

Details emerge about proposed Joliet data center



By John Lippert
For the Chicago Tribune

Joliet wants to build the largest data center in Illinois right on top of an underground aquifer that's running dry after 150 years of pumping.

While this has alarmed people in Joliet, rapid advances in data center technology and water from Lake Michigan could make this project viable.

In an interview with the Tribune last week, Donald Schoenheider, executive vice president of Hillwood Investment Properties, gave the clearest picture yet of his water and electricity plans at the \$20 billion data center. Two years ago, Hillwood predicted the data center would need 5 million to 6 million gallons of water a day for cooling its computer servers and for routine water uses like employee restrooms. Now, the company has slashed this projected water use to 20 million gallons a year, Schoenheider said.

The project is a partnership between Hillwood, a Dallas-based real estate company owned by Ross Perot Jr., son of the 1992 presidential candidate, and PowerHouse Data Centers, a McLean, Virginia-based developer. Hillwood hasn't named the artificial intelligence and cloud storage companies who will occupy the space because they haven't signed their leases.

The interview came ahead of a Thursday meeting at which the Joliet Plan Commission will take a preliminary vote on land annexation and related issues for the data center.

The Joliet City Council could take a final vote as soon as March 16 as debate intensifies over data centers across the United States and the Chicago region. Similar disputes are playing out in Aurora; Naperville; Yorkville; Hobart, Indiana; and Mount Pleasant, Wisconsin.

"I think people's concerns about data centers are on point," said Rachel Ventura, an Illinois state senator whose district includes the Hillwood site.

"These companies have made billions and trillions of dollars on our data. Then they exploit our labor forces, exploit our water and energy, and then put all the debt and all the cleanup onto taxpayers."

Over 30 years, the data center will generate \$2.1 billion in property taxes for the city of Joliet and local schools, libraries, and park districts.

As many as 10,000 union construction workers will build it. Many will return to the site, Schoenheider said, as the data center's customers continually upgrade their equipment. He expects to hire 700 permanent employees at full buildout.

"The water use is not only significantly lower than what they were originally proposing, it's less than the light industrial (warehouse) use that we had put into our planning for this area," said Allison Swisher, Joliet's director of public utilities, in an interview Sunday.

"The majority of the water use is irrigation," she said, referring to landscaping around the data center buildings. If approved, Joliet's agreement with Hillwood will limit total water consumption at the site to 55 million gallons a year, according the city's website.

Hillwood's original request was so big the city could have met it only by using treated wastewater, Swisher said.

Under current plans, the data center will initially use water the city is still pumping from the aquifer, then switch to drinkable Lake Michigan water when the pipeline starts operating in 2030.

Joliet consumes 14.5 million gallons of water a day, with 29% of this amount being lost through crumbling pipes beneath the city.

The city is spending \$600 million to rebuild the pipes and cut this waste to a single-digit percentage by 2030 to qualify for an Illinois Department of Natural Resources permit to buy lake water.

A closed-loop system

In 2024, Schoenheider said, Hillwood planned to cool the computer servers at the heart of the 795-acre, 24-building complex using so-called evaporative cooling.

In this method, operators pump air through water-soaked filters. As excess heat from computer servers evaporates the water, it dissipates into the air. The water in the filters, meanwhile, must be continually replenished.

Under current plans, he said, water will circulate in sealed piping to cooling equipment best suited for the type of server being used. This could mean either chilled air or liquid coolants running through the servers. The pipes will then carry the coolants to the roofs of the buildings, where outside air will help cool it.

Schoenheider calls this a closed-loop system because, as in a car radiator, the cooling liquid recycles continuously through the sealed pipes.

Hillwood will need 2.6 million gallons of water to fill the cooling system as the data center ramps up between 2028 and 2033, he said.

The company will have to flush and refill the system every 10 to 15 years after that. But these refills are included in the 20 million gallons of water the company expects to use annually for cooling and other routine water uses.

Any discharged cooling fluid would be trucked to an off-site treatment facility, according to documents on the city's website.

"If you build 1,500 homes (on the site)," Schoenheider said, "they would use about 164 million gallons of water on a yearly basis. It's more than eight times the amount we use," he said, referring to cooling and other routine water uses.

If approved, the data center would lie just across Jackson Creek from where Kansas City-based NorthPoint Development has been battling residents since 2017 over its plan to build dozens of warehouses.

Schoenheider's project is standing apart from NorthPoint.

"If someone developed this site for warehouses, they could put up 7 million square feet, and that would generate 3,000 truck trips a day," he said. That's a truck every 30 seconds.

"You don't ever want that to happen," Schoenheider said.

A big hurry

Another data center controversy surrounds electricity usage.

Data center consumption could more than triple to 17% of all U.S. electricity by 2030, according to a report last week from the Electric Power Research Institute.

The Joliet data center will need 1.8 gigawatts of electricity, Schoenheider said. That's more than enough for all Chicago households.

To help cover future power demands, some residents and environmental advocates want data centers to pay their own way.

The Illinois Environmental Council is promoting a bill in the state legislature, for example, that would raise electricity rates for large data centers and incentivize them to build their own renewable energy sources.

Schoenheider said his customers are in too big a hurry for Hillwood to build its own Joliet source. But the company intends to buy as much renewable energy for the site as possible, he said.

On Jan. 13, Hillwood signed a transmission service agreement in which ComEd agreed to deliver power for 10 years, and Hillwood promised to compensate the utility even if its plans change.

The contract is worth "north of half a billion dollars," said Schoenheider, the former mayor of Lake Forest.

Max Leichtman, ComEd's director of economic and workforce development, said the utility is insisting on such commitments in part to weed out developers who promote projects in multiple states to find the lowest costs.

ComEd has signed eight such data center contracts so far, he said.

The environmental council bill would also empower the Illinois State Water Survey at the University of Illinois Urbana-Champaign to issue permits on whether nearby aquifers, rivers and lakes can sustain the cumulative water demands from data centers and others.

The state has no such permitting process for water consumption now.

Helena Volzer, water policy manager for a Chicago-based environmental group called Alliance for the Great Lakes, said closed-loop cooling uses less water on-site but requires more power.

This means closed loops can lead to "staggering" amounts of additional air pollution and water consumption wherever the power comes from, especially if the fuel is coal or natural gas, Volzer said.

Schoenheider said Hillwood chose closed-loop cooling to conserve water in Joliet. Wider environmental and rate impacts will be determined by everybody who uses the 13-state regional electricity grid that covers Joliet, he said, not his building alone.

John Lippert is a freelance reporter.