

NEWS RELEASE

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New report exposes the vulnerabilities of the Washington metropolitan area's water supply

According to research by the Interstate Commission on the Potomac River Basin (ICPRB), the region's water supply could fail to meet the needs of the region as soon as 2030 in the event of an extreme drought.

ROCKVILLE, MD (December 5, 2025): While most people don't think twice about where their water comes from — or if it will come at all — when they turn on the tap, new research notes that changing weather patterns and increased water demand are putting a strain on the region's water supply. This may have dire consequences without strong investment in water infrastructure according to a new report by the Interstate Commission on the Potomac River Basin (ICPRB), an organization tasked with producing a report every five years on the region's water supply.

The report, [2025 Washington Metropolitan Area Water Supply Study - Demand and Resource Availability Forecast for the Year 2050](#), shows that the region will have plentiful water *most* years, but there is an increasing chance — up to about 1 percent in 2030 and up to about 5 percent in 2050 — that there will be water shortages. This is when there is not enough water to meet the demands of the water users while still leaving enough water in the Potomac River to protect the sensitive aquatic habitat below Little Falls Dam.

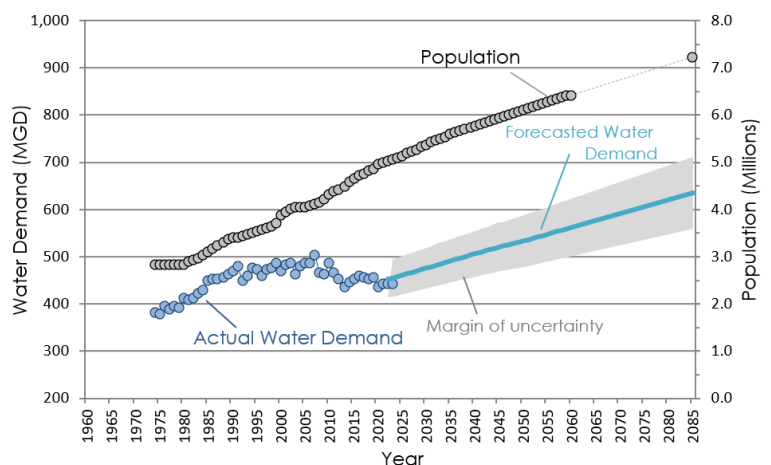
According to the report, despite exponential growth in the region, overall water use has stayed remarkably stable over the past several decades due to the use of low flow fixtures and appliances. However, the researchers predict an increase in water demand in the coming decades, with a 17 percent increase in water use by 2050.

In addition to more overall use, the river's flow may be impacted by predicted changes in temperature and precipitation through a process that has been characterized as "[hot drought](#)" by ICPRB.

"Results from our study indicate that extreme hydrological droughts may become more severe due to increasing temperatures," explains Dr. Cherie Schultz, Director of ICPRB's Section for Cooperative Water Supply Operations on the Potomac.

"A major uncertainty in many regions, including the Potomac, is the response of future stream flow to the competing effects of temperature change and precipitation change. Rising temperatures will tend to decrease flows due to increases in evaporation, while predicted increases in precipitation will tend to increase flows," continued Dr. Schultz.

"It is changing weather patterns combined with the increase in demand that may be putting the whole system at risk," states ICPRB Executive Director Michael Nardolilli.



Actual Washington metropolitan area annual water demand (blue dotted line), ICPRB's 2025 forecast (blue solid line), with actual and forecasted population (gray dotted line).

(Source: ICPRB)

Data center growth is also contributing to the uncertain future of the region's water supply, both upstream and within the Washington metropolitan area. The study finds that upstream data center water use is expected to grow over time and could become comparable to several established water-using sectors, such as commercial, industrial, and thermoelectric facilities. These estimates are based on grid-connected energy forecasts, which are rapidly evolving as the sector continues to expand. In the Washington metropolitan area, data centers could use as much as 80 million gallons on peak days by 2050. This could signal the growing significance of data centers in the region's water demand. The report notes that balancing energy, water, regulations, and infrastructure constraints may be needed to strengthen resiliency in this sector. One step forward would be to improve transparency around data center water use.

The majority of the Washington metropolitan area's water supply is provided by the Potomac River. While most regions have two or more sources of water, the Potomac River is the only source of drinking water for the residents of Washington D.C. and Arlington County.

