



D A T A C E N T E R S :
L E T ' S T A L K A B O U T
W A T E R D E M A N D S

By Stacey Hanrahan, Communications Specialist, Susquehanna River Basin Commission

With Pennsylvania poised to become a hub for data centers, there are many things to consider. Power demands are currently gaining the most attention, but the exponential demand for water is often left out of the conversation despite being our most basic human need. It's probably because we tend to take water for granted. Benjamin Franklin said, "When the well's dry, we know the worth of water."

At the Susquehanna River Basin Commission (SRBC), we don't take water for granted, and we're definitely not waiting for the well to dry up before we appreciate its worth. It's literally our job to plan ahead to sustainably manage the amount of water available in our basin. We must balance strong economic growth with everyday human needs and a healthy environment.

Energy-intensive data centers for enterprises like AI and cryptocurrency are rapidly expanding. As large tech companies look for data center homes in Pennsylvania communities, an expanded tax base and good jobs make them an attractive option for municipalities. And PA is attractive to AI thanks to our large energy resources and relatively rich water supply compared to other parts of the country.

But a single data center facility can use more than 5 million gallons of water per day, potentially putting a large demand on a community's water supply. Everyone is talking about data center power demands – as they should be. The demands are so high, new power plants have been proposed solely to provide the facility's electricity needs.

But you need water to produce power. So water takes a hit twice. Water is traditionally used to cool the server systems for data centers, but it is also needed for cooling at the power plant that provides electricity to the center.

As technology advances, the power demands, and therefore likely the water demands, will only increase. **According to researchers at the University of California, it takes a little more than a 16 oz. bottle of water to write one 100-word email with OpenAI's ChatGPT.** Approximately a quarter of Americans have used the AI tool, according to the Pew Research Center. It's a safe bet more will utilize it in the future, even those that initially resist new tech.

But the good news for our water resources is that there are alternatives. Innovative technologies such as dry and hybrid cooling may greatly reduce the water demand at these facilities without compromising feasibility. Operational costs can also be saved through permitting incentives.

As a Commission that regulates water withdrawals and consumptive use, defined as water used but not returned to the basin, we're always looking for ways to conserve, reduce and mitigate water use. In 2015, 73% (or 93 million gallons per day) of all reported consumptive use in the basin was attributed to power generation.

So we adopted a resolution that encourages and incentivizes the use of dry cooling technology for power generation. Dry cooling uses ambient air to cool and condense steam, drastically lowering the amount of water consumption.

Now, witnessing another large water user enter the scene, we recently expanded that resolution to encourage data centers and other emerging facilities to consider the use of dry, hybrid, or other water-saving technologies for cooling purposes.

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The successes of water saving alternatives have been demonstrated at multiple power plants within the Susquehanna River Basin. Currently, four dry cooling power plants are in operation within the basin with impressive results.

Through 2024, more than 45 billion gallons of water use has been avoided by the four plants. One significantly reduced their public water supply demand, which helped meet their NPDES/discharge requirements. And because they didn't have to co-locate with a water source, one was sited at the intersection of transmission and gas lines, avoiding electrical transmission line extensions.

To date in the Susquehanna River Basin, we have only received and permitted one data center project in Luzerne County. We know this is just the very beginning of an expanding industry, one we're ready to accommodate with the proper balancing – not unlike, in many ways, the dawn of fracking in our basin.

Our regulations exist so that all users of the basin's water resources have reliable, conflict-free, and sustainable water supply for current and future generations, even as demographic, economic, and climate conditions evolve.

According to the Washington Post, a newspaper in Oregon battled Google

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in court to learn how much water the company's data centers are using in an area east of Portland. Documentation revealed the answer to be nearly a quarter of all the water available in town.

Fortunately, in the Susquehanna River Basin you don't need a lawsuit to discover water usage, because our Commission exists to permit and track it. But tech companies are very protective of their proprietary business plans, which does make it hard for agencies, municipalities, legislators, and other stakeholders to get the answers needed in order to make sound planning decisions.

We're hearing a lot of big tech companies pledging to go greener with new, less water-intensive cooling methods. Only time will tell if they hold up to their promises. Because now, at the start of the AI era, as technology evolves faster than I can write this article without the help of AI, many questions remain to be answered. And in the interest of water conservation, we won't be asking ChatGPT.

So before your community undertakes planning for an energy intensive data center, please add water needs to the discussion. We're happy to be a resource as we strive to preserve one of our basin's most precious ones. 💧

The Susquehanna River Basin Commission is a federal/interstate government agency responsible for protecting and wisely managing the water resources within the 27,500 square-mile Susquehanna River Basin without regard to political boundaries. Our mission is to enhance public welfare through comprehensive planning, water supply allocation, and management of the water resources of the basin. For more information on the Commission, visit srbc.gov.

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