

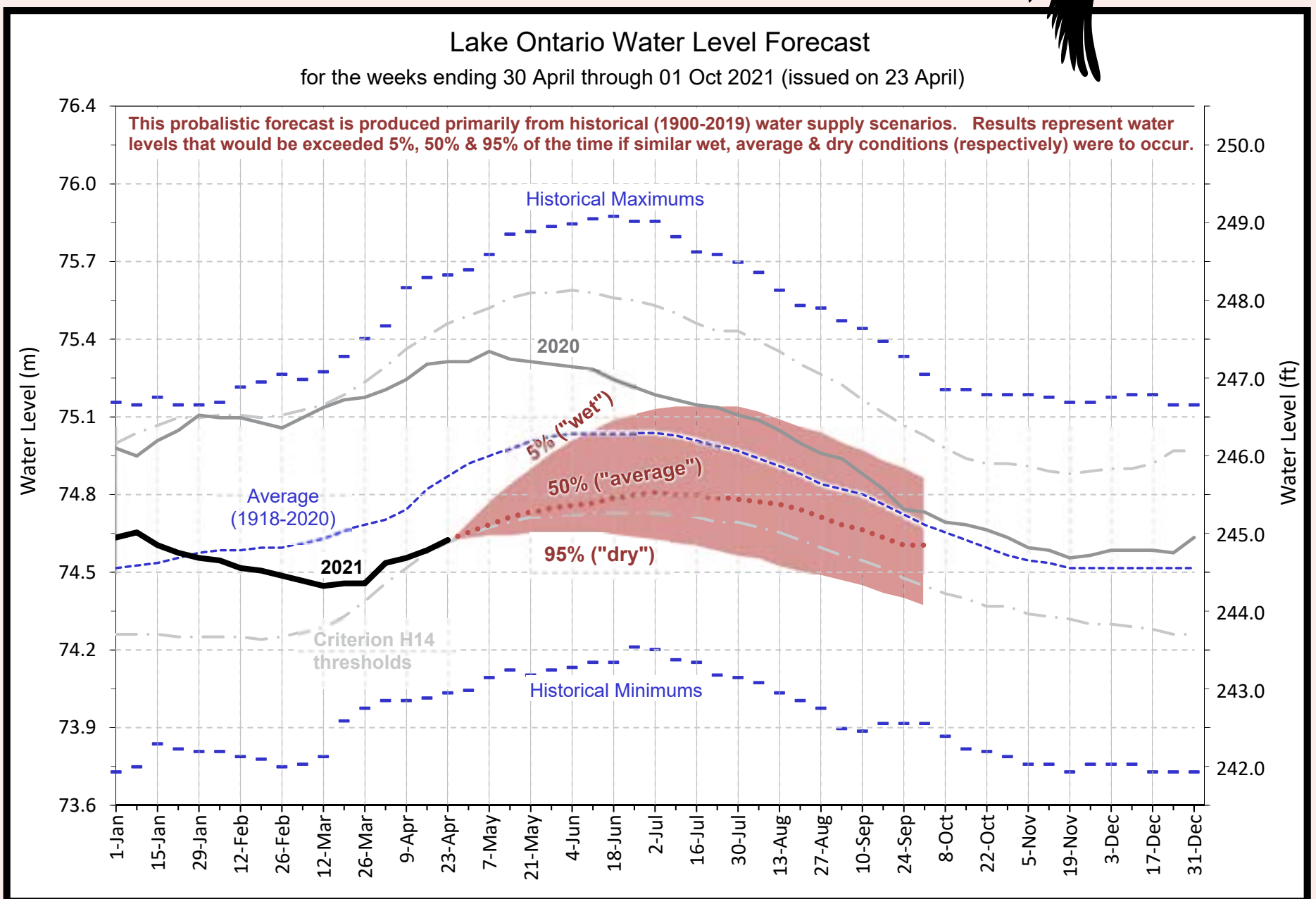
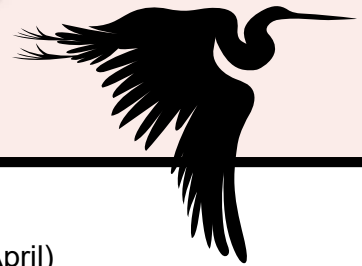


International Lake Ontario-St. Lawrence River Board



Quarterly Newsletter: Spring 2021

Forecast and Outlook



The forecast is based on current levels of Lake Erie and Lake Ontario, short-term weather predictions, an ensemble of historical water supplies, and the current outflow strategy. For the most up to date information, please visit: <https://ijc.org/en/loslrb/watershed/forecasts>



Due to the decline in water levels over the fall and winter, Lake Ontario levels are below average, and the lowest they have been at this time of year since 2015. As a result, the risk of flooding on Lake Ontario this spring is low. It appears that Lake Ontario reached its seasonal low point in late March and is now starting the seasonal rise. Under most potential forecast scenarios, Lake Ontario levels are expected to remain below the long-term average for the next several weeks.

