

Oklahoma Groundwater + Data Centers



New Demand Strains Outdated Water Resource Management

Oklahoma allocates groundwater based on how much a basin is authorized to yield – not on comprehensive measurement of how much is actually being pumped. That gap matters more every year as the state's data center boom adds a fast-growing, largely untracked new category of water demand.

How Groundwater Works

Think of an aquifer as a savings account. Recharge, like rainfall soaking into the ground, is a deposit. Pumping is a withdrawal. When withdrawals consistently outpace recharge, the balance falls. A well can keep producing water even as the aquifer is depleted, because pumping can draw on water stored decades or centuries ago. Once levels fall far enough, wells get more expensive to run or stop producing, and stream or river flow can be impacted too.

Oklahoma's own 2025 Comprehensive Water Plan¹ evaluates groundwater separately from legal permitting availability. A basin can have water that is legally available to permit while simultaneously experiencing physical depletion—because legal availability and hydrologic sustainability are not the same thing.

Allocation is not the same as measurement.

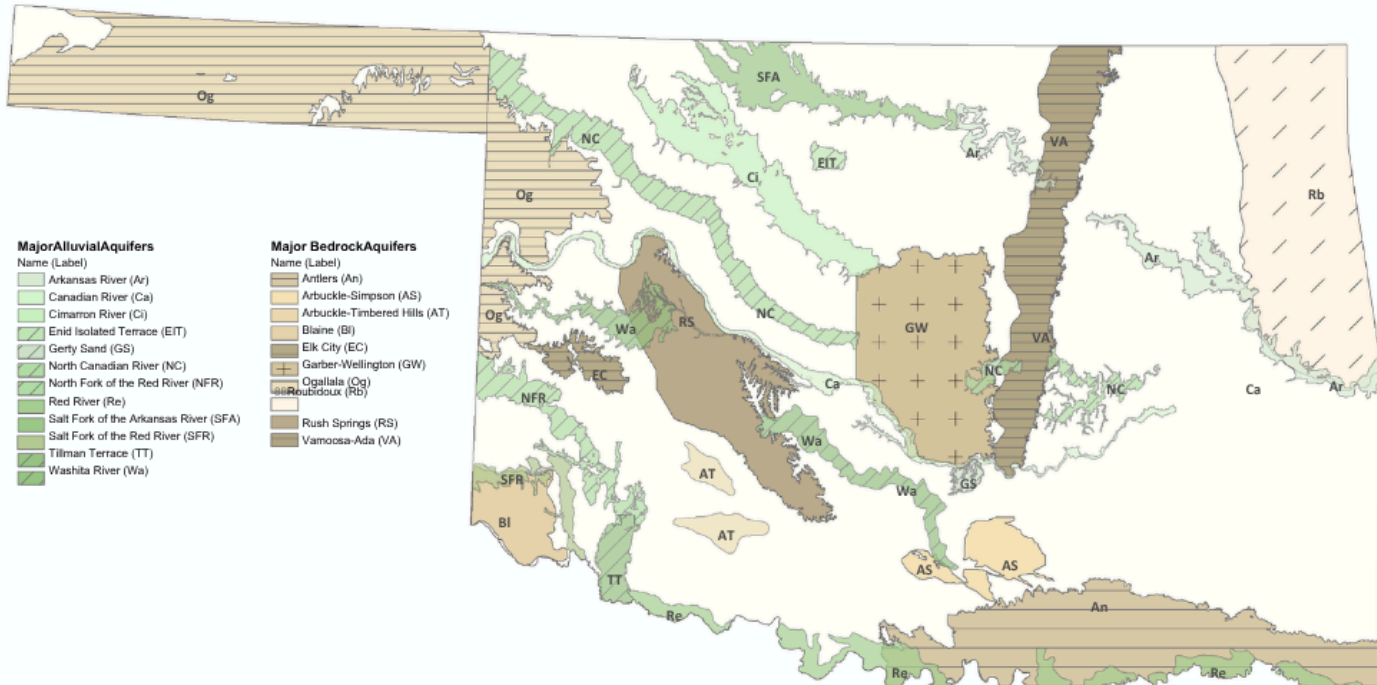
Oklahoma requires permitted water users to file annual water-use reports with the Oklahoma Water Resource Board (OWRB). However, reporting does not necessarily mean that every withdrawal is measured by a meter. OWRB's current reporting guidance allows irrigation permit holders to calculate annual use using specified methods, and some reporting categories are voluntary. Domestic groundwater use generally does not have to be reported.

