Flow
Water Advocates

Ensuring the waters of the Great Lakes Basin are healthy, public, and protected for all.

August 30, 2025

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Dear U.S. and Canadian Commissioners of the International Joint Commission:

Flow Water Advocates respectfully submits these public comments on the International Joint Commission's second Draft 10-Year Report on the Protection of the Waters of the Great Lakes, which discusses the consumptive use, diversion, and removal of water from the Great Lakes. Our comments and recommendations are offered to strengthen the long-term protection and sustainability of the Great Lakes under the Boundary Waters Treaty,[1] the 2000 Report, the new Great Lakes Basin-St. Lawrence River Basin Sustainable Water Resources Agreement[2] and parallel Great Lakes Basin-St. Lawrence River Basin Compact,[3] and the Great Lakes Water Quality Agreement.[4]

Under the Boundary Waters Treaty, the International Joint Commission (IJC) has ample authority to prohibit any diversion of the Great Lakes and connecting rivers or channels

[1] Treaty Between the United States and Great Britain Relating to the Boundary Waters Between the United States and Canada, U.S.-U.K., Jan. 11, 1909, 36 Stat. 2448, *hereinafter* BWT; more recently, Canada "acclaimed" (formally adopting what had been recognized and followed for nearly 100 years) the Canadian International Boundary Waters Treaty Act, Government of Canada 2001 (Royal Assent 18 December 2001).
[2] Great Lakes–St. Lawrence River Basin Sustainable Water Resources Agreement, Dec. 13, 2005 *hereinafter* Agreement, *available at*: https://gsgp.org/media/nvzkrpyv/great_lakes-st_lawrence_river_basin_sustainable_water_resources_agreement.pdf.
[3] Great Lakes–St. Lawrence River Basin Water Resources Compact, Dec. 13, 2005, *hereinafter* Compact, *available at*: https://www.glc.org/wp-content/uploads/GLC-Great-Lakes-Basin-Compact-2019.pdf.
[4] Great Lakes–St. Lawrence River Basin Water Resources Compact, Pub. L. No. 110-342, 122 Stat. 3739 (2008), *hereinafter* the GLWQA.

"affecting the natural flow or level" unless authorized by both countries,[5] and prevent or restore the boundary waters of the Great Lakes and ecosystem from "pollution."[6] The IJC has been charged with the authority and responsibility to address the systemic threats and continuing harms that plague these waters and impact the 40 million people who reside around the Great Lakes.

As a whole, Flow commends the recommendations outlined in the *2025 Review of the International Joint Commission's Report on the "Protection of the Waters of the Great Lakes."* In particular, we are pleased to see this report urging greater collaboration with Indigenous Nations and engaging with Indigenous Nations to determine whether and how they would like to contribute to decision-making, formally recognizing that Indigenous Nations are distinct rights holders, not "stakeholders," and including Indigenous representation in the Regional Body's membership.

In addition, we support the report's key recommendations to remain vigilant about significant new threats, including the threat data centers present to the water resources protected under the Compact and Agreement, and the need to consult with experts on the volume and impacts of artificial intelligence (AI) and data center projects in advance of sitings planned across the Basin. As part of this planning, the Compact and Agreement must better define key terms, including "reasonable water supply alternative," "largely residential," and "humanitarian exception."

We also strongly support the scientific recommendations related to the continued advancements of science and climate modeling, monitoring, and variation impacts, the establishment of a uniform methodology for reporting consumptive uses in all jurisdictions, the adoption of criteria for initiating interim cumulative impact assessments, improved data security for water use data compiled by the Great Lakes Commission, groundwater planning, and guidance on water conservation and efficiency for effective implementation.

We particularly appreciate this report's reevaluation of the 2015 recommendations to develop, harmonize, and implement a bi-national public trust framework as a backstop to the Agreement and Compact, in order to fill gaps and to deal with as-yet-undefined stresses likely to

[5] Each country reserved "exclusive jurisdiction and control over use and diversion" within their country subject to review of "use, diversion or obstruction" that would "affect water levels or flows on the other side of the boundary. BWT of 1909, art. II.
[6] BWT of 1909, *supra note* 1, art. II.

negatively impact the Great Lakes in the future. There is a critical need for a unifying framework that transcends political boundaries to protect these international and globally unique waters as a finite resource.

Our comments and recommendations below focus on water use and consumption by data centers and other large-volume water users, the 2015 IJC Report's public trust doctrine recommendation, continued scientific research, and climate change risks, impacts, and preparedness in the Great Lakes Basin.

1. **Data Centers: Balancing Economic Interests and Opportunities with Sustainable Energy, Water, and Climate Priorities for the Great Lakes Region**

The meteoric rise of data centers to support artificial intelligence (AI), large machine and cloud computing, and cryptomining across the country, including the Midwest, is raising complex policy choices and decisions affecting land use, long-term economic development trends, energy and water consumption, and emission and climate impacts. While data centers are the backbone of this new digital economy, AI's actual growth trajectory remains unclear. As a result, accurate demand forecasting in this nascent industry is difficult to predict, and creates a significant yet downplayed risk of unfinished infrastructure projects and stranded assets.[7] Herein lies an opportunity for federal, state, and provincial governments to assess the public trust impacts and costs and benefits of data centers, and to craft plans in partnership with industry that incorporate sustainable energy power options, water conservation and efficiency measures, wise land-use decisions, and priorities of existing industry, agriculture, and local communities.

Commercial computing (including data centers) accounted for an estimated 8% of commercial sector electricity consumption in 2024 and is projected to grow to 20% by 2050.[8] The eight Great Lakes states already host 872 data centers, and Ohio and Illinois are ranked among the

[7] Adam Barth et al., "The data center balance: How US states can navigate the opportunities and challenges," McKinsey & Company, August 8, 2025, *available at:* https://www.mckinsey.com/industries/public-sector/our-insights/the-data-center-balance-how-us-states-can-navigate-the-opportunities-and-challenges#/ (last accessed August 29, 2025).
[8] U.S. Energy Information Agency (EIA), "Electricity use for commercial computing could surpass space cooling, ventilation," June 25, 2025, *available at:* https://www.eia.gov/todayinenergy/detail.php?id=65564#:~:text=In%20our%20Annual%20Energy%20Outlook,per%20unit%20of%20commercial%20floorspace (last accessed August 29, 2025).

top five states with the largest number of data centers, according to the Data Center Map.[9] Thanks to a combination of a cooler climate, lower land costs, and access to abundant Great Lakes water for power generation and cooling, the Midwest is primed to emerge as a major new hub for data center construction,[10] or more aptly, "ground zero for data center growth."[11]

