Great Lakes Region Unprepared for Increasing Water Use

Current & Future Threats

The Great Lakes hold the world's largest supply of surface freshwater – but it is also a finite resource that must be managed responsibly for today and tomorrow.

Simultaneously converging on the water resources in this region, large water-using industries including **data centers**, **critical minerals mining**, and **agriculture** have the potential to cause dramatic localized impacts. This fact sheet summarizes a larger report on the issue, available at greatlakes.org/wateruse.

Map illustrating the Great Lakes Basin.
Source: Ohio Department of Natural Resources

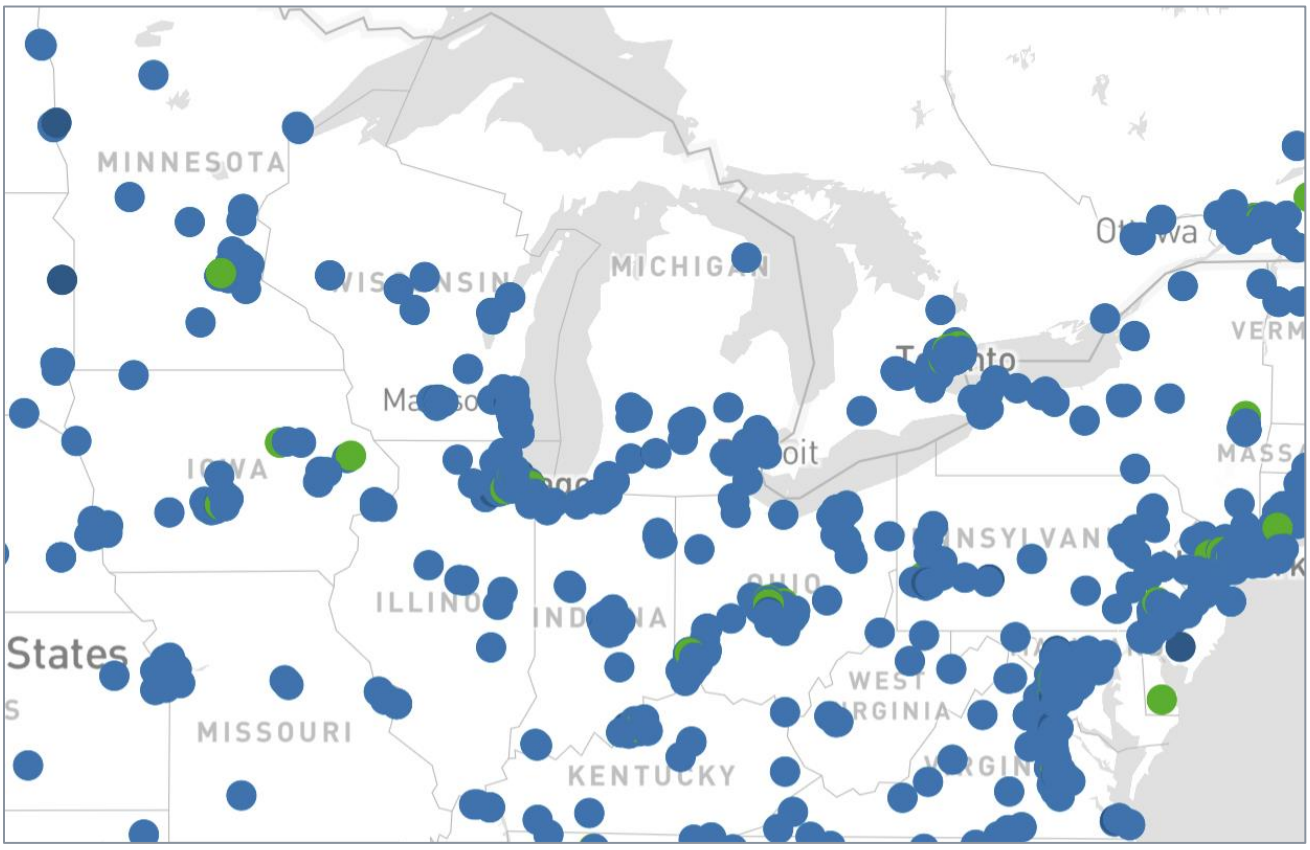
All of the Great Lakes states have enacted tax incentives over the last 20 years to attract industries like data centers and semiconductor chip manufacturing. **But the region is simply not prepared to manage the competing and overlapping demands that may soon lead to more conflict over water resources, especially groundwater.** Without the proper planning and management tools in place, water shortages, groundwater conflicts, and contaminated aquifers are all real risks.

