Great Lakes—St. Lawrence River Basin Water Resources Council

Meeting Summary

June 16, 2022

10:14 a.m. EST

Courtyard Erie Bayfront
Niagara Port and Starboard Room
2 Sassafras Pier Erie, Pennsylvania 16507

Remote participation was available to individuals registering at:
https://attendee.gotowebinar.com/register/4202652722849391374
Listen only mode was available by calling:
Canada: +1 (647) 497-9429
United States: +1 (914) 614-3426
Passcode: 444-816-692

Notice:
Notice of the meeting was provided to the public through the Great Lakes Information Network's distribution list on May 17, 2022. Notice was also posted to the Great Lakes-St. Lawrence River Water Resources Council (Compact Council) website at www.glslcompactcouncil.org. The notice included an announcement that the meeting agenda, draft resolutions and materials to be discussed during the meeting were available on the Compact Council's website. Call-in information was also posted to the front page of the Compact Council website.

Call of Meeting:
10:14 a.m. EST— The meeting was called to order by Tim Bruno, acting as alternate of Governor Tom Wolf.

Roll Call:
The following Compact Council members, constituting a quorum, were present:
Illinois (designee of Governor J.B. Pritzker): John Rogner, Assistant Director, Illinois Department of Natural Resources.
Indiana (designee of Governor Eric Holcomb): Ryan Mueller, Deputy Director, Indiana Department of Natural Resources.
Michigan (designee of Governor Gretchen Whitmer): James Clift, Deputy Director, Michigan Department of Environment, Great Lakes & Energy.
Minnesota (designee of Governor Tim Walz): Jess Richards, Assistant Commissioner, Minnesota Department of Natural Resources.
New York (designee of Governor Kathy Hochul): Don Zelazny, Great Lakes Programs Coordinator, New York State Department of Environmental Conservation, on behalf of James Tierney, Assistant Commissioner, New York Department of Environmental Conservation.

Ohio (designee of Governor Mike DeWine): Brad Lodge, Water Inventory and Planning Program Manager, on behalf of Mary Mertz, Director, Ohio Department of Natural Resources.[1]
Pennsylvania (designee of Governor Tom Wolf): Tim Bruno, Chief, Office of the Great Lakes, Pennsylvania Department of Environmental Protection.
Wisconsin (designee of Governor Tony Evers): Shaili Pfieffer[1], Natural Resources Staff Specialist, on behalf of Preston Cole, Secretary, Wisconsin Department of Natural Resources

Actions Taken
Review of December 9, 2022 Compact Council meeting minutes
Mr. Bruno asked for a motion that the December 9, 2022 Compact Council meeting minutes be approved as posted. Mr. Mueller moved to approve, and Mr. Zelazny seconded the motion. The minutes were approved without objection.

Reports
Noting that the Regional Body meeting adjourned immediately prior to the Compact Council meeting, a motion was made by Mr. Rogner to incorporate minutes of the Regional Body reports into the Compact Council minutes. Mr. Clift seconded the motion. The motion was approved. Pursuant to the approved motion, the following reports are incorporated by reference into the Compact Council's record and re-printed in their entirety below:

State updates on implementation of the Great Lakes—St. Lawrence River Basin Water Resources Compact (Compact).

Pennsylvania

Mr. Bruno reported the following:

Pennsylvania continues to implement the requirements of the Compact and Agreement facilitating state and local programming of water use the Pennsylvania Department of Environmental Protection, known as DEP, is preparing to assemble the Great Lake water withdrawal water use statistics for water year 2021 and those will be compiled into the annual report on Green Lakes regional water use database.

Pennsylvania currently has no diversions within its jurisdiction. As mentioned during the previous meeting, in December of 2021, Pennsylvania observed a significant decline in overall water use in the 2020 water year. Pennsylvania recorded the lowest daily withdrawal amounts since the inception of compact and agreement. Withdrawal

[1] Signed proxy forms for individuals participating on behalf of official member designees are available upon request.

amounts decreased from 38.1 million gallons per day in 2019 to 30.5 million gallons per day in 2020. These are very small numbers compared to the other jurisdictions. It's just really a fraction of the overall Great Lakes water use.

DEP continues through to maintain the Great Lakes program website that include information about the Great Lakes and the St. Lawrence River Basin. Sustainable water resources Compact and Agreement. Resources are available on the website and they include the Pennsylvania Great Lakes Water Resources inventory and reporting document, and any interested individuals can view registered water users within the Pennsylvania Great Lakes basin as well as their annual water use from the 2005 water year forward. These documents and other information regarding the DEP Great Lakes program can be found at the DEP webpage, which is dep.pa.gov and searching Great Lakes program.

In 2022, DEP also has been continuing the process of reviewing and updating the Pennsylvania State Water plan. This is in accordance with the Water Resources Planning Act of 2002. Revisions are going to be addressing regional and statewide priorities, filling gaps from the previous plan, and examine emerging issues. The Great Lakes Water Resources Committee is a component that helps inform the plan from this region consisting of members from government, non-governmental organizations, and private industry, are creating updates including updates to the Great Lakes Basin Sections including both Lake Erie as well as Lake Ontario through the Genesee River Basin. These updates and revisions specifically identified the Compact and Agreement. Pennsylvania's coordination with other Great Lakes states and provinces is one of the best ways to protect water quantity.

