

PLAN 2014 EXPEDITED REVIEW

# Phase 2 Overview

## Background of the Plan 2014 review

In February 2020, the International Joint Commission (IJC) ordered an expedited review of Plan 2014, the outflow management regulations for Lake Ontario that influence water levels on the lake and portions of the St. Lawrence River.

A long-term comprehensive review of Plan 2014 was scheduled when the plan was put into use in January 2017. However, the timetable for the review was shortened because of concerns arising after extreme high water in 2017 and 2019 caused damage and disruption throughout the lake-river system.

Phase 1 of the expedited review was completed in November 2021. It provided valuable new information to support the International Lake Ontario-St. Lawrence River Board, which has the authority to deviate from Plan 2014's prescribed outflows during times of extreme high or low water.



The GLAM Committee is committed to its charge of searching for relative improvements in plan performance. Nevertheless, it is unrealistic to expect that all potential water level related impacts can be eliminated. This is due to the large size of the bodies of water, the design constraints of the system, and the fact that the primary driver of water levels remains the weather conditions.



Boating along the St. Lawrence Seaway, New York

## Phase 2 has a broader focus

The second phase of the expedited review, now underway, will comprise a broad examination of Plan 2014's performance, especially its response to extreme high and low water levels and to variability brought on by the changing climate. This will include reviewing the rules within the regulation plan that govern outflows as well as the trigger levels that authorize the International Lake Ontario-St. Lawrence River Board to consider deviations from those rules. The goal of the review is to find ways that could moderate extreme water levels and reduce impacts on the various uses and interests throughout the Lake Ontario and the St. Lawrence River system.

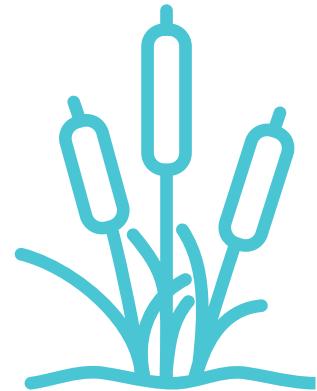
The review could identify possible minor or major revisions to Plan 2014 rules and deviation authorities as recommended improvements by the International Lake Ontario-St. Lawrence River Board for consideration by the IJC and governments.

The Great Lakes-St. Lawrence River Adaptive Management (GLAM) Committee is conducting the expedited review. The GLAM Committee, appointed by the IJC, is made up of government scientists and engineers and knowledgeable specialists from outside organizations. The Committee's purpose is to conduct on-going evaluations of water-management regulations, including those for managing flows out of Lake Superior and the water flowing out of Lake Ontario into the St. Lawrence River.

## New models will evaluate Plan 2014

A central piece of Phase 2 will be the creation of a new computer model to evaluate the performance of Plan 2014 and changes to it that are considered.

The model will be made using the Shared Vision Planning approach in which IJC water-management and impact assessment experts, International Lake Ontario-St. Lawrence River Board members and representatives of affected groups and interests will collaborate. Together, they will test possible changes to Plan 2014 and use modelling to help them analyze and assess those changes.



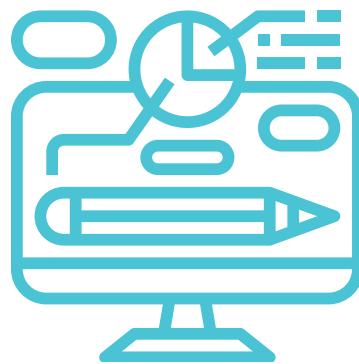
**The goal of the second phase of the expedited review is to find ways that could moderate extreme water levels and reduce impacts on the various uses and interests throughout the Lake Ontario and St. Lawrence River system.**

The result will be a unified model that considers the impacts of water levels and river flows and changes to the regulation plan on all uses and interests in the lake-river system. The evaluation will look at both short-term and long-term implications under a range of possible weather and climate conditions. Since all the parties will help shape the modelling, together they should collectively gain a full understanding of how the model works and build trust in its output.