State	**Number of Data Centers**
Minnesota	60
Wisconsin	44
Illinois	222
Indiana	72
Michigan	53
Ohio	188
New York	143
Pennsylvania	90
Total Number of Great Lakes Data Centers (2025)	**872**

Note: available at https://www.datacentermap.com/

While much of the national data center debate focuses on their high energy needs, data centers also have high water demands for both energy generation and cooling requirements. A single large data center (a "hyperscale" data center) can consume anywhere from 1 to 5 million gallons of water per day – equal to the amount of water consumed by a town of 10,000 to 50,000 people.[12] According to scientists at the University of California, Riverside, just one

[9] *Data Center Map - Colocation, Cloud, Managed Hosting etc.* (n.d.)., *available at:* https://www.datacentermap.com/ (last accessed August 29, 2025).
[10] Ta, Linh and Widman Neese, Alissa, "The Midwest's data center boom is heating up," Axios, Apr. 16, 2025, *available at:* https://www.axios.com/2025/04/16/midwest-data-center-growth-energy-usage?utm_source=chatgpt.com (last accessed August 29, 2025).
[11] Starr, Stephen, "Are data centers a threat to the Great Lakes?" Bridge Michigan, May 20, 2025, *available at:* https://bridgemi.com/michigan-environment-watch/are-data-centers-threat-great-lakes/ (last accessed August 29, 2025).
[12] Yañez-Barnuevo, Miguel, "Data Centers and Water Consumption," Environmental and Energy Study Institute (EESI), June 25, 2025, *available at:* https://www.eesi.org/articles/view/data-centers-and-water-consumption#:~:text=Large%20data%20centers%20can%20consume,energy%20usage%20and%20carbon%20emissions (last accessed August 29, 2025).

100-word AI prompt uses an estimated one bottle of water (or 519 milliliters).[13] Cumulatively, "billions of AI users worldwide enter prompts into systems like ChatGPT every minute. Large language models require many energy-intensive calculations, necessitating liquid cooling systems."[14] U.S. data centers are thirsty, consuming 17 billion gallons (64 billion liters) of water for cooling, and these figures are projected to double or even quadruple, according to a 2024 report from the Lawrence Berkeley National Laboratory.[15] Microsoft reports that 42% of the water it consumed in 2023 came from "areas with water stress." Among the largest data center footprints, Google used 3.3 billion gallons of water in the U.S. alone, and 15% of its withdrawals came from areas with "high water scarcity." Water use for energy generation also remains high because 56% of the electricity used to power data centers nationwide[16] comes from fossil fuel steam-generating power plants.

All of the Great Lakes states, except New York, have current sales and use tax exemptions for data centers. However, no state in the region has imposed mandatory water conservation or efficiency measures. The Compact requires each state to impose notice and reporting requirements for new or increased water withdrawals that exceed 100,000 gallons per day (gpd), and consumptive uses of five million gallons per day require notice to the other states in the Compact. Water use is then recorded in all eight U.S. states and reported annually by the Great Lakes Commission (GLC).

As a result of the Compact and related state laws, if a data center uses groundwater and exceeds the 100,000 gallons/day (gpd) threshold, water use is recorded in all eight U.S. states and reported as part of the Great Lakes Water Database. However, if the same data center using the same amount of water is connected to a municipal system, current state laws in the U.S. do not require water use reporting. This loophole is problematic because most data

[13] Pranshu Verma and Shelly Tan, "A bottle of water per email: the hidden environmental costs of using AI chatbots," The Washington Post (September 18, 2024), *available at:* https://www.washingtonpost.com/technology/2024/09/18/energy-ai-use-electricity-water-data-centers/ (last accessed August, 29, 2025).
[14] Aynsley O'Neill, "AI Is Everywhere Now—and It's Sucking Up a Lot of Water," Living on Earth (September 28, 2024), *available at:* https://insideclimatenews.org/news/28092024/ai-water-usage/ (last accessed August, 29, 2025).
[15] Peyton McCauley and Melissa Scanlon, "Data centers consume massive amounts of water – companies rarely tell the public exactly how much," The Conversation (August 19, 2025), *available at:* https://theconversation.com/data-centers-consume-massive-amounts-of-water-companies-rarely-tell-the-public-exactly-how-much-262901 (last accessed on August 29, 2025).
[16] Gianluca Guidi *et al*, "Environmental Burden of United States Data Centers in the Artificial Intelligence Era," arXiv (2024), *available at*: https://arxiv.org/pdf/2411.09786 (last accessed August, 29, 2025).

centers are supplied by municipal or regional water utility companies.[17] States like New York, Illinois, and Minnesota are now considering legislation that would mandate water use reporting by data centers, even when the data centers are connected to municipal systems. Growing concerns over regional water sustainability are likely to push more states towards expanding reporting requirements in the near future.

As recently observed at a July 2025 World Forum workshop,[18] "Without reliable data on water consumption, particularly for industrial and agricultural use, policymakers cannot easily devise data-driven frameworks for water resilience." The Great Lakes Commission's 2022 Annual Report[19] also emphasizes the need for a basin-wide water budget and stronger accounting of consumptive uses. It concludes that inconsistent water use reporting—particularly for municipal-supplied withdrawals such as data centers—creates blind spots that prevent policymakers from evaluating cumulative impacts. The report recommends adopting uniform methodologies for tracking consumptive use, expanding reporting requirements to include high-volume industrial users, and making this information publicly accessible. These steps are essential to ensure transparency, accountability, and resilience in water governance.

A 2025 report[20] by the Alliance for the Great Lakes underscores that large water withdrawals from industries – including data centers, critical mineral mining, and agriculture –have great potential for causing dramatic localized impact, and concludes that "the region is simply not prepared to manage the competing and overlapping demands that may soon lead to more

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[17] Dashveenjit Kaur, "Cloud's hidden cost: Data centre water consumption creates a global crisis," AI & Cloud (July 15, 2025) *available at*: https://www.google.com/url?q=https://www.cloudcomputing-news.net/news/data-centre-water-consumption-crisis/%23:~:text%3DHyperscale%2520facilities%2520operated%2520by%2520companies,0.19%2520litres%2520per%2520kilowatt%252Dhour&sa=D&source=docs&ust=1756230036260016&usg=AOvVaw0HUL_HU9xTlqANiEtNzGGO (last accessed August 29, 2025).