The plan will maintain that Pennsylvania not only continues its current participation in Great Lakes interstate international governance venues, but plays a larger role in state and federal legislation and other policy measures that may impact Lake Erie and Lake Ontario. The Great Lakes Committee will meet for a hybrid virtual in person on June 23rd, 2022 (next week) on the adoption of these final regional updates, which if approved, will become part of the full state water plan scheduled for completion and late summer of this year.

More information about the upcoming meeting of the Great Lakes Regional Committee and this Pennsylvania State Water Plan can be found at the DEP webpage, which again is dep.pa.gov and searching “state water plan.”

Finally, Pennsylvania previously reported that DEP has a team of policy, legal and permitting staff examining how to augment its current regulatory methods for implementing the Compact in Pennsylvania. This effort continues in progress as being made in the evaluation of the existing regulatory structure and framework and looks to make recommendations very shortly. Those will be outlined as soon as those are

finalized. We're able to bring together the recommendations for any enhanced regulatory measures.

We'll be looking to the Compact Council and Regional Body to provide any type of feedback on those.

Illinois

Mr Rogner submitted the following report:

Lake Michigan Diversion

The Illinois Lake Michigan Water Allocation Program continues to manage Illinois' diversion of water from Lake Michigan in response to a 1967 Supreme Court Decree amended in 1980. This Decree limits Illinois' diversion to 3,200 cubic feet per second (cfs) based on a 40-year running average authorized by the "LEVEL OF LAKE MICHIGAN ACT" [615 ILCS 50] and implemented by the Illinois Department of Natural Resources, Office of Water Resources (Department) under their Part 3730 Rules ("ALLOCATION OF WATER FROM LAKE MICHIGAN").

Illinois' Diversion Accounting is overseen by the U.S. Army Corps of Engineers (USACE). The USACE's most resent certified diversion report, water year (WY) 2017 (October 1, 2016 through September 30, 2017) states Illinois' WY2017 certified flow is **2677 cfs with a 40-year running average of 3041 cfs**. As the older, much higher water use numbers drop out the back end of running average, the running average continues to generally decline reflecting much improved water conservation in Illinois.

Lake Michigan Water Use Data Collection

The Department continues to collect potable water supply, consumption, and water loss information from each of its 219 Lake Michigan Water Allocation Program permittees on an annual basis as required by their allocation permits. The process is highly interactive and allows permittees and the Department staff to work together to evaluate water system performance and investigate ways to reduce water loss. All permittees submitted data to the Department for WY2017. Information for water years 2018 through 2021 is still being received and reviewed by the Department.

All direct diverters are required to provide monthly pumpage information including daily pumpage values and the amount of water exported/sold to other Lake Michigan allocation permittees. A direct diverter is a permittee who has an intake structure on

Lake Michigan or is the first Illinois user of water diverted from outside of Illinois. There are currently 19 direct diverters. The Metropolitan Water Reclamation District of Greater Chicago submits monthly reports detailing Lake Michigan water used for Direct Diversion. Direct Diversion also includes releases at the Lake Michigan control structures including lockage, leakage, navigational make up, and discretionary flow. All data collected continues to be submitted to the USACE to be used for diversion accounting.

Water Conservation

In WY2019, the Department's regulatory threshold for non-revenue water was reduced from 12% to 10%. All Domestic permittees that exceed the Department's non-revenue water threshold are required to submit a water system improvement plan that outlines actions the permittee plans to undertake, along with a timeframe, to reduce non-revenue water to the 10% threshold requirement.

In WY2017, 94 of our 219 permittees were not in compliance with the Department's threshold requirement. Based upon the preliminary results for water years 2018 and 2019, the number of permittees not in compliance with the 10% regulatory threshold is increasing, primarily due to aging infrastructure. While these results are preliminary and based upon a short timeframe, the Department does recognize the need for additional action.

The Department is in the process of expanding the allocation program staffing to focus on water loss in the region and to evaluate the types of planning assistance that could be provided to permittees help reduce non-revenue water, particularly for economically marginalized and disadvantaged communities. The Department has identified a need to help these communities bridge the gap between a water loss reduction goal and developing a set of bid documents that would be needed to seek potential project grants. The Department is also collaborating with Cook County's Asset Management Department to achieve similar program goals for disadvantaged communities in Cook County.

Lake Michigan Water Re-Allocations

Approximately every 10 years, the Department reviews each domestic water permittee's Lake Michigan water allocation. The last comprehensive review was in 2008. The primary goal of this review is to adjust each permittee's allocation, as needed, to reflect future water demand through water year 2050. The water demand projections are developed based upon both historical use and future projections. In general, most allocations were reduced relative to the allocations developed in 2008.