The GLAM Committee will create separate models to assess the potential impacts of water levels and flows on specific uses and interests such as river and lake ecosystems, hydropower production, commercial navigation and shoreline businesses, property owners and public assets. Output from these predictive models will be integrated into the larger Shared Vision Model.

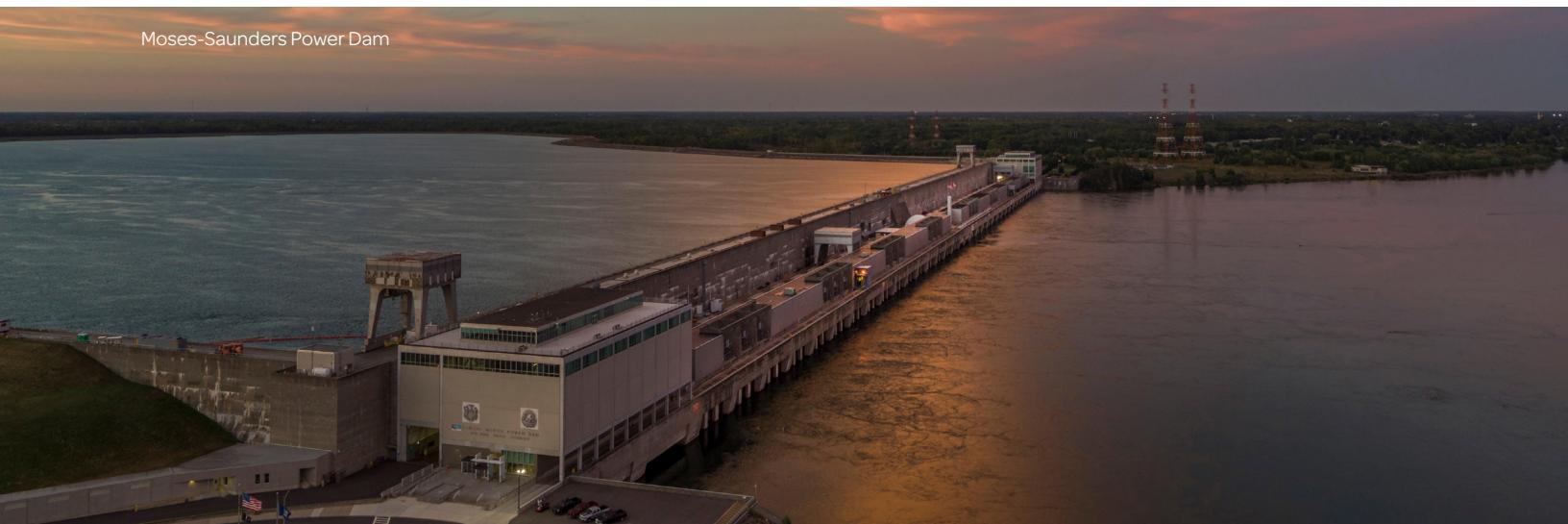
The impact of various water levels, including extreme highs and lows, were considered carefully when Plan 2014 was devised. However, further insights may emerge during Phase 2 of the review as the impacts on various interests are reexamined using new techniques and data — including the extensive data collected by the GLAM Committee on impacts from the extreme water levels in 2017 and 2019, plus more data that will be gathered by Phase 2 research.

Not unlike the decision support tool developed during Phase 1 to better inform the International Lake Ontario-St. Lawrence River Board about the consequences of real-time deviation decisions, the Shared Vision Model being developed for Phase 2 will inform the assessment of alternative strategies. The Phase 2 Shared Vision Model will build upon the Phase 1 effort. It will include indicators of impacts across all interests and regions integrated into a common model devised to display the outcomes of alternative outflow plan rules and deviation strategies across those interests and regions. It will also allow the evaluation of possible modification to the regulation plan over a much longer time horizon of years and decades and under a full range of possible water supply conditions including climate change. This will facilitate the comparison of the performance of Plan 2014 and alternatives that are devised.



