Water Use by Data Centers in the Susquehanna River Basin - FAQ

What does the SRBC regulate?

The Susquehanna River Basin Commission (SRBC/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. Because the waters of the basin are used for many purposes – domestic, municipal, agricultural, commercial, industrial, power, ecological and recreational – these competing needs led to the drafting of the Susquehanna River Basin Compact more than 50 years ago. The agreement between New York, Pennsylvania, Maryland and the federal government states that the Commission must balance sustainable economic development with the conservation of aquatic ecosystems.

The SRBC regulates large water users (sources include groundwater, surface water & public water supplies), in general:

- *Water withdrawals of 100,000 gallons per day (gpd) or more over a 30-day average, individually or in combination with other withdrawals*
- *Consumptive water use (water used, but not returned to the Basin) of 20,000 gpd or more over a 30-day average*
- *Any amount of water diverted into the basin*
- *Water diverted out of the basin that is 20,000 gpd or more over a 30-day average*
- *Any amount of water withdrawn or consumptively used for natural gas development activities*

What doesn't the SRBC regulate?

Our agency was intentionally designed to be non-duplicative of other agencies. Generally, the SRBC does not regulate water quality issues, including discharges, as that authority is held by the individual states and the federal government.

We do often coordinate with other regulatory agencies (PADEP, PFBC, MDE, NYSDEC, etc.) on individual permits. The user must obtain and maintain all necessary approvals from other agencies and adhere to other agency regulations in order to be in compliance with ours.

How are you involved with data centers?

Any data center with water usage that reaches our thresholds would need SRBC approval prior to operating. Many data centers have existed in the basin for years without the need for our involvement. It is the newest generation of data center – often called hyperscale data centers that are designed to handle massive amounts of data with growing demands of cloud computing for things like AI and cryptocurrency – that are proving to require large amounts of water when using traditional cooling systems.

Why do hyperscale data centers have such high water demands?

High-speed computing (that is performed at hyperscale data centers) generates a lot of heat that must be dissipated to avoid harm to the servers. Traditionally, water based cooling methods have provided a convenient and cost effective way to achieve the needed cooling. However, when used at the hyperscale level, a single data center campus can evaporate millions of gallons of water per day, potentially putting a large demand on a community's water supply.

These same data centers have very high power demands as well – so high that new power plants have been proposed solely to provide the facility's electricity needs. Typical power plants also have the need for cooling, with evaporative water based cooling, again, being a standard technique. The vapor plume of evaporated water from these facilities can frequently be seen rising into the air from cooling towers. So hyperscale data centers pose high demands on water supplies in two ways.

How do these proposed data centers in recent news compare to other large water users in the basin? Can you give an example?

Hyperscale data centers have the potential to be among the largest consumers of water in the basin, especially when considered as a whole. The added water demand for new power generation puts that number even higher. Millions of gallons a day is more water than is used by most communities with public drinking water. Most industrial facilities use less than one million. A typical fully irrigated golf course can use up to half a million. The largest users of water in the basin are power plants generating electricity.

How could a data center using a large amount of water affect a community? What's the concern?

Most communities do not have large surpluses of excess water supply readily available to provide to hyperscale data centers or new power plants built to serve them. Data centers can be constructed quickly – in under two years – but it can take many years longer than that to identify and develop new sources of water supply.

With traditional cooling methods, it is unlikely that a hyperscale data center will be able to obtain enough required water from the local public water supplier. So if the data center is proposing to supply its own water from groundwater wells or a nearby stream or river, careful review will be needed to ensure that the volume of water needed can be safely supported by the source without depleting it, without denying water to existing users, and without harming aquatic habitat and wildlife that rely on the water.

Do cooling alternatives exist? Does SRBC provide incentives to use alternatives?

Yes! Innovative cooling technologies and water conservation techniques such as dry and hybrid cooling not only exist, but are rapidly evolving. Using alternatives can greatly reduce water demands, while at the same time, offer other benefits such as:

- *potential avoidance of SRBC permitting entirely*
- *decreased fees*
- *increased opportunities for the use of lesser quality waters*
- *quicker permitting through prioritized reviews*
- *increased siting flexibility (i.e. minimizing transmission extensions, KOZ and/or brownfield development, co-location, etc.)*
- *environmental operational resiliency (i.e. one less utility to fail, drought impact avoidance)*
- *decreased consumptive use liability and mitigation requirements*
- *lower operational costs*

How do you know the alternatives work?

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. 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.

The successes of water saving alternatives have been demonstrated at multiple power plants within the basin. Four dry cooling power plants have operated in the basin for over 7 years 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 locate near a large water source, one was sited at the intersection of existing transmission and gas lines, avoiding electrical transmission and gas line extensions.

Over the last 7 years, dry cooling power plants have avoided over 16 mgd of consumptive use. Consumptive use rates for evaporative cooling power plants have averaged ~225 gallons per megawatt hour (MWh) of generation, while dry cooling power plants have averaged ~3 gallons per MWh, a reduction of over 98%.

How many data centers currently hold SRBC permits?

As of early 2026, we have approved water use for only one project – Amazon Data Services in Salem Township, Luzerne County. Anyone can access water applications and approvals on our WAAV portal: https://www.srbc.gov/waav

Do you ever reject a water use application? What goes into an application review?

We are a science-based agency. Applications undergo a rigorous, scientific review. Highly trained and licensed hydrogeologists, geologists and engineers apply the latest science and technology to determine whether or not a water use will negatively impact the environment and/or other users.

Permits aren't one-size-fits-all. And approvals have conditions. For example, if appropriate, "passby" conditions are established flows so that a project has to stop withdrawal prior to causing harm. If a user doesn't adhere to their permit's conditions, there are consequences, such as violations and potential penalties. We have an entire Compliance department dedicated to auditing and keeping tabs on permitted water users. There are reporting requirements, scheduled and unannounced site visits, and penalties can and have been imposed on violators.

Permits also have time limits and renewals aren't automatic.

How can the public voice their concerns about water related aspects of a project?

The Commission has a very robust public participation and commenting process with multiple opportunities and methods available for submitting comments and concerns. Our team is very transparent and approachable. We're always happy to explain or clarify a situation. To learn more on public hearings, commenting, business meetings and other ways to get involved please visit our website: https://www.srbc.gov/regulatory/public-participation/

And again, all approved projects and pending applications are viewable on SRBC's WAAV Portal: https://www.srbc.gov/waav.

What is SRBC's position on data centers coming to the basin?

As mentioned earlier, it is our responsibility to balance sustainable economic development with the conservation of critical water supplies and aquatic ecosystems, regardless of what industries our member states permit to operate within our boundaries. With the Susquehanna River Basin's resources and infrastructure, the Commission believes our watershed poses promising partnership opportunities for the location of new data centers. Of the many factors that go into siting these facilities, we are focused on the availability of water for cooling both the computer servers within the buildings and any new power generation that is required to run them. Many of the companies proposing sites in the Basin are also promoting interest in innovative water saving technologies, and we look forward to working together to find sustainable, efficient, and feasible alternatives where suitable. Several of SRBC's existing policies offer financial and permitting incentives to conserve our water resources, and we are eager to see them put to use!

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. We believe we have the necessary technology, knowledge and structure in place to reasonably incorporate hyperscale data centers into the mix in the same fashion as may be needed.