Somewhat delayed by COVID, the Department provided a letter to its permittees in July 2021, explaining the re-allocation process and providing a table summarizing the draft revised allocations. The letter extended the opportunity to contact the Department or its consultant if they had questions or wished to contest the draft revised water allocation. In response, several permittees provided additional information for consideration. Each request was evaluated and if appropriate, a permittee's allocation was adjusted. The Department is currently working with its legal counsel to move forward with the prehearing and hearing process to finalize revised allocations.

New Allocations and Requests

The Department received an application for a Lake Michigan allocation from the City of Joliet in September 2020 and issued an allocation permit to the City in November 2021. Joliet's permit included a special condition requiring that their non-revenue water be reduced to 10% by WY2030 when the City anticipates beginning use of Lake Michigan water. The Department has also recently received eight new allocation applications for Lake Michigan water. The review and associated hearing process associated with considering each of these requests has recently been initiated by the Department.

Brandon Road

In collaboration with the US Army Corps of Engineers and with significant support from the state of Michigan, design of the Brandon Road Interbasin Project continues. The project is intended to create a system of deterrents that would reduce the risk of upstream movement of invasive carp and other aquatic nuisance species on the Illinois Waterway into the Great Lakes. The current plan involves a layered system of structural and non-structural control measures, to be constructed in increments, including technologies such as a flushing lock, an engineered channel with electric barrier, underwater acoustic deterrent, and air bubble curtain and other improvements. Project Design efforts thus far have encompassed five design charettes, 4 navigation workshops, 3 State and Province Forums with the help of the Joyce Foundation and the Great Lakes Commission, and the development of two physical models at the Corps' Engineering Research and Design Center (ERDC) to facilitate design. Design team leadership will be meeting at ERDC next week to inspect the physical models and to address key project challenges including growing project costs, private land rights, potentially hazardous waste remediation, Project Partnership Agreements, and project regulatory matters. The State of Illinois greatly appreciates the unified support of all the other Great Lakes States, and the Great Lakes, St. Lawrence Governors and Premiers in pressing for full federal funding for the Brandon Road Project in the Water Resources Development Act 2022. Both draft House and Senate versions of WRDA22 currently call for a 90/10 percent cost share between federal and non-federal parties.

Coastal Management Program and Shoreline Resilience

Finally, on January 1st this year, the Illinois Coastal Management Program was reorganized under the Office of Water Resources. This move has already allowed for better collaboration and shared resources to benefit both the Lake Michigan Program and the Coastal Management Program.

The Department continues to work to increase coastal resiliency. Illinois Beach State Park, which has been designated a Wetland of International Importance, is the only remaining natural dune and beach ecosystem in the State of Illinois. With funding from the Great Lakes Restoration Initiative, the US Army Corps of Engineers recently placed over 10,000 tons of stone five hundred feet offshore of Illinois Beach State Park and Hosah Park. These 750-foot-long "rubble stone ridges" are intended to work in concert to lessen storm waves and protect the unique dune and swale ecosystem while preserving views and enhancing fish habitat. If this pilot project works as well as anticipated, this practice could be duplicated at other key erosion sites along the Illinois shoreline and beyond.

The Department is also moving forward with the construction of a shoreline erosion project that will protect nearly 2.2 miles of Illinois Beach State Park shoreline. Rather than using conventional shoreline armoring, the design for this reach of shoreline seeks to guide and direct instead of simply preventing the movement of sand. The approach uses creatively shaped and formulated islands and submerged reef structures, positioned out in the lake rather than built directly along the shore, reducing the erosive force of incoming waves, redirecting nearshore currents, and providing a new home to shoreline aquatic and avian species. The lessons learned through this project will help the region explore how a living shoreline design can manage erosive wave forces while remaining as natural as possible.

Indiana

Mr. Mueller provided the following report:

On December 10th, 2021, Indiana State Agencies, including the Department of Natural Resources, Department of Environmental Management, Department of Homeland Security, and the Indiana Finance Authority met with executive leadership from the Louisville, Chicago, and Detroit districts of the U.S. Army Corps of Engineers.

The NL partner meeting provides an opportunity to share programmatic updates, discuss federal and state water management priorities and seek to improve process efficiencies. Topics of discussion during this meeting included the federal infrastructure bill, permitting of construction activities along the Lake Michigan shoreline, and

opportunities to leverage state funding through USACE programs such as planning assistance to states and flood plain management services.

Indiana has completed water use reporting for the year 2020. Currently, there are 1065 significant water withdrawal facilities registered within the basin. A significant water withdrawal facility has the capacity to withdraw a hundred thousand gallons a day or more. There have been about 30 new facilities added in the past two years, primarily irrigation. Water use in the basin for 2020 totaled approximately 500 billion gallons. There has been a decrease of about 250 billion gallons over the past five years, mainly driven by energy production and industrial use that have implemented conservation measures or have ceased their operations. Of the 1065 water withdrawal facilities, approximately 34 billion gallons are withdrawn from groundwater and approximately 465 billion gallons are drawn from surface intakes. And finally, when you compare the withdrawal versus the capacity of these systems, about 21.5% is withdrawn compared to the total capacity for surface water and about 8% for groundwater.