**A central piece of Phase 2 will be the creation of a new computer model made using the Shared Vision Planning approach in which IJC experts, International Lake Ontario-St. Lawrence River Board members and representatives of affected groups and interests will collaborate**

Moses-Saunders Power Dam

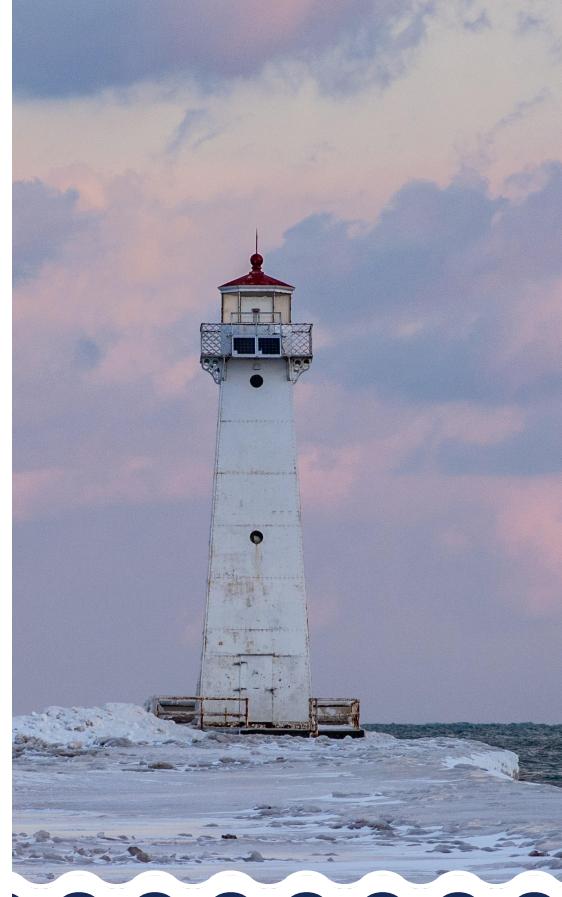


## Board members will make recommendations to the IJC

The International Lake Ontario – St. Lawrence River Board, after hearing from technical experts and citizen advisors, will consider objectives and assess the acceptability of any proposed modifications to the regulation rules and deviation authorities of Plan 2014. The Board must consider whether a change is an improvement within the framework of the IJC's Orders of Approval for Lake Ontario regulation and in consideration of the full range of interests and regions affected by potential changes. These interests can evolve based of societal values. For examples, recreational boating and natural ecosystems were not considered in the 1950s when the original regulation plan was developed, but were included when Plan 2014 was being created.

The GLAM Committee must consider what weather-driven water-supply conditions are possible, not only now, but into the future. The GLAM Committee will develop a range of plausible scenarios to reflect the lake's historical water-supply record as well as more extreme high and low water supplies than seen in the past including possible projections of water supplies (precipitation, runoff and evaporation) under a changing climate.

Some of these long-term scenarios will evolve over decades to take into account the fact that some impacts, such as erosion and changes to the river and lake ecosystems, can play out over the course of many years. The effectiveness of the current plan and any modified versions will be assessed over a range of possible future conditions to test how consistently they would meet the objectives. The GLAM Committee is committed to its charge of searching for relative improvements in plan performance. Nevertheless, it is unrealistic to expect that all potential water level related impacts can be eliminated. This is due to the large size of the bodies of water, the design constraints of the system, and the fact that the primary driver of water levels remains the weather conditions.



## How do things conclude?

**International Lake Ontario-St. Lawrence River** Board members have the responsibility of recommending what changes to Plan 2014, if any, should be made.

Any such recommendations would go to the IJC, which would gather public comments on the proposed changes. If Commissioners deemed the proposed changes appropriate, they would submit them to the governments of Canada and United States for concurrence. Once that was obtained, the Commissioners would implement any approved change to the regulation plan.

Phase 2 of the Plan 2014 review is scheduled to be completed by the end of 2024, and a report on the findings will be issued shortly thereafter.