[18] Mauro Gianni and Isidora Kosta, "What will it take to unlock investment in water infrastructure?" Insights (August 8, 2025) *available at:* *https://etedge-insights.com/sdgs-and-esg/what-will-it-take-to-unlock-investment-in-water-infrastructure/* (last accessed August, 29, 2025).

[19] Great Lakes Commission Board of Directors, "2022 Annual Report," Great Lakes Commission (2022), *available at:* https://www.glc.org/wp-content/uploads/GLC-2022-Annual-Report-web.pdf?utm_source=chatgpt.com (last accessed August 26, 2025).

[20] Helen Volzer, *A Finite Resource: Managing the Growing Water Needs of Data Centers, Critical Minerals Mining, and Agriculture in the Great Lakes Region*, Alliance for the Great Lakes (August 20, 2025), *available at:* https://greatlakes.org/wp-content/uploads/2025/08/AGL_WaterUse_Report_Aug2025_Final.pdf (last accessed August, 29, 2025).

conflict over water resources, especially groundwater."[21] Despite vast water resources, the region is already experiencing overextraction of groundwater aquifers, including in Southwest Michigan; Wisconsin's Central Sands region; Joliet, Illinois; Little Rock Creek, Minnesota; and Ottawa County, Indiana.[22] However, the report concludes that the Great Lakes Compact provides an important foundation and cooperative agreement for states to build lasting solutions.

Across the nation, advocacy groups are raising a host of interrelated energy, water, and climate concerns. They emphasize that water is a human right that must be protected by the public trust doctrine and the precautionary principle. Grave concerns center on the cumulative impacts of overpumping and depleting groundwater aquifers, tax breaks for the wealthiest companies[23] on the planet to use and profit from public water, growing water infrastructure costs for ratepayers, significant water conflicts among users, delayed transition from the fossil fuel economy, and failure to address climate change impacts[24] and water risks. Moreover, the speed of these projects coming online is so fast that it leaves little time for policymakers and advocates to respond and craft long-term, win-win solutions. Questions abound on how much of the projected growth is real versus speculative. Advocacy groups emphasize that this industry must not be a race to the bottom; rather, a holistic approach to economic development is needed to account for water extraction, use, and conservation, and to address inevitable conflict among water users. The Great Lakes are a finite resource, and the people of this region share an extraordinary responsibility to protect these public waters for current and future generations.

To manage sustainable economic growth in the Big Tech and data center industry, we need robust groundwater science and mapping, coupled with new protective groundwater policies in the Great Lakes region. The majority of groundwater in the region currently supports agriculture, public water supply, industry, and thermoelectric uses. But consumption and aquifer recharge are not uniform due to geological variations across the Basin, which, in turn,

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[21] *Id.*.
[22] *Id.*; *See also,* Patti Wetli, *Mega Data Centers Could Drain Water Supplies in Great Lakes Region if Protections Aren't Put in Place: Report*, WTTW, (August 20, 2025), *available at:* https://news.wttw.com/2025/08/20/mega-data-centers-could-drain-water-supplies-great-lakes-region-if-protections-aren-t (last accessed August 29, 2025).
[23] Six top tech companies with data centers include: Amazon, Meta, Google, Microsoft, Digital Realty, and Equinix.
[24] Four of the Great Lakes states, Illinois, Minnesota, Michigan, and New York, have passed climate change legislation with net-zero goals; however, data center authorizing legislation even in these states do not impose corresponding climate targets or standards.

can lead to seasonal or regional shortages.[25] Thus, the potential for conflict amongst water users is significant, and there are no legal requirements prioritizing residential drinking water and agricultural uses.

Governments and communities across the Great Lakes are now at a crossroads with Big Tech. Given the Great Lakes region's vast and globally unique water resources, it is incumbent upon political leaders and the public to demand transparency[26] and to set the terms for this industry's use of our water, energy, and land. The use of nondisclosure agreements and the lack of water use reporting requirements obscure the government's and the public's ability to plan and balance competing water uses and needs for the future.[27] What are the cumulative and regional environmental impacts of data centers, and how can we ensure the long-term availability of water and energy for the local communities? How will future conflicts between data centers and local municipal water needs be resolved while ensuring the long-term viability of groundwater aquifers?

Recommendations

We recommend that the IJC advise the federal, state, and provincial governments to:

- Require full disclosure of energy, climate, water, and land use impacts of data centers and other large water users *before* they are sited across the Great Lakes;
- Expand water use reporting of municipal water sources and other consumptive uses to be included in the Great Lakes Water Database;
- Track high-volume users—such as data centers, self-supplied commercial or industrial, irrigation, agricultural, and public water supply;
- Consult with regional experts to evaluate the volume and impacts of proposed water use and propose water and energy conservation and efficiency measures;

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[25] Freshwater Society, *Groundwater Governance in EPA Region 5*, May 2024, p.2: available at: https://assets.joycefdn.org/content/uploads/Groundwater-Governance-in-EPA-Region-5-Report.pdf (last accessed August 29, 2025).

[26] "The proliferation of large-scale AI products necessitates a transparent and comprehensive understanding of their AI serving environmental footprint." Cooper Ellsworth et al., *Measuring the environmental impact of delivering AI at Google Scale*, Google, (August 21, 2025), *available at*: https://arxiv.org/abs/2508.15734 (last accessed on August 29, 2025).

[27] Similarly, energy needs from the massive demand from data center expansion on the horizon are difficult to estimate because "the calculations behind those needs remain a proprietary black box." Jason Plautz, "Google offers peek into AI's energy use," E&E News by Politico, August 22, 2025, *available at:* https://subscriber.politicopro.com/article/eenews/2025/08/22/google-offers-peek-into-ais-energy-use-00518960 (last accessed on August 29, 2025).

- Improve forecasting and develop uniform protocols and reporting methodologies to measure energy use, water use, water consumption, and carbon emissions from data center operations;
- Require a better reporting and accounting system for existing and anticipated agricultural-related demand and impact on groundwater resources, given the dramatic recent increases in groundwater withdrawals for irrigation;[28]
- Direct the Compact Council and the Regional Body to establish guidance and enforce water and energy conservation and efficiency plans and standards to ensure implementation per the Compact;
- Require that water use and conservation plans consider Indigenous laws, treaties, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), and traditional ecological knowledge alongside Western regulatory frameworks;
- Conduct a review to identify where treaty-protected rights intersect with Compact and Agreement obligations, as well as permitting and enforcement processes;
- Strengthen research and monitoring of groundwater use and develop a basin-wide groundwater management plan that identifies a water budget, sustainable management goals, stressed regional aquifers, specific strategies for monitoring, data management, and achieving the plan's long-term objectives;[29]
- Support federal, state, and provincial funding for groundwater science, monitoring, and mapping; and
- Review and modernize groundwater laws to minimize potential sources of contaminant pollution and to protect drinking water sources.