Michigan

Mr. Clift submitted the following report:

1. Water Use Advisory Council

Michigan's Water Use Program continues to work with the Water Use Advisory Council (WUAC), the key collaborative stakeholder forum that coordinates research and provides programmatic support for water management in Michigan. This spring, the Michigan Legislature approved $10 million to fund recommendations made by the WUAC's 2020 biennial report. The recommendations will bring more water efficiency educators in the agricultural sector, an assessment of all Michigan programs for water conservation, better data, better models, and better accessibility to data, among others.

One of the recommendations made in the last WUAC report was to assess Michigan's new and existing climate, energy, and water infrastructure programs and initiatives to identify opportunities to further advance Michigan's water conservation goals and objectives. A team from the Dow Sustainability Fellows program studied the topic and presented their report early 2022. The report highlighted several items that will be included in the next set of recommendations of the WUAC or acted upon soon.

The Office of the Great Lakes (OGL) and Michigan Sea Grant awarded a two-year grant to Michigan State University (MSU) to develop a Water User Committee (WUC) User's Manual and conduct a series of case studies in which WUCs are created to demonstrate the strategies in the manual. The WUC User's Manual will provide resources, information, tools, tactics, and steps that will enable WUCs to develop realistic shared solutions to sustainably manage water use. This project started in February 2022.

2. Data Collection and Modeling

To date, over 7,600 large quantity withdrawals have been registered through Michigan's Water Use Program. The program's geologists are also reviewing hydrogeological studies and groundwater models submitted in support of water and other natural resource (e.g., sand dune mining) permit applications. Michigan's Water Use Program would like to hire an additional geologist to review groundwater models. Workloads permitting, Michigan's Water Use Program would like to be able to create and calibrate their own groundwater models. Michigan's Water Use Program also collaborates with the U.S. Geological Survey's Upper Midwest Water Science Center, who are creating their own groundwater models.

Michigan continues to pursue opportunities to improve data collection and sharing to manage state's surface water and groundwater resources. EGLE is currently going through Lean Process Improvement activities to develop an agency-wide groundwater data warehouse. The WUAC has a related recommendation in their 2020 report to create a master environmental data warehouse that would include groundwater, surface water, soils, sediment, and geologic data. EGLE also developed several web and geographic information system applications to display environmental and geologic data as well as sites of environmental contamination.

MSU completed two pilot projects for EGLE. The first pilot project involved using transit sonar surveys to map the bathymetry of inland lakes more accurately in Michigan. Michigan has approximately 16,000 inland lakes that have areas of at least five acres. Only 2,700 of those lakes have bathymetry maps, most of which date from the 1940s and 1950s, prior to the widespread use of sonar technology for bathymetry mapping. The other pilot project involved using geographic information system (GIS) analyses to edit out non-perennial streams from the high-resolution National Hydrography Dataset. Teams verified their findings in the field using EGLE's procedure for stream evaluations. The pilot project leaders presented their projects to the WUAC Data Collection and Models Committees.

Those committees will be discussing to propose any recommendations concerning those pilot projects to the WUAC before inclusion in the council's next report to Michigan's legislature, which is due December 2022.

3. MI Healthy Climate Plan

On April 22, Michigan released the MI Healthy Climate Plan. The plan proposes to build a more healthy, prosperous, and just Michigan, while achieving 100 percent carbon neutrality by 2050. The plan also focuses on specific actions to reduce emissions by 52 percent by 2030 in energy production, transportation, homes/buildings, industry, and natural/working lands. The plan's development included extensive stakeholder and public engagement. The Office of the Climate and Energy is working with OGL and EGLE

programs to link water use management to the carbon emission reductions needed to achieve the goals of the plan.

4. Outreach and Education

EGLE organized a variety of outreach events over the spring to address Michigan's education and outreach goals. EGLE's Office of the Clean Water Public Advocate hosted Fix-a-Leak Week in March to raise awareness about water leaks and provide resources to find and address common household leaks. This year, the week highlighted the nexus between water and energy, as wasted water due to leaks also means wasted energy to pump, treat and heat the wasted water.

The Office of the Clean Water Public Advocate also hosted Drinking Water Week in early May, collaborating with other state agencies to educate the public on where their drinking water comes from, how to find out about their water quality, and who to contact with concerns. The team held activities to explain where our drinking water comes from including videos, children's' activities and social media engagement.

EGLE also hosted a virtual Great Lakes Water Infrastructure Conference focused on the water infrastructure challenges faced by the Great Lakes region and solutions to those challenges. The conference attracted over 1,000 participants from 21 states.

In mid-May, OGL and the Great Lakes Governors and Premiers co-hosted a session at the annual conference of the International Association for Great Lakes Research (IAGLR), held this year as part of the Joint Aquatic Sciences Meeting in Grand Rapids. The session focused on improving and implementing water conservation at the basin scale.