¹ Oklahoma Water Resources Board, "Water Planning," accessed August 24, 2026, <https://oklahoma.gov/owrb/water-planning.html>.

Oklahoma's Aquifers: The Impact of Projected Demand

The Oklahoma Water Resources Board recognizes 22 major aquifers across the state. OWRB manages water resources according to 82 planning basins, organized into thirteen different planning regions. The figures below are based on projected future demand from the 2025 Comprehensive Water Plan.

Planning region and basin fact sheets can be found at: <https://oklahoma.gov/owrb/water-planning/regional-summaries.html>



88%

Of All Planning Basins will be Impacted by Groundwater Depletions by 2075.

Aquifer depletions, where withdrawals exceed recharge, are projected in most regions, based on OWRB projected demand by 2075.²

35/82

Planning Basins Impacted by Alluvial Aquifer Depletions

The most significant alluvial depletions are projected in the Central planning region, including Oklahoma City, with physical water shortages projected as early as 2030³.

69/82

Planning basins Impacted by Bedrock Aquifer Depletions

The most significant bedrock depletions are projected in the Northwest planning region, impacting the Ogallala Aquifer, with physical water shortages projected as early as 2030.⁴

² Oklahoma Water Resources Board and Carollo Engineers, *Physical Water Supply Availability* (Oklahoma Comprehensive Water Plan, April 2026), Tables 9 and 10, 44–49,

<https://oklahoma.gov/content/dam/ok/en/owrb/documents/water-planning/ocwp/2025/physical-water-supply-report.pdf>

³ Oklahoma Water Resources Board, *Central Planning Region* (2025 Oklahoma Comprehensive Water Plan Region Fact Sheet),

<https://oklahoma.gov/content/dam/ok/en/owrb/documents/water-planning/ocwp/region-fact-sheets/central/CentralRegion.pdf>

⁴ Oklahoma Water Resources Board, *Northwest Planning Region* (2025 Oklahoma Comprehensive Water Plan Region Fact Sheet), <https://oklahoma.gov/content/dam/ok/en/owrb/documents/water-planning/ocwp/region-fact-sheets/northwest/NorthwestRegion.pdf>

The Measurement Gap

Oklahoma groundwater belongs to the surface landowner, subject to OWRB regulation. Most non-domestic uses need a permit, and permit holders must file annual water-use reports. But reporting is not the same as metering:

- Irrigation permit holders may calculate use with approved formulas rather than a meter reading.
- Some reporting categories are voluntary, and domestic use generally isn't reported at all.
- Historically, OWRB could require metering in a basin only if a majority of local landowners requested it.

Legislative Progress in 2026: S.B. 259

The Groundwater Modernization Act, effective as of 11/1/2026, requires annual water-use reporting to OWRB, gives the Board authority to set metering/measurement rules, and creates penalties for failing to report or for waste. It also requires qualifying data centers seeking a groundwater permit to use water-conserving cooling (closed-loop, dielectric, or air) rather than open-air evaporative systems. Two related bills, HB 4459 and SB 1928, would have tied multi-year flexible groundwater allocations to metered annual reporting. Neither passed in 2026, but together they demonstrate momentum towards enforceable metered allocation standards.

Surging Demand: Data Centers

Oklahoma is entering a major data center development boom, but the state does not have a comprehensive system for measuring, managing, or planning for the water impacts of these facilities.

To the left is a photo of Google's data center in Pryor, Oklahoma. **Between July 2024 and June 2025 it used more than 1.1 billion gallons of water.** About 253 million gallons were discharged back to the Neosho River; nearly all the rest was lost to evaporation.⁵

The water came through MidAmerica Industrial Park, which holds an OWRB permit for up to 27.4 billion gallons/year. Google itself needed no separate state water permit.



Statewide, OWRB projects water demand will rise 18% over the next 20 years. By 2075 demand could exceed permissible surface water supply in parts of Oklahoma City and Tulsa, before accounting for new hyperscale data centers, which OWRB says it currently lacks reliable data to forecast.

The loophole: a data center that buys water from a municipal or industrial supplier, rather than holding its own OWRB permit, is not comprehensively tracked at the facility level. SB 259's cooling-technology requirement applies only to centers seeking their own groundwater permit.

⁵ Clifton Adcock, "As Data Centers Boom in Oklahoma, So Does Water Demand," The Frontier, February 23, 2026, <https://www.readfrontier.org/stories/as-data-centers-boom-in-oklahoma-so-does-water-demand/>