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[28] Flow is overseeing a University of Michigan School for Environment and Sustainability (SEAS) graduate student team tasked with developing comprehensive groundwater management principles and recommended practices for the state of Michigan. Underscoring the need to better understand groundwater aquifers through improved mapping and accounting of future demand, the student team has documented the rise in the number of irrigated cropland acres and the number of irrigation wells in Michigan. "Irrigation demand is increasing dramatically in Michigan, with the total irrigated cropland area statewide expanding by around 65% from 1997 to 2017. The number of agricultural irrigation wells more than doubled from 2008 to 2020, suggesting that groundwater is absorbing the brunt of this increased freshwater demand. 255 million gallons per day were withdrawn for irrigation purposes in 2023. The southwest region of Michigan, where agricultural lands are abundant, is responsible for the largest share of these withdrawals." (citations omitted).

[29] Some states like Illinois, Indiana, and Ohio have conducted regional groundwater demand studies, examining aquifer capacity and surface water for current demand. In addition, these states should analyze how increased projected use will affect natural ecosystems. See Helen Volzer, *A Finite Resource: Managing the Growing Water Needs of Data Centers, Critical Minerals Mining, and Agriculture in the Great Lakes Region*, Alliance for the Great Lakes, August 20, 2025, p. 8., *available at:* https://greatlakes.org/wp-content/uploads/2025/08/AGL_WaterUse_Report_Aug2025_Final.pdf (last accessed August, 29, 2025).

2. The Public Trust Doctrine: Implementing the IJC's 2015 Public Trust Doctrine Recommendation

Section 1.3 of the Compact governing the eight Great Lakes states found and declared that:

- The Waters of the Basin are precious public natural resources shared and held in trust by the States;
- The Waters of the Basin are interconnected and part of a single hydrologic system; and
- The Parties have a shared duty to protect, conserve, restore, improve and manage the renewable but finite Waters of the Basin for the use, benefit and enjoyment of all their citizens, including generations yet to come

These findings recognize that the public trust doctrine extends to all waters of the Basin—lakes, streams, rivers, Great Lakes and connecting waters, and groundwater—and that they are a single hydrological system that the eight states have a duty to protect and conserve these waters and their ecosystems for the benefit of citizens and future generations. The Compact also recognizes that this public trust applies to all waters of the Basin, because navigable waters in creeks, streams, rivers, and the lakes are directly connected to non-navigable waters and groundwater, and with evapotranspiration, evaporation, and precipitation comprise a single hydrological cycle or hydrosphere. What happens to one or more parts of the hydrologic cycle results in effects on one or more of the others.

In the IJC's 2014 LEEP Report on harmful algal blooms in the Western Basin of Lake Erie, the IJC recommended that:

> [T]he governments of Michigan, New York, Ohio, Pennsylvania and Ontario should apply a public trust framework consisting of a set of important common law legal principles shared by both countries, as an added measure of protection for Lake Erie water quality; governments should apply this framework as an added decision-making tool in policies, permitting and other proceedings.[30]

[30] International Joint Commission, "A Balanced Diet for Lake Erie: Reducing Phosphorus Loadings and Harmful Algal Blooms, Report on the Lake Erie Ecosystem Priority," (IJC, Feb. 2014), p. 73., *available at:* https://ijc.org/sites/default/files/2014%20IJC%20LEEP%20REPORT.pdf (last accessed August, 29, 2025).

The IJC 2015 Review Report thoroughly evaluated and adopted Recommendation No. 2 that the public trust doctrine acts as a backstop principle to protect the waters of the Basin.[31] It stated that[32]

> It is well recognized that the Agreement and Compact are critically important and essential to protect the common good for both current and future generations. Nevertheless, looking ahead, the terms of the Agreement and Compact may not be sufficient to deal with all potential future water issues and emerging trends in common and statutory law. In response to these risks, the bi-national adoption of public trust principles may provide a backstop or supplementary framework to the Agreement and Compact.
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> *Findings: While the Agreement and Compact are necessary, they will not necessarily be sufficient in the future to protect the long-term ecological integrity and the many public and private uses of the Great Lakes. Bi-national adoption of public trust principles could provide an effective backstop in that regard.*
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> Recommendation No. 2: Great Lakes states and provinces should consider developing, harmonizing and implementing a bi-national public trust framework as a backstop to the Agreement and Compact, in order to fill gaps and to deal with as yet undefined stresses likely to impact negatively on the Great Lakes in the future.[33]

The 2025 Draft Report on the Review of the IJC's Report on the *"Protection of the Waters of the Great Lakes"* confirmed the substantial analysis behind Recommendation No. 2 in the 2015 Review Report.

> Similarly, there was general agreement that the substantial analysis and recommendation in the 2015 Report to encourage implementation of public trust doctrine as a "backstop" principle was not given sufficient attention to formalize into specific strategies and steps.

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[31] International Joint Commission, "Protection of the Waters of the Great Lakes Basin: 2015 Review of the Recommendations from the February 2000 Report," (IJC 2015), p. 7, see discussion of Public Trust Backstop Principle and Recommendation No. 2; *available at:* https://legacyfiles.ijc.org/tinymce/uploaded/Publications/IJC_2015_Review_of_the_Recommendations_of_the_PWGL_January_2016.pdf (last accessed August, 29, 2025).
[32] *Id.* at 5-6.
[33] *Id.* at 7.

Section 5.9 of the 2025 Draft Report states:

> The Compact declares the Great Lakes to be "precious public natural resources shared and held in trust by the States." The Agreement declares the waters of the Great Lakes Basin to be "a shared public treasure" and that the states and provinces "as stewards have a shared duty to protect, conserve and manage these renewable but finite Waters." This language is comparable to some degree with the public trust doctrine mentioned previously. The public trust doctrine in the U.S. and its Canadian equivalent are common law with the potential to assist the Great Lakes states and provinces to buttress protections for the waters of the basin. Its explicit recognition by the States and Provinces could provide a valuable supplemental tool to the Compact and Agreement.