Most recently, from June 4-12, OGL hosted Great Lakes and Fresh Water Week to raise awareness of the Great Lakes and Michigan's inland lakes, rivers, streams and groundwater and focusing on how each of us can be a water champion, even by taking seemingly small actions. Among many activities, the Water Use Program hosted a public webinar about how water is used in Michigan and the From Students to Stewards Initiative for K-12 freshwater literacy announced new grant recipients. EGLE partnered with the Department of Natural Resources and the Southeast Michigan Council of Governments to host events.

Minnesota

Mr. Richards submitted the following report

- Overall, water use in the Lake Superior Basin in MN remained mostly stable from 2020 to 2021.

  - There was a large increase in power production cooling water use in the basin.
  - The City of Duluth has reduced their water use five years in a row, dropping from 4.9 billion/gal/year in 2017 to 3.6 billion/gal/year in 2021.

- After a summer of significant drought and wildfires, much of the Lake Superior basin saw 100-160 inches of snowfall this winter. A cool spring resulted in two feet of snow lingering in the woods until late April. Lutsen Mountain stayed open for skiing until May 7, marking the longest season and the latest closing date in the resort's history.

- A combination of heavy rain and melting snow caused washouts, road closures, and flash flood warnings for the basin in May. Flood warnings were also issued for much of the Minnesota-Ontario border along the Rainy River. The entire Lake Superior basin was in High Flows or Flood Flows the week of May 15. Stream flow and river levels are gradually dropping.

- Lake Superior water levels are typically near their seasonal low point in early spring. As of April 2022, water levels remained slightly below the seasonal long-term average[i]. Water levels are expected to rise over the coming weeks in response to spring rainfall and snowmelt runoff.

- New Bulk Water Transport Law: MN passed a new Water Law that other states may find interesting. This law went into effect August 2021.
  - Bulk Water Transport – Like other Great Lake states, Minnesota has a law that treats any proposal to withdraw and remove water from Lake Superior (greater than 5.7 gallons) to be treated as a diversion. Additionally, the MN Legislature passed as **statewide** law on bulk transport. (https://www.revisor.mn.gov/statutes/cite/103G.271 *Subd. 4b.**Bulk transport or sale)*** In part, the law states *the commissioner may not issue a new water-use permit to appropriate water in excess of one million gallons per year for bulk transport or sale of water for consumptive use to a location more than 50 miles from the point of the proposed appropriation.* This would prohibit requests such as the Water Train proposal, but would allow for rural water supply systems.

- President Biden visited the Duluth/St. Louis River area on March 2 to highlight infrastructure investments to clean up areas around the Great Lakes. The St. Louis River Estuary is the largest freshwater estuary in North America and is the headwaters of the Great Lakes.
  - The U.S. Environmental Protection Agency (EPA) announced over $100 million in funding for the Great Lakes restoration in portions of the St. Louis River near Duluth. Funds will restore Munger Landing, Spirit Lake, and Scanlon Reservoir, which are among the highest priority sites within

the St. Louis River Area of Concern for their cultural and historical significance. A large portion of these projects will be funded through the Bipartisan Infrastructure Law.

- Other Upcoming sustainability projects include:
    - Restoring manoomin (wild rice) in Kingsbury Bay is a long-term goal of estuary resource managers. Seeding wild rice is planned to be an annual occurrence in Kingsbury Bay as part of larger efforts to restore manoomin throughout the estuary.
    - An estimated $7 million will be spent restoring fish and wildlife habitat in Perch Lake which was once a bay of the St. Louis River estuary. The construction of U.S. Highway 23 nearly eliminated this connection, drastically reducing the flows. The goal is to restore deep water habitat and improve flows between the Lake and the St. Louis River estuary. This project is scheduled to begin in summer 2022 and will require two years to complete.
    - The MN Pollution Control Agency and Environmental Protection Agency researchers, will collect and analyze data to monitor habitat recovery at Kingsbury Bay and Grassy Point.
    - The Minnesota Land Trust is leading a companion project to restore and enhance additional habitat at Grassy Point.
    - MDNR ordered a new 108’ fishing pier that will be installed at the end of Indian Point in summer 2022. The City of Duluth will connect the new pier to the existing Marten Trail.

- Icelandite Fen was purchased by the DNR with funding from the Great Lakes Restoration Initiative (GLRI). It is currently in process to be designated a Scientific and Natural Area.

- The DNR (Coastal Program) is demonstrating the use of nature-based shoreline protection on Minnesota’s Lake Superior coast. At five DNR facilities, “living shorelines” will combine vegetation and other natural materials and to help protect the shore and the species living there from changing water levels and coastal erosion. This is a collaborative project with NOAA, with funding from the Great Lakes Restoration Initiative.

- DNR fisheries received Great Lakes Restoration Initiative (GLRI) funding for two stream health and restoration projects in 2021.