It is expected that above-average outflows from Lake Ontario will continue to be prescribed by Plan 2014 in response to the continuing high inflows from Lake Erie. As a result, it is expected that Lake St. Lawrence levels (forebay immediately upstream of the Moses-Saunders Dam) will be very low again this year. Levels downstream, and in the Montreal area are currently below average and are expected to be near average later this spring.

Farewell Winter

In the fall, the risk of high Lake Ontario levels in 2021 was moderate due to mild weather from Mother Nature that mitigated persistent high inflows from Lake Erie. In early December, the Board requested to temporarily deviate from Plan 2014 (<https://ijc.org/en/loslr/international-lake-ontario-st-lawrence-river-board-implement-strategy-deviate-plan-2014>). In January through February, the Board conducted deviations approved by the IJC in accordance with Condition J of Plan 2014. These deviations removed a total of 9.4 cm (3.7 in) from Lake Ontario. In January, a total of 7 cm (2.8 in) was removed as outflows were maximized prior to ice formation. In February, an additional 2.4 cm (0.9 in) was removed as favorable weather and ice conditions allowed outflows to be increased above Plan 2014 Rule Curve values. The table below shows the overall impact of the deviations compared to the other inflow and outflow components. The decline in water levels in January and February was driven by very high Plan-prescribed outflows, which removed more water from the lake than what was added by Lake Erie inflows. As a result, in late January, Lake Ontario’s water level fell below average for the first time since October 2018. However, the deviations had a smaller impact and removed less water from the lake than what was added by local net basin supplies.

Effects of Inflows, Outflows, and Deviations on Water Levels of Lake Ontario

	January	February
Inflows from Lake Erie	104 cm (90% of total inflows)	88 cm (94% of total inflows)
Local net basin supplies	12 cm (10% of total inflows)	5.4 cm (6% of total inflows)
Total inflows	116 cm	93.4 cm
Plan 2014 prescribed outflows	-117 cm (94% of total outflows)	-99 cm (98% of total outflows)
Deviations	-7 cm (6% of total outflows)	-2.4 cm (2% of total outflows)
Total outflows	-124 cm	-101.4 cm
Total water level change (Difference between total inflows and total outflows)	-8 cm	-8 cm

Hello Spring!

While inflows from Lake Erie remained high in January and February, the inflows moderated considerably in March and are now midway between long-term average and record-high values. In addition, local net basin supplies were below average in January and February, and dry conditions continued in March. As a result, the total inflows to Lake Ontario have been much lower recently compared to the high supplies the basin has received over the past several years. These drier conditions have driven the decline of water levels throughout the Great Lakes – St. Lawrence River system.

Water levels tend to begin the seasonal rise in spring, as melting snow and spring rains increase runoff into the lakes. It appears that Lake Ontario reached its seasonal low point in late March and is now starting the seasonal rise. Under most potential forecast scenarios, Lake Ontario levels are expected to remain below the long-term average for the next several weeks. It is expected that Lake St. Lawrence levels (immediately upstream of the Moses-Saunders Dam) will be very low again this year. Levels downstream, at Lake St. Louis and in the Montreal area are currently under average and are expected to be