Recommendation No. 15 of the 2025 Draft Report states that:

> It is recommended that the States and Provinces convene a panel of legal experts to ascertain the significance and potential of the public trust doctrine to assist in the protection of the waters of the Great Lakes while allowing for a public comment period on this matter.[34]

The public trust doctrine is essential to the protection of the Great Lakes and the submerged bottomlands. The public trust doctrine can be traced back to Roman law and is a staple of environmental protection provided by the United States common law. Specifically, three fundamental principles play a vital role in the public trust's backstop role to protect the Great Lakes:

- First, that the public trust land and water cannot be granted or subordinated for primarily private purposes;
- Second, that the government has an affirmative duty to protect public trust uses, and the bottomlands and water on which these uses depend; and

[34] International Joint Commission, "2025 Review of the International Joint Commission's Report on the "Protection of the Waters of the Great Lakes" (Draft Report, July 2025), p. 3, 5., *available at: https://www.ijc.org/sites/default/files/IJC%20Draft%202025%20PWGL%20Report_2025%2007%2031.pdf* (last accessed August, 29, 2025).

- Third, that the government and/or third persons are prohibited from materially obstructing, interfering with, or impairing these public trust uses, land and waters.[35]

Legal experts have documented that all eight Great Lakes states and the Provinces of Ontario and Quebec recognize the public trust doctrine.[36] In the Province of Ontario, the doctrine is known as a guardianship that protects the public rights of navigation and fishing.[37] In Quebec the doctrine is known as *patrimoine commun* or "common heritage" by which water is protected by the principle l'*etat guardien*, making the province the custodian of its water resources.[38] Under public trust law, the states as trustees and provinces as guardians have a legal responsibility to protect and conserve navigable waters and the submerged lands and ecosystems connected with them.

The Compact, the IJC Reports, and common and statutory laws of the states and provinces have incorporated the public trust doctrine, public rights, and legal duties. It remains for the IJC and eight states and two provinces through the Compact Council or Regional Body to implement this critical framework and principles to strengthen the Compact and decision-making and implementation of protections of the Great Lakes from diversions, consumptive uses, and withdrawals. By implementing public trust law, the governments, in turn, will be better prepared to address the increasingly frequent and intense climate change

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[35] FLOW Comments to IJC 10-year report, (July 8, 2015) p. 25, Fn 51 (citing Maude Barlow and James Olson, *Report to the International Joint Commission on the Principles of the Public Trust Doctrine*, November 30, 2011, pp. 8-25, 28-31): *available at* https://forloveofwater-wp-uploads.s3.us-east-2.amazonaws.com/wp-content/uploads/2025/08/FINAL-FLOW-7-8-2015-SUBSTITUTE-6-30-15-Comments-on-IJC-10-YR-Great-Lakes-report-w-Summary-of-Recommendations.pdf (last accessed on August 29, 2025); see also James Olson, *All Aboard: Navigating the Course for Universal Adoption of the Public Trust Doctrine,* 15 *Vermont J. Env. Law* 135, 170-172 (2014) (Basic and corollary principes of the public trust doctrine), *available at:* https://archive.savemiwater.org/wp-content/uploads/2017/10/All-Aboard-Public-Trust-article-VJEL-Issue2-2014-Olson.pdf (last accessed on August 29, 2025).

[36] James Olson, *All Aboard: Navigating the Course for Universal Adoption of the Public Trust Doctrine*, 15 Vermont J Env. Law 142-145, 152-164, and 164-169 (Section II."Historical Development of the Public Trust in the U.S. and Canada.") (2014); Robin Kunda Craig, *A Comparative Guide to the Eastern Public Trust Doctrines: Classifications of the States*, 16 Penn St. L. Rev. 1 (2007): *available at:* https://insight.dickinsonlaw.psu.edu/pselr/vol16/iss1/2/ (last accessed on August 29, 2025)..

[37] James Olson, *All Aboard: Navigating the Course for Universal Adoption of the Public Trust Doctrine*, 15 Vermont J Env. Law 163-164 (2014); *Queen v. Meyers,* 3 U.C.C.P. at 305, 357 (Can.). The Canadian Court recognized its "guardian" responsibility, and that it cannot itself violate the limitation on its power to alienate these Great Lakes navigable waters to private persons or purposes. Guardianship implies duty and responsibility, and the limitation on alienation or interference implies a right in citizens, at least those whose use has been or is threatened with harm and would have standing.

[38] James Olson, *All Aboard: Navigating the Course for Universal Adoption of the Public Trust Doctrine*, 15 Vermont J Env. Law 165-166 (2014).

impacts, pressures to privatize or commodify public waters, and other new or as yet unidentified threats to the waters, ecosystem, culture, and economics of the Great Lakes Basin.

While Recommendation No. 15 to convene a panel of experts will help identify strategies and steps to implement the public trust doctrine, it does not go far enough. Due to the urgency of increasing threats to the Great Lakes, magnified by climate change, the implementation of the public trust doctrine should remain a high priority as identified by the 2015 IJC Review Report and 2014 IJC LEEP Report. The public trust doctrine offers greater accountability for environmental governance and natural resource protection, and agencies and/or citizens through the courts can, in turn, prevent harm and overuse of trust resources and require restoration.

The incorporation of the public trust principles into the Compact could extend to the Great Lakes surface water and submerged lands, but could also apply to the groundwater inside the Basin as well. This is critical to public recognition and acceptance of the comprehensive hydrological system of the Great Lakes, as groundwater plays an essential role in the health of the Great Lakes Basin and its freshwater resources. The volume of groundwater in the Great Lakes Basin boundaries is equivalent to a sixth Great Lake, the size of Lake Huron.[39] Incorporating public trust principles within the Compact would also harmonize the Great Lakes states' duty as trustees of the Great Lakes with the affirmative duties provided for in the Compact. Thus, integrating public trust principles creates a comprehensive agreement by the Great Lakes states and provinces that rightly holds the public interest as paramount in decisions that affect the Great Lakes' hydrological and ecological systems. Any follow-up implementation strategy must ensure education and active compliance with public trust principles.

Recommendations

Our recommendations are designed to educate the governments and establish strategies and steps to implement the public trust doctrine to address diversions, consumptive uses, and related conduct that harms or threatens harm to the waters of the Basin. To implement the 2015 public trust recommendation, we recommend that the IJC:

[39] FLOW, *The Sixth Great Lake: The Emergency Threatening Michigan's Overlooked Groundwater Resource*, September 2018: available at: https://forloveofwater-wp-uploads.s3.us-east-2.amazonaws.com/wp-content/uploads/2018/09/FLOW-Groundwater-Report-2018.pdf (last accessed August 29, 2025).