- **Groundwater is critical.** Between 20 to 40% of the Great Lakes' water budget (the total water flowing in and out of the system) originates as groundwater and between 40 to 75% of Great Lakes state residents rely on groundwater for their drinking water.
- **Demand for water in the Great Lakes region is increasing.** The tremendous growth of the data center industry, increasing use of irrigation for agriculture, and critical minerals mining are all placing increased pressure on Great Lakes water resources. That demand has potential to peak during hot summer months when many sectors, including data centers, agriculture, and the public, use more water.
- **Water is not factoring into economic development decisions.** Economic development corporations and local governments are not holistically considering water resources when incentivizing large water users to locate.
- **States lack the ability to limit groundwater use.** No state in the Great Lakes region has the legal authority to halt or curb groundwater use before impacts occur.
- **Conflicts between industry, agriculture, and households over groundwater are already occurring** in the Great Lakes region: Southwest Michigan, the Central Sands region of Wisconsin, and Little Rock Creek in Minnesota.
- **Great Lakes cities are subsiding.** When aquifers are depleted and not adequately replenished, the pore space the groundwater once occupied can collapse – permanently reducing the storage capacity of the aquifer. This causes compaction underground and sinking at the surface level. Chicago, Columbus, Indianapolis, and Detroit are all subsiding at a rate of 2mm or more annually, threatening drinking water supplies, infrastructure, and public safety.

Data Centers Drive Vast Water Use

Data centers tend to cluster where fiber optic networks and energy transmission lines are readily available. The Great Lakes region has already seen tremendous growth in this sector and will continue to do so. As of August 15, 2025, **two Great Lakes states are in the top five in the nation for the number of data centers: Illinois and Ohio.**

- **Hyperscale data centers require vast amounts of water.** A hyperscale data center, the likes of which supports generative artificial intelligence, can use more than 365 million gallons of water a year, equivalent to what 12,000 Americans use in that time.
- **Data centers are high consumptive water users.** When evaporative cooling is used in data centers, more than half the water evaporates. When data centers are powered by fossil fuels or nuclear energy, water is also consumed for cooling. This water is lost to the watershed and not necessarily returned.
- **There are no water use reporting requirements when users purchase water from municipal supplies.** 97% of data center operators are buying water from municipal supplies, which can draw on groundwater aquifers. These users are not required to report or track their water use – less than 1/3 of data centers even track water use.
- **Population growth that follows data center development creates new water demand.** While not creating many direct jobs, growth in the data center sector often drives a second wave of indirect employment and population growth, requiring more drinking water resources.
- There are currently no conservation or efficiency standards for the data center industry.



Map showing data center locations and concentrations. Source: Datacentermap.com

State Policy Solutions

The Great Lakes states are fortunate to have a solid foundation to respond to these kinds of increased demands. Agreed to in 2008 by the eight Great Lakes states and the two Canadian provinces, the Great Lakes – St. Lawrence River Basin Water Resources Compact requires states to manage their in-Basin water use, set conservation and efficiency standards for that use, and, most importantly, generally prohibits diversions of Great Lakes water outside the Basin. Policy solutions states can implement to build upon the foundation of the Compact include:

- Funding and conducting **regional water demand studies** to determine capacity as part of ongoing conservation programs and for use in economic development decision-making.
- Requiring **disclosure of proposed water and energy use** and utilizing **community benefit agreements** to build community trust, secure best conservation and efficiency practices, and ensure long-lasting community value.
- **Eliminating sales and use tax incentives** specific to data centers.
- Requiring all water users with the capacity to withdraw more than 100,000 gallons per day to **register with the state and report their water use**.
- Examining consumptive **use permit thresholds** to determine if they are appropriate in the face of both new demand, simultaneously converging demands, and climate change.
- Fully funding **groundwater mapping** to increase understanding of groundwater recharge rates.
- Revising state **groundwater management laws** to allow state agencies to curb groundwater use where adverse groundwater impacts are likely but have not yet occurred.
- Setting **energy and water efficiency standards** for hyperscale data centers and large water using industries.

Learn More

To learn more about these threats to Great Lakes water quantity and policy solutions to address them, read the Alliance for the Great Lakes report: greatlakes.org/wateruse.