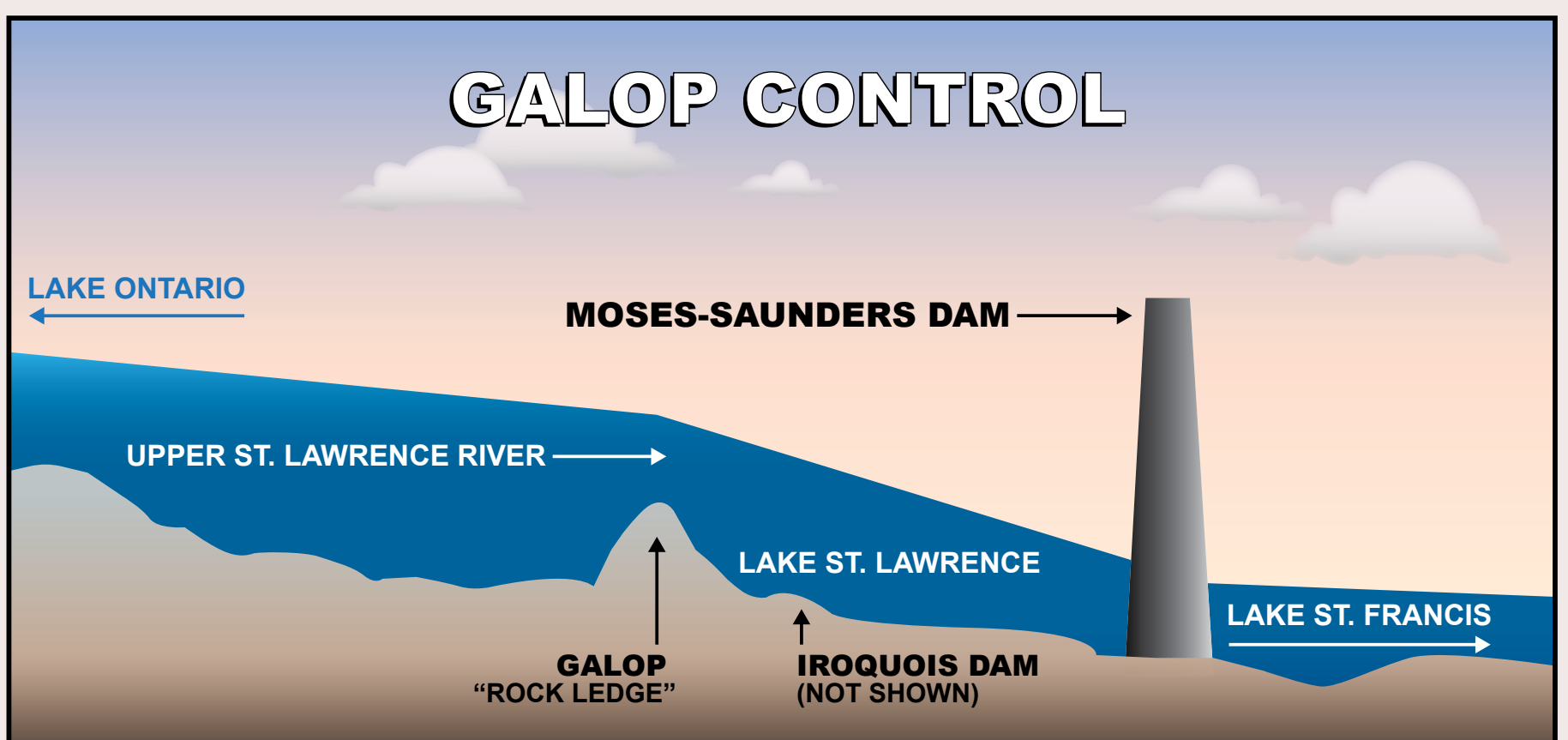
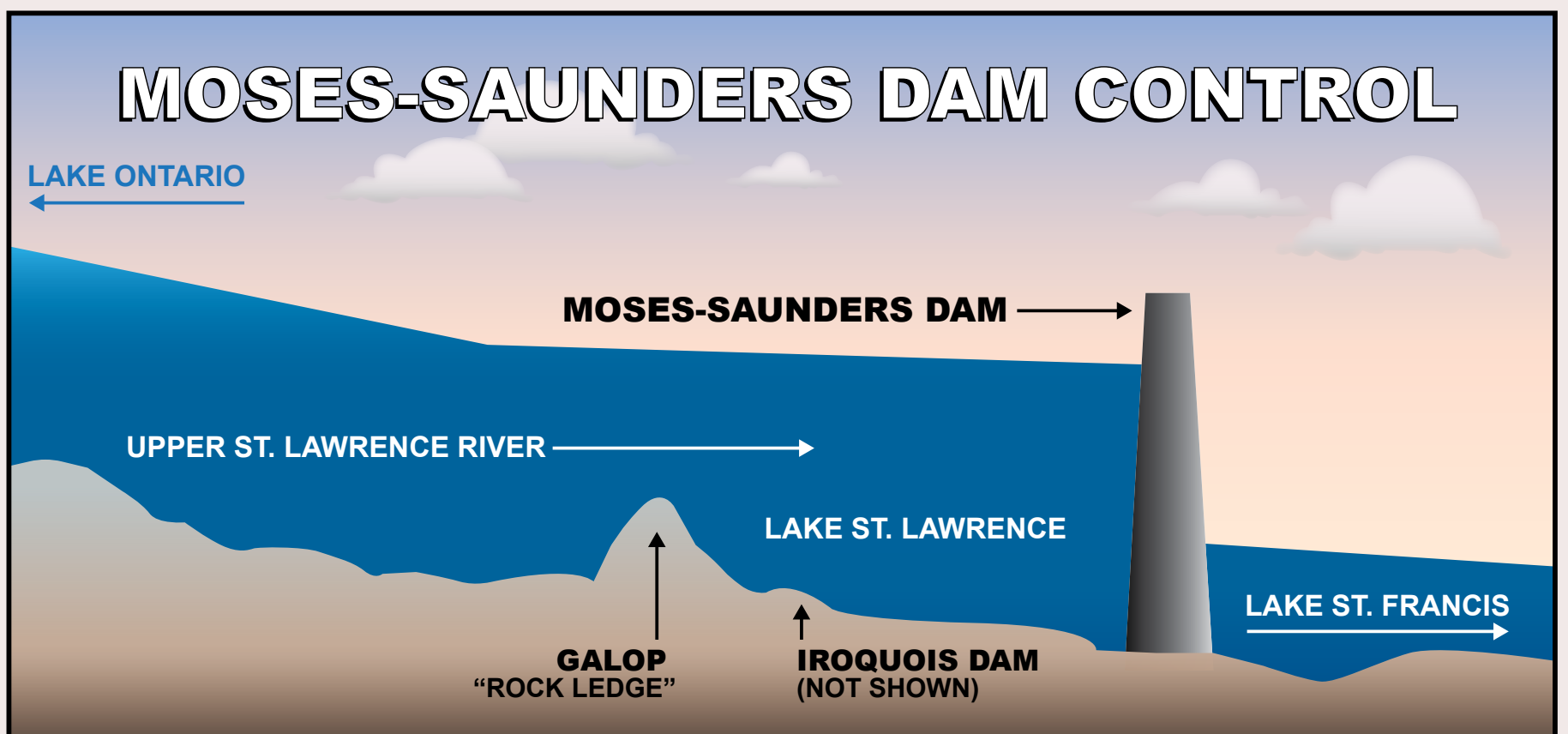
near average later this spring. It is critical to watch the Ottawa River basin closely at this time of year, as the timing, magnitude, and rate of snowmelt, combined with spring rains all contribute to what is typically a rapid rise and peak flow of the Ottawa River. This spring rise in flow is called the “freshet”. The Ottawa River Regulation and Planning Board tracks this information, and closely coordinates with the Board. This year, there was a below average amount of snow in the basin and mild temperatures contributed to an early start to the freshet period. As of the beginning of April, water levels and flows along the Ottawa River have started to recede. For the most recent information, please visit <http://ottawariver.ca/conditions/>

