

Testimony: Part 1.

1. Project Sponsor: Berwick Enterprises, Inc. Project Facility: The Bridges Golf Club, Berwick Township, Adams County, Pa. Application for renewal of consumptive use of up to 0.249 mgd (30-day average) (Docket No. 19950102).

6. Project Sponsor: Cowanesque Valley Recreation Association. Project Facility: River Valley Country Club, Westfield Township, Tioga County, Pa. Application for renewal of consumptive use of up to 0.099 mgd (30-day average) (Docket No. 20020602).

My concern is the aggregate impact of consumption use on Cowanesque Lake storage capacity.

The United State Army Corps of Engineers issued a Draft Environmental Assessment in June 2023. The Army Corps (“USACE”) stated:

Reducing or limiting consumptive use was considered by SRBC as an alternative to use of Cowanesque Lake storage, but was found to be (1) ineffective in meeting key existing consumptive use mitigation needs at two major downstream nuclear power plants and (2) incompatible with long standing legal agreements for authorized use of the water supply storage. The Cowanesque Lake storage owned by SRBC serves to mitigate consumptive use at two large nuclear power plants located near Wilkes-Barre and Harrisburg, Pennsylvania, respectively. The power plants can thus continue operations using required cooling water when high electrical demands and critical low Susquehanna River flows coincide, typically occurring in late summer and early fall. It is not reasonable to expect the electric utility companies could or would significantly reduce their consumptive use during high electrical demand periods when public health and safety concerns exist...

...Instead, more effectively mitigating consumptive use focused on use of the water supply storage at Cowanesque Lake.

SRBC has been developing water supply storage capacity at key reservoirs in the Susquehanna River Basin to make releases to compensate for consumptive use by downstream industrial and municipal users during low flow periods. A legal contract for the use of the Cowanesque water supply storage space was negotiated and signed by SRBC and USACE in 1986. SRBC, in turn, also negotiated and signed a separate contract with electric utility companies in 1986 for repayment of the costs associated with the water supply storage space in Cowanesque Lake. Under the terms of these contracts, SRBC can request releases from its water supply storage space during low flow periods for the purpose of satisfying established consumptive use mitigation needs, such as those consumptive uses associated with electric power generation. (1)

Several years later the SRBC noted in Policy Number, 2020-01, “Consumptive Use Mitigation:”

This policy applies to the review of all consumptive use applications, including applications for new projects, project modifications proposing to increase consumptive use, project renewals, and notices of intent. The document has been developed to provide guidance to the regulated community and Commission staff regarding consumptive use mitigation requirements of the Commission. It may also be used by the public to gain information and insight on the Commission’s approach to consumptive use mitigation.

1 Draft Environmental Statement. “Cowanesque Lake Water Supply Releases to Cowanesque, Tioga, Chemung, and Susquehanna Rivers: Pennsylvania and New York,” June, 2013, 2-1.

The Commission has a long-standing partnership with the United States Army Corps of Engineers (USACE) regarding water supply storage and low flow management in the basin. This includes a 1986 water supply agreement for nearly 23,500 acre-feet of water supply storage at Cowanesque Lake purchased to provide consumptive use mitigation for Susquehanna Steam Electric Station, Montour Steam Electric Station, and Three Mile Island Nuclear Generating Station.

Regardless of the method, any mitigation located at the project site most effectively eliminates potential significant adverse impacts, locally and basin wide, and therefore is generally preferred by the Commission. (2)

I am requesting the SRBC tabulate “all consumptive use applications, including applications for new projects, project modifications proposing to increase consumptive use, project renewals, and notices of intent” as well as “grandfathered” projects, and measure the impact “regarding water supply storage and low flow management in the basin.”

2 Susquehanna River Basin Commission, Policy Number, 2020-01, “Consumptive Use Mitigation,” March 13, 2020.

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Testimony, Part 2.

Amazon was granted a 1,600-acre rezoning request on May 30, 2024 on land adjacent Susquehanna Steam Electric Station (“SSES”). Amazon officials said the company hopes to construct 15 data center buildings over the course of the next decade.

Cumulus data center campus owner and nuclear power plant owner Talen Energy agreed to sell the facility to AWS for approximately \$650 million. It is directly connected to the Susquehanna Steam Electric Nuclear Station. Cloud data service provider AWS will install its [hyperscale data center](#) at the site. Talen’s Nautilus crypto data center was not part of the deal with Amazon.

“The sites generate significant heat and humidity that must be mitigated to keep equipment functioning and prevent fire hazards and other safety issues. While cost-effective, cooling data centers takes a significant amount of water. The average data center uses one million to five million gallons of water per day, equivalent to the daily water use of a town with a population of 10,000 to 50,000 residents, according to a study this month by Frederick County, Maryland.” (3)

Data center water consumption varies based on factors such as facility size, cooling system type, and external temperature and humidity. Typically, these facilities consume less water in winter and more in summer. This is because higher outdoor temperatures increase the energy needed for cooling systems, which in turn requires more water to reduce the data center’s internal air temperature to optimal levels.

It is important to note that data centers also indirectly consume substantial water **off-site**. This occurs primarily at power generation plants that supply electricity to the data centers. However, Dgtl Infra’s analysis focuses solely on the **on-site** water usage, particularly for cooling and humidification systems in data centers.

Data centers use significant amounts of water **on-site** primarily for their **cooling system**, which comprises cooling towers, chillers, pumps, pipes, heat exchangers, condensers, and computer room air handler (“CRAH”) units. In addition, some computer room air conditioning (“CRAC”) units can be water-cooled, especially in larger installations.

While water cooling is efficient and particularly effective in managing high heat densities, making it a preferred option for large ‘hyperscale’ data centers, it raises environmental concerns. One of the primary issues is the significant water usage, which is a pressing concern, especially in regions facing water scarcity.

Data centers utilize water in their humidification systems to maintain optimal humidity levels, especially during winter. This practice is crucial for preventing the build-up of static electricity and ensuring the longevity and reliability of sensitive IT equipment.

The water consumption of data centers can be illustrated with two examples: i) hyperscale data centers and ii) wholesale and retail data centers. In both cases, a single data center uses several million gallons/liters of water each year. (4)

4 “Data Center Water Usage: Comprehensive Guide, “Digital Infra,” Mary Zhang, January 2024.