

# SAFEGUARDING WATER SUPPLIES

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## WHY IT MATTERS

**Groundwater** aquifer levels in the eastern part of Virginia are overdrawn, while wells in the western part of the state are going dry due to extended ongoing drought conditions. After a brief rebound and stabilization between 2010 to 2021 due, in part, to temporary mill closures, the **Potomac Aquifer** is once again projected to resume declining.<sup>1</sup> According to the recently released SJ25 groundwater study on the current state of groundwater resources,<sup>2</sup> there is limited capacity for new groundwater withdrawals in the **Eastern Virginia Groundwater Management Area (EVGMA)**. In a simulation that looked at the feasibility of withdrawing 3 million gallons of water per day from 9 locations, none passed the criteria for permitting. The maximum amount that could be permitted was 360,000 gallons per day in Northumberland County, with <30,000 gallons per day in western regions of the EVGMA available.<sup>3</sup> In western regions of Virginia, including Loudoun County, water tables have fallen 10-40 feet since 2000.<sup>4</sup>

As the data center industry in Virginia expands, impacts to our water resources continue to intensify. Thanks to the passage of 2026 Senate Bill 553,<sup>5</sup> beginning in 2027, we will have a better understanding of the full scope of these impacts through public water usage reports. But there is still work to be done. Many localities are mandating that data centers use reclaimed water, a process utilizing treated wastewater treatment plant flows. When data center projects use evaporative cooling technology and multiple reclaimed water systems are clustered in river areas, the cumulative evaporative loss can result in loss of return flows (normally returned to Virginia's waterways) by 60% at peak use times.

## CURRENT LANDSCAPE

Declining water tables due to increased withdrawal rates and extended drought conditions make it clear that action is needed. The new Secretary of Natural and Historic Resources has identified making regional water supply plans, due in 2029, as an actionable priority. At the same time, managed aquifer recharge projects are moving forward.

For example, the **Hampton Roads Sanitation District (HRSD)** uses advanced treatment processes to purify reclaimed wastewater to drinking water standards before injecting it into the Potomac Aquifer, the primary groundwater source for much of eastern Virginia.<sup>6</sup> Managed aquifer recharge has potential to incrementally increase regional groundwater levels, but these gains depend on sustained operations.

As demand grows, Virginia's planning and permitting systems must ensure decision-makers and the public have a clear understanding of emerging pressures on water resources. Municipal providers developing reclaimed water systems for data centers are not required to obtain a separate permit if they already have a **Virginia Pollutant Discharge Elimination System (VPDES)** permit. Instead, the **Virginia Department of Environmental Quality** evaluates these projects through a **Cumulative Impact Analysis (CIA)** determination assessing whether significant adverse impacts to receiving waters are expected. However, neither statute nor regulation defines "significant adverse impact," and there is no formal public process for reviewing or commenting on proposed reclaimed water systems. This limits transparency at a time of rapidly increasing demand. The FY27 budget included language directing DEQ to develop water use guidelines for data centers in water scarcity areas, but those guidelines and what includes a "water scarce area" remains very open ended.

The data center industry represents the fastest growing industry in Virginia and potentially one of the state's largest water users. Despite this, new data center proposals continue to utilize **non-disclosure agreements (NDAs)** to shield estimated water usage from the public (see *Data Center Siting, page 71*).

## OPPORTUNITIES

Virginia has an opportunity to use the recommendations from SJ25 to modify and strengthen the Ground Water Management Act of 1992.<sup>7</sup> These recommendations include targeted statutory and regulatory updates and additional budgetary resources, such as staff and funding, to support implementation.

The term "significant adverse impacts" must be defined and a process must be established to ensure that the public has meaningful opportunities for engagement on proposed reclaimed water systems.

As data centers and other water-intensive industries continue to expand rapidly around the Commonwealth and strain its water systems, decision-makers and the public must be better informed about new demands on the system before projects are approved. Virginia can accomplish this, in part, by giving the public access to estimated water usage information when data center projects and other intense water users submit their applications and sign water service agreements.



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## TOP TAKEAWAYS

Groundwater levels in Virginia are declining in many parts of Virginia, including the Potomac Aquifer. The release of the SJ25 groundwater study report presents opportunities to strengthen the Groundwater Act of 1992.

The term “significant adverse impacts” should be defined and a public process established to ensure transparency around reclaimed water systems.

Public disclosure of estimated water use by intense water users increases transparency and gives communities the information needed to assess potential impacts on water resources.

## ENDNOTES

1. *Senate Joint Resolution No. 25 Groundwater Supply East of Interstate 95 Report*. (2026). Virginia Department of Environmental Quality. <https://www.deq.virginia.gov/home/showpublisheddocument/37496/639204862481823642>
2. *Senate Joint Resolution No. 25 Groundwater Supply East of Interstate 95 Report*. (2026). Virginia Department of Environmental Quality. <https://www.deq.virginia.gov/home/showpublisheddocument/37496/639204862481823642>
3. *Senate Joint Resolution No. 25 Groundwater Supply East of Interstate 95 Report*. (2026). Virginia Department of Environmental Quality. <https://www.deq.virginia.gov/home/showpublisheddocument/37496/639204862481823642>
4. *Assessment of the Groundwater Supply in Loudoun County, VA*. (2025, August 24) Loudoun County Preservation and Conservation Coalition. [https://loudouncoalition.org/wp-content/uploads/2025/09/Assessment-of-Groundwater-Supply-in-Loudoun-County\\_09\\_15\\_2025.pdf](https://loudouncoalition.org/wp-content/uploads/2025/09/Assessment-of-Groundwater-Supply-in-Loudoun-County_09_15_2025.pdf)
5. Plans and programs; registration of certain data by water users; advisory committees; committee membership for federal, state, and local agencies; water supply planning assistance, SB553. § 62.1-44.38. (2026). <https://lis.virginia.gov/bill-details/2026/SB553>
6. *Sustainable Water Initiative for Tomorrow (SWIFT) Project*. (n.d.). Hampton Roads Sanitation District. <https://www.hrsd.com/swift>
7. Ground Water Management Act of 1992. (n.d.). <https://law.lis.virginia.gov/vacode/title62.1/chapter25/>

**Female Osprey watching her nest in Hampton, VA**

Photo by Lori A Cash