When the Ottawa River’s flows are high they can contribute to flooding in Lake St. Louis, just to the west of Montreal, and in Lake St. Peter, further east between the cities of Sorel and Trois-Rivieres, Quebec. This year, temporary reductions in outflows from the Moses-Saunders Dam are not expected to be required to lower the risk of flooding downstream of the dam. All flow changes can be viewed at: <https://ijc.org/en/loslr/watershed/outflow-changes>



Lake St. Lawrence Water Level Fluctuations

- Lake St. Lawrence water levels depend on a balance of inflows and outflows.
- Lake St. Lawrence is the forebay to the Moses-Saunders Dam. Therefore, when the gates are lowered to limit outflow downstream, Lake St. Lawrence water levels rise. <https://ijc.org/en/loslr/lake-st-lawrence>
- Moses-Saunders Dam was constructed primarily for hydropower and to create safe commercial navigation upstream and downstream of the dam. The Moses-Saunders Dam does not have exclusive hydraulic control of Lake Ontario outflows and cannot prevent upstream or downstream flooding. The dam can help reduce natural flood levels and hasten recovery time after high water events. But the dam cannot prevent extreme high water level events or extreme low water level events.
- During periods of low water levels in Lake Ontario and the Upper St. Lawrence River, water must be high enough and/or move swiftly to flow over the Galop rock ledge. The Galop rock ledge can limit outflows or prevent outflows from leaving the upper river system, and ultimately contribute to low water levels in Lake St. Lawrence.
- For additional information, related to Lake St. Lawrence water levels, visit the visual history of the project at <https://ijc.org/en/loslr/watershed/project-storymap>





News from the GLAM Committee

The Great Lakes-St. Lawrence River Adaptive Management (GLAM) Committee is a subcommittee to the Lake Superior Board of Control, Niagara Board of Control, and International Lake Ontario-St. Lawrence River Board. The GLAM Committee supports ongoing evaluation of the outflow regulation strategies, and reports findings to the respective boards.