- Elevate the strategies, steps, and actions to implement the public trust doctrine as a primary governance and backstop principle as a high priority of the IJC, governments, and citizens;
- Implement public trust doctrine trustee obligations as a management framework for Great Lakes waters, expressly including the protection and sustainable use of navigable waters, connected wetlands, instream flows, ephemeral streams, and riparian habitat;
- Articulate core public trust doctrine duties and require public trust findings in significant withdrawal, diversion, or discharge permits including determinations of (1) no substantial impairment of trust resources; (2) alternative analysis and selection of the least harmful alternative; (3) cumulative impacts; and (4) "reopener" clauses if conditions change;
- Advance the scientific understanding of hydrology and regard groundwater–surface water interconnectivity as presumptive in decision-making;
- Convene a conference with a panel of leading legal and policy experts, scientists, tribal members and scholars, and advocates to educate, evaluate, and establish strategies, steps, and actions for implementing the public trust doctrine as a governance principle to protect the waters, natural resources, ecosystems, and public and private riparian rights of the Basin;[40]
- Promulgate an enforceable rule under Section 3.3 of the Compact that integrates public trust standards and principles into the decision-making process for exceptions and consumptive uses by the Compact Council, Regional Body, and states where such exceptions and uses originate;
- Promulgate an enforceable rule that integrates public trust principles and Compact decision-making standards with actions or conduct that affects or impacts the entire hydrological cycle as a single hydrologic system, including the effects and impacts from global warming and climate change.[41]

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[40] Panels could include discussions on how this framework could serve to structure the relationship between citizens, the governments they elect, and the ecosystems protected. In addition, discussions could explore the linkages between the public trust doctrine and indigenous rights as complementary safeguards and legal frameworks for natural resource protection in the Great Lakes. See Wenona T. Singel and Matthew L.M. Fletcher, *Indian Treaties and the Survival of the Great Lakes* (December 22, 2006). 2006 Michigan State Law Review 1285, Available at SSRN: https://ssrn.com/abstract=955715 or http://dx.doi.org/10.2139/ssrn.955715 (last accessed August 29, 2025).

[41] Fundamentally, climate change, regardless of the cause, is a public trust issue, because the effects impair or subordinate the navigable and tributary non-navigable streams and groundwater. See Donald Wuebbles *et al.*, "An Assessment of the Impacts of Climate Change on the Great Lakes" Environmental Law Policy Center (March 2019), *available at*: http://elpc.org/wp-content/uploads/2019/03/Great-Lakes-Climate-Change-Report.pdf (last accessed

- Track and evaluate international trade laws, transactions, agreements, and actions that threaten the conversion of public trust waters of the Basin;
- Adopt an enforceable rule by the Compact and Regional Bodies declaring that the waters of the Great Lakes Basin are held in public trust and governed by public trust principles (this rule shall prohibit the privatization or sale of Basin waters as a product or private good unless expressly authorized, consistent with public trust uses, and without diminishing the quantity or quality of the waters); and
- Establish a policy guideline to track, evaluate, and take action to address threats of water privatization and commodification of public trust waters of the Basin;

Other related recommendations to consider include the following:

- Close the "water export" exception buried in the "product" exception to the Diversion Ban. Promulgate a rule or revise the definition of "product" so that water itself in a container transferred out of the Basin is not a "product." This would prevent the wholesale transport and transfer of public waters for primarily private purposes.
- Implement guidelines and criteria that address the ambiguities and implications of the interpretation of "public water supply" in the Foxconn diversion exception, because it transferred the public trust waters of Lake Michigan without authorization required by the public trust doctrine.
- Adopt a climate change policy and guidelines to address extreme weather, water levels, increased frequency and variability of high and low water levels, resilience, adaptation,

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August, 29, 2025). ; International Panel on Climate Change, "Special Report: Global Warming 1.5 C," October 2018, Summary for Policy Makers, Ch. 00, *available at:* https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/ (last accessed August, 29, 2025); D.R. Reidmiller *et al.*, "Fourth National Climate Assessment, Vol II, Impact, Risks, and Adaptation in the United States," US National Climate Assessment (2017), Summary Findings, Regions, Ch 21, *available at:* https://repository.library.noaa.gov/view/noaa/19487 (last accessed August, 29, 2025); Map, Global Impacts of Climate Change (2018), *available at:* https://www.bing.com/images/search?view=detailV2&ccid=5gnUMq59&id=347AC691A8314369BCC533D16908DD936D90D2F9&thid=OIP.5gnUMq598mxuueJFV1zk_AHaEF&mediaurl=http%3a%2f%2fwww.mapcruzin.com%2fimages%2fmapping-impacts-climate-change-500x276.jpg&exph=276&expw=500&q=Global+Climate (last accessed August, 29, 2025); International Joint Commission, "New Report Confirms 2017 Floods Lake Ontario and St. Lawrence River Caused by Extreme Weather," IJC Lake Ontario St. Lawrence River Board (2017), *available at:* https://www.ijc.org/en/new-report-confirms-2017-floods-lake-ontario-st-lawrence-river-caused-extreme-weather (last accessed August, 29, 2025).

The effects and impacts from climate change must be included in the definition of "diversion" by the Compact Council and Regional Bodies, and states' decision-making on water withdrawals, and exceptions.

decision-making framework tied to state-of-the-art water modeling and weather forecasting, with strategies for short, mid, and long-term crises;
- Connect water and diversions to renewable energy targets and goals;
- Research and implement a program to ensure common and statutory laws and decisions by states outside or inside the Basin will not undermine or adversely affect the Compact or its justification and defense; and
- Adopt a policy to address those consumptive uses or virtual water lost to the Basin from foreign investment and competition (e.g., Saudi Arabia's purchase of 1,000 acres in California to grow and export food back to Saudi Arabia, water use, rights, allocation, and control).[42]

Ultimately, strengthening the Great Lakes governance framework in this century will require changes to existing binational structures to ensure Anishinaabe, First Nations, and Métis representatives have equal standing alongside state, provincial, and federal authorities. While such a change would require a Compact Amendment, the IJC, in the interim, can recognize and highlight indigenous rights, principles, and participation as an essential element of current and future water governance.

