

SAFEGUARDING WATER SUPPLIES

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WHY IT MATTERS

Virginia's waterways and groundwater aquifers have always been thought to be relatively abundant. For centuries, they have supported a diverse array of ecosystems and provided critical habitat for fish and wildlife. In addition to its ecological importance, Virginia's water supplies are critical to supporting the Commonwealth's economic and recreational sectors. Virginia's waters also play a vital role in supporting Virginia's #1 private industry: agriculture. Our waterways serve as the basis for robust tourism and recreational opportunities such as fishing, paddling, boating, and waterfowl hunting. Perhaps most importantly, our water supplies provide us with drinking water.

However, this relative abundance of water is being called into question. Water-intensive industries such as data centers are becoming more established, extreme weather patterns are intensifying drought conditions, and groundwater levels are declining, especially east of Interstate 95. Ongoing work at the Virginia Department of Environmental Quality (DEQ) has made it clear that there are major water planning data gaps and a need to clarify regulations regarding legacy unpermitted water intake users. We lack a comprehensive cumulative water supply planning process to help us ensure enough water is available for all beneficial users.

Compounding the issue, localities east of Interstate 95 are being forced to transition from groundwater wells to alternative water sources (most often surface water) due to significant declines in the Potomac Aquifer. This shift to surface water places additional pressure on Virginia's rivers and streams, which already face challenges from existing surface water withdrawals.

Virginia must proactively plan to ensure water supplies are accessible to all beneficial users in the future. To guarantee that Virginians have access to clean and sustainable water, a comprehensive approach is necessary.

CURRENT LANDSCAPE

As the Potomac Aquifer declines, DEQ is actively encouraging localities within the Eastern Virginia Groundwater Management Area (EVGMA) to transition from dependence on groundwater wells to alternative water sources. Often, the alternative source they pursue is surface water from Virginia's rivers and streams. As it stands now, DEQ modeling shows that some rivers are over-allocated during low-flow conditions, meaning there isn't enough water to meet the expected withdrawal demands.

New surface water withdrawals in Virginia require a Virginia Water Protection (VWP) permit, but not all existing intakes are permitted. Any surface water intake in existence before the creation of VWP regulations in 1989 is considered exempt and is not required to have a VWP permit unless certain conditions change. In 2023, outside of power-generating facilities, 76% of surface water withdrawals reported to DEQ were unpermitted.¹ DEQ and legacy water users, those with intakes that predate the 1989 regulations, disagree on how much water they're allowed to withdraw (pre-1989 usage vs intake capacity). DEQ has also not received complete information it requested from these users about intake capacity and past withdrawals. In the responses it did get, DEQ found "reported capacity and intake values that differ from DEQ records," and many responses either left fields blank or didn't report values in the correct format (million gallons per day, MGD).² Further, resource management and water supply planning become significantly more challenging when legacy water withdrawal exemptions persist indefinitely and can be transferred to new entities, creating uncertainty around actual water availability and system capacity.

In 2020, the General Assembly required DEQ to amend the water supply planning process.³ As of October 9, 2024, new regulations direct the State Water Control Board to designate Regional Planning Areas based mainly on river basins and assign each locality to an Area; Virginia has 25 Areas. Each must submit a single, jointly developed regional water supply plan by 2029, identifying supply risks and proposing regional strategies. The General Assembly allocated \$462,000 (\$18,480 per Area) in grants over two years to support plan development, which is expected to cost \$90,000–\$300,000 per plan.

Additionally, the VWP permitting process assesses only the impact of the individual intake, not the cumulative impact of new and existing withdrawals on a river basin. In 2025, the General Assembly funded a three-year VIMS study of the cumulative impacts of surface water intakes on aquatic life and water quality of Virginia's Chesapeake Bay and tributaries. The findings can inform VWP permitting decisions affecting native aquatic species and salinity.

OPPORTUNITIES

There is an opportunity to clarify the withdrawal standard that unpermitted legacy water intake users all abide by (intake capacity/limiting capacity vs pre-1989 max) and enforce the requirement that all legacy intake users fully disclose reported capacity and intake values, and do so in the format required

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(MGD) to DEQ. As we approach nearly 40 years after this action to deliberately not require modern environmental protections or standards for these intakes, setting timelines or deadlines for meeting environmental protections, like aquatic organism structural protections, is warranted. Further, it would be similarly appropriate to stop the transfer of these legacy withdrawal exemptions from operations that have long ceased withdrawing water to new industries, which may seek to circumvent the VWP process.

There is an opportunity to provide DEQ and Regional Planning Areas with the resources they need to create the required regional water supply plans. These regional water supply plans can then be used to develop comprehensive water supply plans for each river basin that take into account the cumulative needs of all beneficial users. This type of planning allows us to know how much water is available in a river at any one time to ensure our rivers are not over-allocated.

ENDNOTES

1. *Virginia Agriculture Facts and Figures*. (2025). Virginia Department of Agriculture and Consumer Services. <https://www.vdacs.virginia.gov/markets-and-finance-agriculture-facts-and-figures.shtml>
2. *Informal workgroup to discuss the Virginia Water Protection Permit Program regulation exclusion under 9VAC25-210-310(A1)*. (2025, May 8). Virginia Department Of Environmental Quality. https://townhall.virginia.gov/l/GetFile.cfm?File=meeting%5C53%5C41621%5CMinutes_DEQ_41621_v1.pdf
3. *Water supply planning resources*. (2024). Virginia Department of Environmental Quality. <https://www.deq.virginia.gov/our-programs/water/water-quantity/water-supply-planning/water-supply-planning-resources>

TOP TAKEAWAYS

Many localities will transition from groundwater wells to rivers due to significant declines in the Potomac Aquifer. This shift adds pressure on Virginia's rivers and streams, which already face challenges from existing water withdrawals, and has resulted in applications for new water intake permits.

DEQ is working with legacy water intake users to define how much water they are permitted to withdraw (pre-1989 volume vs intake capacity/limiting capacity) and obtain current data from legacy withdrawers relating to intake capacity and pre-1989 max withdrawals.

Adequate funding is needed to create regional water supply plans that provide the basis for basin-wide cumulative water management to ensure all beneficial users have reliable access to water.