A current initiative of the GLAM Committee is to complete a two-phase review of Plan 2014. Extremely wet conditions over the last several years led to record-high water levels and river flows in the Lake Ontario-St. Lawrence River system in 2017 and again in 2019 (<https://ijc.org/en/learning-high-water-impacts-lake-ontario-and-st-lawrence-river>). In February 2020, the International Joint Commission (IJC) received funding to investigate possible improvements that could be made to Lake Ontario outflow regulation activities. Phase I is a 20-month review focused on gathering information and developing tools to help inform the critical decisions by the Board on how to best manage flow releases under extremely high water level conditions, with the goal of further moderating flooding. Phase II is a three-year review process to provide a comprehensive assessment of Plan 2014 under a range of high and low water conditions. In May 2020 the IJC established a Public Advisory Group (PAG) to be a voice representing the public, and to work closely with the GLAM Committee on Phase I of the Plan 2014 review process.

The PAG includes 18 individuals representing the diverse interests and issues across the Lake Ontario-St. Lawrence River system, spanning from the shorelines of Lake Ontario in Ontario and New York downstream to Lake Saint Pierre on the lower St. Lawrence River in Quebec. The PAG initiated work in late June 2020, has met virtually approximately twice per month, and has focused on the following:

- type and range of data necessary to assess impacts of extreme water levels on different interests and geographies within the lake and river system
- consider how information could best be used to support Board decision making and balance different stakeholder interests, both upstream and downstream

In addition to collaborative efforts with the PAG, the GLAM Committee hosted a series of meetings with municipal staff in 2020 and 2021 on both sides of the border throughout the Lake Ontario-St. Lawrence River system to better understand issues and concerns of shoreline municipalities related to high water events in recent years. The GLAM Committee has continued to make an on-line questionnaire available to shoreline property owners to help understand the impacts experienced due to high water levels and associated adaptive responses (<https://ijc.org/en/glam/questionnaires>). The Committee has plans to further engage with indigenous communities. In addition to hearing from those impacted by recent high-water conditions, the GLAM Committee continues to undertake a number of technical studies to assess shoreline impacts. The information from these various sources is being utilized by the GLAM Committee and expert scientists from the US Army Corps of Engineers, Institute for Water Resources (IWR) to develop a model called a decision support tool that will further support the Board in assessing impacts associated with high water levels throughout the lake and river system. The PAG has been an integral advisor to the GLAM Committee as the Committee continues to work with IWR and the Board in the design of the decision support tool modeling process.

Phase II of the review process is expected to begin later in 2021 and last about three years, pending available funding. Phase II will provide a comprehensive assessment of Plan 2014 to include impacts associated with both high and low water levels throughout the lake and river system under a wide range of possible future conditions. The GLAM Committee will provide additional updates as work progresses with the expedited review of Plan 2014.



New at the Wheel - Introducing the new Public Affairs Specialist:

Hello! My name is Lynn and I am the new Public Affairs Specialist in the Water Management Division at the U.S. Army Corps of Engineers, Great Lakes and Ohio River Division. My primary role is to serve the various boards, committees, and programs of the International Joint Commission to lead public involvement, outreach, and engagement opportunities specifically for the International Lake Superior Board of Control, International Niagara Board of Control, International Lake Ontario-St. Lawrence River Board, and Great Lakes-St. Lawrence River Adaptive Management Committee. What does that really mean? I will work with the board and committee members to share updates and information with the public regarding water resource management and the many initiatives managed by the International Joint Commission. But most importantly, I will create opportunities for public involvement that supports shared dialogue so we can better understand your interests and values as it relates to the Great Lakes.

My communication philosophy is to ensure we provide transparent communications, in a timely and understandable manner, and share information with the people who live, work, and recreate in the Great Lakes. I have spent my life living in coastal communities; I enjoyed the rocky beaches of the Long Island Sound and sandy shores of the Atlantic Ocean as a child and have spent my entire adult life living along the lower Great Lakes.

I obtained my Bachelor of Science in geology, Master of Science in environmental science with a focus in hydrology, and have worked for the U.S. Army Corps of Engineers since 1999. I made a career transition to the field of public involvement in 2007 with the objective to create collaborative opportunities with the public related to agency projects and studies. However, I take great pride in my education as a scientist and use that knowledge to help teams translate technical and sometimes complicated information in a manner that is understandable. I am incredibly proud to serve as one of the agency's original 12 Public Involvement Specialists since 2013. From 2013 through 2021 I also served as the Project Manager of the Great Lakes National Shoreline Management Study to address shoreline erosion and accretion, and the socioeconomic impacts associated with shoreline management. The Great Lakes have been the focus of my entire career, a passion in my life, and I am excited for this next journey to work on international boundary water resource management strategies for those that call the Great Lakes home.



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The Board's website
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Facebook page
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