3. Science in the Great Lakes: The Need for Continued Robust, Coordinated, and Funded Scientific Research

Robust, sustained, and binational scientific research is the backbone of sound decision-making for the Great Lakes. The IJC's role as a trusted convener of science across borders remains fundamental, particularly as climate, demographic, and industrial pressures accelerate. The Commission's initiatives—such as the *Comprehensive Great Lakes Science Plan*, the *Guidance Framework for Climate Preparedness*, and the current effort to develop a basin-wide water budget—are vital tools that help governments move from fragmented data collection toward coordinated, actionable knowledge.

Recent examples underscore why Great Lakes research is not only regional but global in significance. For instance, pioneering studies[43] on microplastics in the Great Lakes are shaping

[42] While Great Lakes states are not bound by the prior appropriation doctrine but by "reasonable use" and regulated riparianism, it is critical to understand shifts in water use and law vis-à-vis the expansion of the right to export or divert water by virtue of land ownership. Expansive notions of "reasonable use" will lead to massive pressure to divert and export water, or claim massive water for agricultural exports by other nations around the world.

[43] Sarah Mattalian, "Great Lakes Microplastics Research Could Inform National and Global Policy," Inside Climate News (August 23, 2025), *available at:* https://insideclimatenews.org/news/23082025/great-lakes-microplastics-research-global-policy/ (last accessed August 26, 2025).

negotiations for a global plastic pollution treaty, as experts in Geneva look to this research to understand the human health implications of plastics in freshwater systems. This is a powerful reminder: science conducted in the Great Lakes Basin reverberates far beyond our shores, and influences international policy and global environmental governance. Equally important are regional successes. The development of binational phosphorus load targets for Lake Erie, based directly on scientific monitoring and modeling, led Canada and the United States to commit to 40% reductions (from 2008 levels) in nutrient inputs under the Great Lakes Water Quality Agreement.[44] While the governments haven't achieved these targets yet, the IJC's scientific role is vital in coordinating and shifting regional policies designed to protect the health of ecosystems and communities alike.

Current binational scientific efforts are at risk. Federal budget reductions have already undermined core scientific capacity in the Basin. Since early 2025, NOAA's Great Lakes Environmental Research Laboratory (GLERL) has lost roughly 35% of its staff,[45] jeopardizing its ability to deploy buoys and maintain critical monitoring systems. The cuts have alarmed legislators and environmental leaders,[46] and the consequences are already being felt: GLERL was forced to suspend its public communication services, silencing real-time data on harmful algal blooms, wave conditions, and water quality that help protect 30 million residents and trillions in regional GDP.[47] This sudden blackout of early-warning tools leaves Great Lakes communities as vulnerable as if half the region's weather satellites were grounded during hurricane season—deprived of essential forecasts, alerts, and risk assessments. Already, seasonal harmful algal bloom forecasts in Lake Erie have been impaired, and evaporation monitoring has been scaled back – precisely the science governments need to anticipate

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[44] Environment and Climate Change Canada, "Governments of Canada and the United States announce phosphorus reduction targets of 40 percent to improve Lake Erie water quality," Government of Canada (February 22, 2016), *available at*: https://www.canada.ca/en/environment-climate-change/news/2016/02/governments-of-canada-and-the-united-states-announce-phosphorus-reduction-targets-of-40-percent-to-improve-lake-erie-water-quality.html?utm_source=chatgpt.com (last accessed August 26, 2025).

[45] Columbia Law School, "NOAA Cuts Decimate Great Lakes Environmental Research Laboratory," Columbia University in the City of New York (2019), *available at:* https://climate.law.columbia.edu/content/noaa-cuts-decimate-great-lakes-environmental-research-laboratory?utm_source=chatgpt.com (last accessed August 26, 2025).

[46] Will Be, "Klobuchar, Colleagues Raise Concerns About How Great Lakes Will Be Impacted by NOAA Firings," US Senator Amy Klobuchar (March 17, 2025), *available at*: https://www.klobuchar.senate.gov/public/index.cfm/2025/3/klobuchar-colleagues-raise-concerns-about-how-great-lakes-will-be-impacted-by-noaa-firings?utm_source=chatgpt.com (last accessed August 26, 2025).

[47] David Fair, "Issues of the Environment: Ann Arbor's Great Lakes Environmental Research Lab faces potential shutdown," Issues of the Environment (August 20, 2025), *available at*: https://www.wemu.org/show/issues-of-the-environment/2025-08-20/issues-of-the-environment-ann-arbors-great-lakes-environmental-research-lab-faces-potential-shutdown?utm_source=chatgpt.com (last accessed August 26, 2025).

climate-driven fluctuations in lake levels.[48] Looking ahead, new frontiers of science, from groundwater–surface water interactions to basin-scale climate–lake level modeling and the cumulative impacts of multiple stressors, require investment now. Without these investments, governments will be operating without vital scientific information necessary to manage many of the Basin's most pressing challenges.

Recommendations

We recommend that the IJC advise the federal, state, and provincial governments to:

- Guarantee stable, long-term funding for Great Lakes science programs;
- Strengthen the role of the IJC's Science Advisory Board as a hub for binational data synthesis;
- Prioritize open data sharing and harmonized methodologies across jurisdictions; and
- Ensure that science does not remain siloed, but instead directly informs policy guidance on consumptive use, diversions, and conservation across the Basin. This must also include a commitment to ensuring that science is responsive to the needs of frontline communities—particularly rural residents, Indigenous Nations, and environmental justice communities—who rely on accurate data to protect drinking water, cultural resources, and local economies.

Put simply: without robust, binational science, governments cannot meet their obligations under the Great Lakes Water Quality Agreement and the Compact or safeguard the drinking water, economies, and ecosystems that depend on it.

4. **Climate Change Risks and Impacts: Enhancing Modeling, Monitoring, and Research for Increased Preparedness and Actionable Planning**

The Great Lakes are entering an era of unprecedented climate volatility. Over the past decade, the depth and pace of climate variability in the Great Lakes have become far more profound than scientists or policymakers anticipated when the IJC last undertook its 10-year review in 2015. A growing body of research now confirms a clear trend: climate extremes—heat waves, cold spells, droughts, and precipitation surges—are not only becoming more frequent, but also more intense and more disruptive to the Basin's hydrological balance. This pattern is especially evident in record-breaking evaporation rates, rapid shifts in seasonal ice cover, and a doubling

[48] John D. Lenters *et al.*, "Assessing the Impacts of Climate Variability and Change on Great Lakes Evaporation: Implications for water levels and the need for a coordinated observation network," GLISA A NOAA Risa Team (2013), *available at:* https://glisa.umich.edu/media/files/projectreports/GLISA_ProjRep_Lake_Evaporation.pdf?utm_source=chatgpt.com (last accessed August 26, 2025).