New York

Mr. Zelazny submitted the following report:

Water Withdrawal Permit program. NYS DEC's Division of Water currently regulates by permit or registration all water withdrawal systems with the capacity to withdraw 100,000 gallons per day or more within the Basin. This includes 695 actively reporting facilities within the Great Lakes Basin and through ongoing permit enforcement we have achieved 100% compliance in required reporting. Each permit has required the submittal of a water conservation plan. The main objective of the plan is to promote implementation of the most environmentally sound and economically feasible water conservation measures. Components of these plans must include, at a minimum, 1) customer and source metering, 2) water auditing, 3) leak detection and repair and 4) outdoor water use management.

A couple additional updates related to our water resource management include:

Drinking Water Source Protection Plans (DWSP2). This program pairs communities with department staff and consultants at no cost to evaluate potential threats/contaminants through the development of an overview of their water supply system. Communities, with special emphasis on Environmental Justice communities, then work with staff to identify protection and management methods as well as an implementation timeline all specific to their municipality. Participants typically develop a Project Management Team made up of community stakeholders, local government officials, and agricultural/industrial/business representatives to develop and promote implementation of the Plans. The thing I like most about this program is that it puts local officials in the driver's seat to learn about and protect their own drinking water sources while building capacity by working side by side with state staff and consultants. Communities with approved plans also receive extra credit for the state's Water Quality Improvement Program grant program. DEC runs this program in conjunction with DOH, DOS, and Agriculture and Markets. https://www.dec.ny.gov/chemical/115250.html

Community Impact Grant program (CIG). Although this program is not specific to water use and conservation, State funds are available from the Department of Environmental Conservation's Office of Environmental Justice to qualified community-based organizations for grant-based projects that address the exposure of underserved communities to multiple environmental harms and risks. Applicants are able to apply for amounts up to $100,000.

These grants have helped to:

- Empower and involve economically disadvantaged communities into finding solutions to public water supply contamination, developing alternate or back-up supplies, and promoting innovative water conservation methods;
- Engage residents in addressing and understanding environmental challenges they face; and

- Provide opportunities for improving community health, safety, and sustainability.

To be eligible for the grant they must be a community group working on a project that is located in or serves an environmental justice community.
https://www.dec.ny.gov/public/31226.html

Ohio
Mr. Lodge submitted the following report:

The Ohio Department of Natural Resources (ODNR) Division of Water Resources (Division) continues to collect CY2021 water withdrawal data from its 2,012 active registered facilities. To date, 95% of the facilities within the Lake Erie Basin have reported, and the Division is diligently working to collect the remaining delinquent data.

Division staff began compiling Ohio's 2021 Lake Erie Basin water withdrawals, consumptive uses, and diversions pursuant to the protocols established by the Compact.

On March 14, 2022, the Chief of the Division issued an Order approving the first New Water Withdrawal and Consumptive Use Permit within the Lake Erie Basin. The Permit approved a ground water withdrawal of 3 MGD for a proposed aquaculture facility in Williams County, Ohio. All water will be returned to the Basin less a consumptive use of .065 MGD.

Last year, ODNR was pleased to report the roll out of the State of Ohio Water Withdrawal Atlas. The Atlas concisely summarizes the data collected from the Water Withdrawal Facility Registration Program to assist in answering commonly asked questions regarding water use and to promote conservation focused initiatives. This year, the atlas was updated to reflect 2020 water use data and a Lake Erie Basin mapping component was added.

Water conservation and efficiency continues to be a high priority for ODNR. This year, our conservation webpages were updated with current conservation material and we now have information for each of the water use sectors to use in their efforts.

In 2019, ODNR shared Governor DeWine's new H2Ohio initiative, which is a water quality initiative to ensure safe and clean water for all Ohioans. The Governor, the Ohio Department of Agriculture, the Ohio Department of Natural Resources, the Ohio Environmental Protection Agency, the Lake Erie Commission, and many partners, including the Ohio Agriculture Conservation Initiative (OACI) have worked together to invest in projects across Ohio that will reduce nutrients and provide other long-term economic and water quality benefits to communities statewide. This program is a comprehensive, data- driven approach to improving water quality and is focused on

reducing phosphorus, creating wetlands, addressing failing septic systems, and preventing lead contamination.

Some of the progress to date includes the following initiatives:

- Total investments rose to $87.9 million with over 43 nonprofit conservation partners engaged- and rising.

- Total projects rose to 83, with over 60 of them in the Lake Erie Basin

- Private landowners are eligible for additional funding through ODNR's Water Quality Incentive Program. This program provides a one-time payment of $2,000 per acre for new enrollment in the federal Lake Erie Conservation Reserve Enhancement Program for wetland restoration and forested riparian buffers to help improve water quality in the Lake Erie watershed. This program currently supports over 150 private lands projects in the Western Lake Erie Basin.

- Following the program's success in the Lake Erie Watershed, The H2Ohio program expanded statewide in 2021 with a successful first round of the Ohio River Basin H2Ohio Wetland Grant Program that saw 10 water quality improvement projects funded across the state. In 2022, Governor DeWine announced a second round of funding for $3 million that will result in 9 additional wetland projects in the Ohio River Basin.