Two upstream reservoirs, Jennings Randolph and Little Seneca, are available to release water to augment Potomac River flow should the river get too low to meet the region's demands. In addition, off-Potomac reservoirs, Fairfax Water's Occoquan Reservoir and WSSC Water's Patuxent reservoir, are used to partially meet these suppliers' demands. According to the study, four out of nine modeled scenarios predict that in the event of an extreme drought, the upstream reservoirs will run out of water as early as 2030, indicating that short-term measures should be taken to improve reliability.

Some short-term solutions are already in the works. Improvements in ICPRB's river flow forecasts can help water resource planners better predict when to release water from upstream reservoirs. A water reuse project recently announced by DC Water, dubbed [Pure Water DC](#), aims to create a more resilient water source for residents of the District. Two drinking water reservoirs currently in the planning stages, Loudoun Water's Milestone Reservoir (expected operational by 2028) and Fairfax Water's Edgemon Reservoir (expected operational by 2040), were already included in the report's calculations.

The U.S. Army Corps of Engineers, Baltimore District, initiated a [D.C. Metropolitan Area Backup Water Supply Feasibility Study](#) last fall which could lead the way to possible long-term solutions. However, with federal funding issues hanging in the balance, it is unclear when that study will be completed.

“For nearly 170 years, the Washington Aqueduct has been committed to executing its critical mission to produce safe, reliable, and high-quality drinking water for approximately one million citizens living, working, or visiting the National Capital Region,” said Washington Aqueduct General Manager Rudy Chow. “Increased water resiliency standards are a vital part of our commitment to public health and safety, national security and the wellbeing of local populations. We are in close collaboration with our regional utility partners as we continue our ongoing Washington D.C. Metropolitan Area Backup Water Supply Feasibility Study, aimed at developing coordinated and implementable solutions that ensure abundant water supply, including the identification of a secondary water source and additional water storage capability.”

“We can no longer ignore the fact that parts of the DC region have only one source of drinking water – the Potomac River – and just a one-day back-up of water supply. Today's release of the 2025 Washington Metropolitan Area Water Supply Study highlights the need to expedite the study so that we can reduce the vulnerability of the DC region from a cutoff of drinking water because of drought or contamination events (both accidental and deliberate),” explained Nardolilli.

“This report confirms the need for innovative and cooperative approaches, as well as funding, to secure the water supply for our region,” said WSSC Water General Manager and CEO Kishia L. Powell. “The Potomac River has provided the vast majority of the region's drinking water for generations. But climate pressures and growing demand will impact our ability to meet the region's needs in just a few years. This report makes clear that we need to continue with substantial

investments to safeguard public health, enhance reliability and resiliency, and ensure the long-term economic vitality of the region.”

An [earlier study](#) released by ICPRB found that a significant water supply disruption could result in losses of almost \$15 billion in gross regional product and hundreds of millions in tax losses, all within the first month.

“For nearly 50 years Fairfax Water, WSSC Water, the Washington Aqueduct and ICPRB have been working together to ensure adequate water supply for the Washington Metropolitan Region now and into the future” said Fairfax Water General Manager and CEO Jamie Bain Hedges. “This study further advances our collective mission to supply life’s most essential service for decades to come.”

The water supply study released today is conducted every five years by the Section for Cooperative Water Supply Operations on the Potomac (CO-OP) of the Interstate Commission on the Potomac River Basin (ICPRB) on behalf of the three major water suppliers: Fairfax Water, WSSC Water, and the Washington Aqueduct. This is the first year that the study has explored the impacts of data centers on the water supply.

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Questions regarding Washington Aqueduct operations or feasibility study can be sent to NAB-PAO@usace.army.mil

LINKS AND OTHER RESOURCES:

- Full report: [2025 Washington Metropolitan Area Water Supply Study - Demand and Resource Availability Forecast for the Year 2050](#)
- Summary: [Factsheet](#)
- Map – Figure 2-1: [Washington metropolitan area water supplier service areas and existing and planned water supply resources](#). (full basin)
- Map – Figure 2-2: [Water supplier service areas in the Washington metropolitan area, existing and anticipated as of 2025](#). (scaled to Washington metropolitan region)

The ICPRB is an interstate compact commission established by Congress in 1940. Its mission is to protect and enhance the waters and related resources of the Potomac River basin through science, regional cooperation, and education. Represented by appointed commissioners, the ICPRB includes the District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia, and the federal government.