site-specific comparison. Bobby pointed to Oregon's multiple water basins and said watershed context matters.
- **Q: Do these comparisons work for local decision-making?**
 - **A:** Committee members said comparisons to homes were not very useful and that industrial-to-industrial comparisons would be better. Bobby agreed and said they were trying to help decision-makers understand scale.
- **Q: Should the memo include broader community or industrial comparisons?**
 - **A:** The memo could be expanded with other comparable water users such as aircraft parts manufacturing, brewing and distilling, sawmills, food processors, and concrete/sand/gravel.
- **Q: What is the timeline for Committee feedback on the memo?**
 - **A:** Bobby said they would welcome feedback quickly and that a week would be ideal, though a few weeks would still work.
- **Q: Would it be useful to talk to local communities like The Dalles, Hillsboro, or Hermiston more specifically?**
 - **A:** Rachel and Bobby both said yes — local lessons learned and agreements from those cities could help shape a more practical set of policy options.
- **Q: Can the memo focus strictly on water?**
 - **A:** Yes, that is the right scope. Bobby noted that water is connected to energy and land use, but the memo should stay focused on water to remain useful.
- **Q: How will the team think about upstream energy-water impacts?**
 - **A:** The team is already including the indirect energy-water footprint in the memo; the upstream water used to create electricity matters, especially at the state level.
- **Q: Can technology innovation reduce both water and power use?**
 - **A:** Bobby and Trevor said yes, possibly, but policy should still set targets. Trevor noted that states can require performance standards rather than mandating a specific technology.
- **Q: Are there examples of truly innovative co-location models?**

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- **A:** Committee members noted some very futuristic examples, including ocean-based and space-linked concepts. Bobby said the memo was meant to capture a broad set of ideas, even if some are still exploratory.

Public Comment & Committee Listening

The DCAC offers members of the public an opportunity to provide public comment focused on the topic of the session in 2-minute timeframes. DCAC staff are compiling all written public comments for inclusion as an appendix in the final Report to the Governor. DCAC heard public comments from: Dr. Carmen P. Thompson, Sarah Clark, Michaela McCormick, Lynn Handlin, Jacob Roloff, and Kelsey Shaw Nakama.

Next Steps and Action Items

The Co-Chairs acknowledged that, due to the number of excellent presentations and questions by the Committee, Session 2 ran over schedule and that the process will continue to be refined moving forward. The next DCAC meeting will be on April 24, 2026, focusing on **LAND USE**, with an extended agenda time to allow for adequate presentation and Committee discussion. An online General Public Listening Session will be held before the April meeting to ensure more voices and perspectives are heard; the date will be posted to the [ODOE DCAC website](#), as well as all meeting materials and the recording from today’s session. Finally, the Committee and staff welcomed attendees to provide feedback on how to improve future meetings and that subject matter-related comments may be submitted via the [public comment channel](#).

- **ACTION: ODEQ/OWRD:** Share info on municipal water headroom and industrial water-right availability — *asap*.
- **ACTION: ODEQ:** Clarify ASR permitting requirements / roles — *asap*
- **ACTION: Bobby Cochran / OR WPIS:** Post Oregon Water Policy Memo for DCAC and public review — *~2-3 weeks*.
- **ACTION: Oregon Dept. of Energy / Committee Staff:** Post slides, meeting materials, and session recording to the ODOE website — *asap / ongoing*.
- **ACTION: Committee Chairs & Staff:** Schedule and announce dedicated online public listening sessions (one before April DCAC session) — *asap*.

Adjourn Public Meeting

Donna thanked everyone for their thoughtful, respectful, and engaged discussion on this important topic and adjourned the session.

This summary was prepared by the Facilitation Team to help the DCAC track issues discussed and follow-up actions between sessions. All committee members reviewed the summary and were offered time to make refinements, all of which have been integrated into this final version. Questions or comments may be sent to colby@dsconsult.co.

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Participants Present for All or Part of Session 2 (in alphabetical order):

DCAC Members: **Dan Dorrان**, **Bill Edmonds**, **Margaret Hoffmann**, **Michael Jung**, **Tim Miller**, and **Jean Wilson**. [*Excused/not present: Greg Dotson*]

Speakers: **Dave Anderson** (The Dalles), **Kelly Campbell** (Columbia Riverkeeper), **Julie Carter** (Columbia River Inter-Tribal Fish Commission), **Elijah Cetas** (Columbia River Inter-Tribal Fish Commission), **Bobby Cochran** (Oregon Water Policy and Innovation Service), **Dan Dias** (City of Hillsboro), **Ivan Gall** (Oregon Water Resources Department), **Peter Gray** (Trout Unlimited), **Josh Hatch** (Brightworks Sustainability), **Trevor Hildebrand** (Oregon State University), **Niki Iverson** (City of Hillsboro), **Matt Klebes** (The Dalles) **Mike Kucinski** (Oregon Department of Environmental Quality), **Peter Maille** (Eastern Oregon University/REV), **Mayor Rich Mays** (The Dalles), **Eric Means** (Trout Unlimited), **Mark Morgan** (City of Hermiston), **Rachel O'Connor** (Environmental Defense Fund), **Rose Poton** (Verde), **Eric Quaempts** (Confederated Tribes of the Umatilla Indian Reservation), **Beau Schilz** (Amazon Web Services), **Suzie Shin** (Google), and **Derek Smith** (Resource Innovation Institute)

Technical Support: **Maeve Hogan** (Committee Staff, environmental planner), **Michael Kluz** (Committee Staff), **Nate Redinbo** (Portland State University), **Brenton Riddle** (University of Oregon), and **Douglas Quirke** (University of Oregon).

Facilitation Team: **Donna Silverberg** and **Colby Mills**, DS Consulting.