Wisconsin
Ms. Pfeiffer submitted the following report:

City of Waukesha Diversion
The City of Waukesha Diversion project continues to move forward, with an expected completion date in 2023.
As previously noted, the City of Waukesha received the state diversion approval in June 2021. Information on permits and approvals is available on the Wisconsin DNR website, City of Waukesha diversion page and Wisconsin DNR representatives are happy to discuss any aspects of City of Waukesha's diversion approval and implementation further with interested parties.

Village of Somers
Wisconsin received a straddling community diversion application from the Village of Somers to divert up to 1.2 MGD from the Lake Michigan Basin to the Mississippi River basin with return flow to Lake Michigan. The Wisconsin DNR requested additional information from the Village. The Village provided the information in September 2021. The Wisconsin DNR held a public hearing on November 10th and the public comment

period closed on November 30, 2021. The Wisconsin DNR has followed all requirements of the new Regional Body and Compact Council procedures with this application. The Wisconsin DNR issued a decision on the Village of Somers approving the diversion February 23, 2022. The Village expects to begin diverting Lake Michigan water in mid-July 2022.

Administrative Rules

Wisconsin DNR has started the process of promulgating rules related to Water Supply Service Area Plans and Diversion applications. These rules do not change any of the Compact standards as the standards are codified in Wisconsin's Compact Implementing legislative, but rather describe the procedures and application requirements for plans and diversion applications. The scope statement for the rules will go before the DNR Board in June, if approved the DNR will begin work drafting rules.

Water Use

Water use reports for 2021 were due to the Wisconsin DNR March 1, 2022. Ninety-three percent of these reports have been submitted to date, with 69% of these reports submitted online. Wisconsin is on track for reviewing these data and submitting the water use report to the Great Lakes Commission in August.

Water Use Permits

Wisconsin has two tiers of Water Use permits in the Great Lakes Basin, individual permits for water withdrawers that withdraw more than 1 million gallons of water for thirty consecutive days and general permits for water withdrawers that withdraw between 100,000 gallons per day and 1 million gallons of water per day for thirty consecutive days. The individual permits have a 10-year permit term. Individual permits were initially issued in 2011, in December 2021 Wisconsin DNR reissued 323 individual water use permits, changed 222 individual water use permits to general permit for property owners that no longer met the criteria for individual permits, and reissued one modified individual water use permit for a property owner that increased water use over the 2011 withdrawal amount.

Water Quantity Monitoring StoryMap

Wisconsin DNR completed a StoryMap highlighting monitoring efforts related the groundwater levels, spring flows, stream flows and lake levels. These data all assist the Wisconsin DNR in efforts to manage water resources and improve the state's water resources inventory.

Administrative reports.

Mr. Bruno invited Peter Johnson on behalf of the Regional Body's Secretariat, to give an administrative report. Mr. Johnson reported the following:

- In the days immediately preceding today's meeting, we held a two day conference of the Regional Body and Compact Council's Science Team.

  - It was open to members of the Tribes, First Nations and Métis Communities in Canada, as well as all of our Advisory Committee, Resource Group and Observers. I want to thank those who were able to join us.
  - It was the first time we held a hybrid meeting like this, but at the end of the day we think it went very well, with a great deal of interaction between those who participated remotely and those who were able to participate in person.
  - In the afternoon we had a roundtable where the States and Provinces were given an opportunity to discuss projects that they are developing or implementing in their jurisdictions. Just as we hoped, there was a lot of back and forth following these presentations, were there may be opportunities to help each other with common issues that are being faced.
  - During the conference, among other things we heard from John Van Arsdel of M.E. Simpson company present on the American Water Works Association Water Loss Tool and how to use it. As I think you all know, the priority focus of the Science Team this year is Water Conservation and Efficiency, so this was a particularly timely presentation. His slides as well as a recording of his presentation will be posted to the Regional Body and Compact Council websites in the coming days.
  - In addition, we heard from Matthew Child of the International Joint Commission talk about the development of their Science Strategy, and we discussed how we could better coordinate our efforts going forward.
  - As reported at the December 2021 meeting, every five years, pursuant to the Compact and Agreement a comprehensive cumulative impact assessment needs to be created. These assessments focus on the water budget of the Great Lakes St. Lawrence Basin, and the impacts of humans on the budget.
  - We are in the process of creating the next Cumulative Impact Assessment, and heard from the researchers who are doing that work. We will be hearing a short summary from them shortly about the work they have been doing, but during the science team meeting we heard in great detail about the status of their research. I will say that we are very appreciative of the incredible work that Jim Nicholas and the team at the University of Michigan lead by Dr. Drew Gronewold have been doing, and we continue to shoot for completion of the assessment by December of this year.
- I am also pleased to report that the Regional Body and Compact Council again hosted a session at the International Association for Great Lakes Research, and were particularly pleased to be able to meet in person. The focus of our session

was on Water Conservation and Efficiency. I particularly want to thank Emily Finnel and Simon Beslisle of the State of Michigan for doing the lion's share of the work for making this session happen. I was also honored to take part in the International Joint Commission's session and present to a large audience on the work of the Science Team and share the important work we are doing and inform them of how they can help us with their research.