of extreme temperature events since the late 1990s. Taken together, these findings demonstrate that climate variability is not a future risk but a present reality, demanding a major shift toward coordinated, consistent monitoring and preparedness across all jurisdictions.[49]

According to a University of Michigan August 2025 study,[50] unprecedented climate shocks are changing the Great Lakes forever, with increasingly common heat waves and cold spells that have profound implications for the region's weather, economy, and ecology. “Extreme heat waves and cold spells on the Great Lakes have more than doubled since the late 1990s, coinciding with a major El Niño event. Using advanced ocean-style modeling adapted for the lakes, researchers traced temperature trends back to 1940, revealing alarming potential impacts on billion-dollar fishing industries, fragile ecosystems, and drinking water quality.” [51]

These shocks are compounded by rising evaporation,[52] erratic precipitation,[53] and ice-cover decline[54]—all of which destabilize the delicate balance of the Basin’s hydrological cycle and intensify risks to infrastructure, communities, and ecosystems.

Despite advances in modeling, critical knowledge gaps remain. Governments currently lack consistent projections of localized lake-level variability, long-term evaporation trends, and the cumulative interactions between climate stressors and consumptive uses from data centers, agriculture, industrial, and other large water withdrawals. Equally pressing is the need for scenario-based preparedness planning: how will cities adapt if a simultaneous drought, harmful algal bloom, and industrial expansion stress a shared aquifer? How should policies evolve if climate models indicate permanent shifts in seasonal ice cover?

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[49] Carlyn Zwarenstein, “Heat waves and cold snaps: Study finds the Great Lakes have entered an era of extremes,” Great Lakes Now (August 20, 2025), *available at:* https://www.greatlakesnow.org/2025/08/heat-waves-cold-snaps-study-finds-great-lakes-era-of-extremes/?utm_source=chatgpt.com (last accessed August 26, 2025).
[50] University of Michigan, “Unprecedented climate shocks are changing the Great Lakes forever,” Science Daily (August 14, 2025), *available at:* https://www.sciencedaily.com/releases/2025/08/250813083616.htm (last accessed August 20, 2025).
[51] *Id.*
[52] Lenters, *supra* note 48.
[53] GLISA, “Extreme Precipitation,” A NOAA CapTeam (2017), *available at:* https://glisa.umich.edu/resources-tools/climate-impacts/extreme-precipitation/?utm_source=chatgpt.com (last accessed August 26, 2025).
[54] EPA, “Climate Change Indicators: Great Lakes Ice Cover,” US Environmental Protection Agency (2021), *available at:* https://www.mybib.com/tools/apa-citation-generator (last accessed August 26, 2025).

The IJC's 2023 Third Triennial Assessment[55] highlights the central importance of harmonized, binational methodologies to track water quantity and climate impacts across the Basin. It concludes that fragmented datasets and uneven monitoring weaken governments' ability to anticipate stressors such as consumptive use and climate variability, and recommends expanded cross-border data-sharing frameworks with explicit policy integration to ensure scientific findings inform permitting, governance, and emergency preparedness. Flow strongly supports this recommendation and urges the IJC to continue driving methodological consistency and binational coordination across all jurisdictions.

The NOAA Great Lakes Environmental Research Laboratory's 2024[56] work underscores why the IJC's call for enhanced climate modeling, monitoring, and preparedness is both urgent and necessary. GLERL's research on evaporation, ice-cover decline, and hydrological modeling has yielded critical insights into the climate-driven risks facing the Basin—from harmful algal blooms to long-term water level variability. Disruptions in science funding weaken the governments' ability to anticipate climate extremes and protect ecosystems and communities. Stable, long-term investment in federal science programs is therefore indispensable—not only to safeguard existing monitoring capacity but also to expand binational climate modeling, harmonized data collection, and scenario-based preparedness planning that translates science into actionable policy.

Recommendations

To close these scientific gaps and strengthen climate preparedness, we recommend that the IJC advise the Compact Council, Regional Body, and federal, state, and provincial governments to:

- Continue advancing climate modeling and convening workshops that build shared technical capacity;
- Encourage Basin jurisdictions to advance climate modeling, cumulative impact assessments, and groundwater planning as part of their shared public trust responsibility (these tools will, in turn, help ensure the Great Lakes remain healthy, resilient, and abundant for current and future generations);

[55] International Joint Commission, "Third Triennial Assessment of Progress on Great Lakes Water Quality," (2023), *available at:* https://www.ijc.org/en/2023-TAP-Report (last accessed August 26, 2025).
[56]NOAA, " GLERL Great Lakes Monthly Hydrologic Data (1860-2024)," NOAA Great Lakes Environmental Research Laboratory, *available at:* https://www.glerl.noaa.gov/ahps/mnth-hydro.html?utm_source=chatgpt.com (last accessed August 26, 2025).

- Support dedicated funding by federal, state, and provincial governments for Indigenous-led water quality monitoring, ecological assessments, and climate adaptation planning that combine traditional ecological knowledge with western science;
- Expand monitoring of evaporation, precipitation, and ice cover, particularly given recent budget cuts that have weakened these programs;
- Ensure that climate science is explicitly integrated into preparedness planning through scenario-based risk analysis for water use conflicts; and
- In advance of the IJC's next 10-year review, commit to ongoing monitoring of climate variability, new and increased water uses, population trends, and emerging science.

Conclusion

The future of the Great Lakes is at a crossroads. Climate volatility, industrial expansion, population shifts, agricultural drawdowns, groundwater stress, and new pressures from data centers and other emerging technologies are converging at a pace and scale never before experienced in the Basin. Yet these same waters remain the lifeblood of 40 million people, countless ecosystems, and a globally significant freshwater reserve. The IJC's role—as advisor, convener, and transboundary steward for current and future generations—has never been more critical. Flow urges the Commission to act boldly: to continue to support and advance robust, binational science; to embed the public trust doctrine as a backstop for governance; to prioritize groundwater protection as an essential part of its water quality mandate; to safeguard Indigenous rights and knowledge as coequal foundations for decision-making; and to close loopholes that leave consumptive uses underreported and unmanaged. The choices made in this decade will reverberate for generations. By embracing precaution, equity, and shared stewardship, the IJC can help ensure that the Great Lakes remain healthy, abundant, and protected for the public good.

Flow sincerely appreciates the opportunity to submit these public comments in support of developing lasting collaborative solutions that address the complex and systemic threats facing the Great Lakes region. Thank you.

Respectfully submitted,

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