- I also want to note that we recently launched an update to the Regional Body website and will be similarly updating the Compact Council website within the next couple of weeks.
- We are looking forward to getting back together again this winter in person in Québec, and will be looking for additional opportunities to come together and advance our common work as the pandemic continues to recede.

Ms. Bruno then invited Jim Nicholas of Nicholas-H2O to provide an update on the draft Cumulative Impact Assessment that is being drafted. Mr. Nicholas reported that this is the third five year cumulative impact assessment reports that is currently being drafted and that good progress was being made. He noted that in the main body of the assessment, diversions in and out of the Great Lakes Basin and consumptive uses are compared to the natural flows, resulting in a volume comparison. He noted that the results from this five year study are very similar to the previous two reports. He stated that the main conclusion is that the natural flows in the basin are in the range of hundreds of thousands of cubic feet per second, and if you add the diversions and consumptive uses together, they're in the range of a few to several hundred cubic feet per second. In short, the Diversions and Consumptive Uses represent about a 10th of a percent of what the natural flows are out of the Basin. In fact, sometimes if you add the diversions and consumptive uses together (including diversions into the basin), it results in a small positive number, meaning there's more water coming in than going out. And in some years there's a smaller negative number, meaning there's more water going out than coming in.

Maegan Muir of the University of Michigan was next invited to speak on behalf of herself and her colleagues Yifan Luo and Justin Huber, who were also present. She reported the following:
I am here to represent research that has been conducted at the University of Michigan, led by Dr. Drew Gronewold in support of the 2016-2020 Cumulative Impact Assessment (CIA).

Our work will inform the body of the assessment and is being used to create an appendix to the CIA. Our team's work is part of a larger effort to reduce uncertainty in water balance models through the Large Lake Statistical Water Balance Model, or L2SWBM. This work improves our understanding of climate change impacts on the historical record and future impacts of climate change on the water balance. A lake

water balance is an equation used to find the change in overall storage or volume of a lake or system of lakes, like the Great Lakes-St Lawrence River Basin. The water balance equation takes into account precipitation over the lake, evaporation over the lake, runoff from the watershed, and inflow and outflow from the channels connecting the lakes and rivers in the basin, as well as an error term. All of these terms have been measured by a variety of organizations and departments in the United States and Canada, and each has varying degrees of error, or uncertainty, in the values. When you bring all these different measurements together to form a water balance equation, the overall uncertainty compounds. In the past, there have been established ranges of values of uncertainty for all of these components, anywhere from 1.5% to 45%. Our model, the Large Lake Statistical Water Balance Model (L2SWBM), allows the input of numerous datasets of historical values for the water balance components, then runs those values through a supercomputer for thousands or even millions of iterations. In this model, each component value depends on every other value in the water balance, and in each of its iterations, it validates and adjusts each value, eventually settling on the most likely estimate of each value with much lower uncertainty. This allows the overall water balance to be much more accurate in terms of overall water levels, and individual hydrologic components. This model operates using historical data, or existing data, rather than projections of future data.

We used a series of statistical methods to analyze the outputs of our model in order to attempt to find trends in the historical record for precipitation, evaporation, runoff, and outflow between the Great Lakes. Using methods like segmented regression and smooth moving averages, we were able to filter out some extreme values and highlight long-term trends, as well as more recent short-term deviations. For example, there has been a dramatic increase in precipitation in Lake Superior over the last two decades, especially since 2013. All the Great
Lakes showed change points, or markers of a shift upwards in mean, for precipitation around the year 2010.

We also compared trends in the historical data to some existing climate change scenarios in the academic literature. We are interested in both long-term averages and seasonal variation. Our initial conclusions are as follows:

- The L2SWBM can be used to reduce uncertainty in the water balance and close the water balance over various time scales.
    - As more iterations occur and more data sources as reconciled, the uncertainty will shrink further.

- Climate change signals might already exist in the historical record, especially in precipitation.
    - Precipitation patterns on Lake Superior follow a hockey stick shape, an emblematic trait of climate change where values dramatically increase at the end of a time scale.

● In the future, precipitation and evaporation are likely to increase, leading to a wetter and hotter climate in the region. This raises the possibility of a tug of war on the water balance and rapid fluctuations between high and low water levels. However, increases in both precipitation and evaporation have opposite effects and thus they often don't dramatically change average long-term water levels.

Opportunity for public comments.
Members of the public were given an opportunity to ask questions or provide comments.

An opportunity was given to the public to provide comments. No comments were provided by the public.

Adjournment
Mr. Bruno invited a motion to adjourn and a second. Mr. Mueller moved and Mr. Clift seconded the motion. The motion to adjourn was then passed without objection and the meeting was adjourned at 10:21 a.m. EST.

The full text of the materials discussed at the meeting is available online at www.compactcouncil.org.