REGULATION PLAN 2012 FACT SHEET

REGULATING LAKE SUPERIOR OUTFLOWS

Between the cities of Sault Ste. Marie, Michigan and Ontario, water flows from Lake Superior through the St. Marys River and into Lake Huron. In the area known as the St. Marys Rapids, the St. Marys River falls approximately 6 metres (20 feet) in a distance of 1.2 kilometres (0.75 mile). Since 1797, when the first lock was built to allow boats to bypass these rapids, various navigation and power structures have been erected along the river.

Structures at the head of the St. Marys River that control the outflow from Lake Superior.

Today, the water from Lake Superior flows through a collection of structures that stretch across the river. These works include three hydropower plants, five navigation locks, and a gated dam at the head of the rapids known as the Compensating Works. The release of water from Lake Superior has been completely regulated since the completion of the Compensating Works in 1921. Regulating the outflow from Lake Superior and overseeing the operation of the various control works are the responsibilities of the International Lake Superior Board of Control, under the authority of the International Joint Commission.

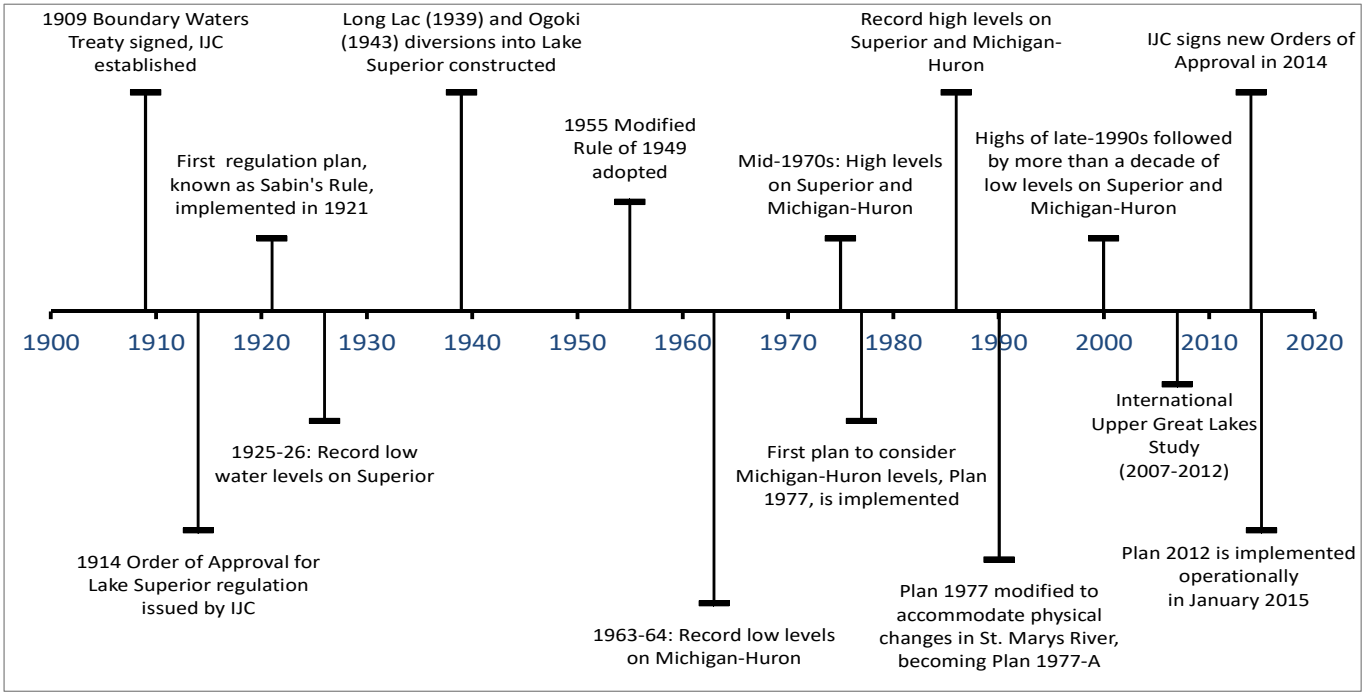
The International Joint Commission established the basic objectives and limits to the regulation of Lake Superior's outflow in its 1914 Order of Approval. Back then, it acknowledged the needs of various interest groups on Lake Superior and the St. Marys River, including navigation, hydropower, and riparian owners. Since 1978, the Commission has issued several additions to the original Order. As a result, it now specifies that the level of Lake Michigan-Huron must also be considered when determining the Lake Superior outflow. What all this means is that outflows from Lake Superior are set in consideration of various interests, both upstream and downstream.

What is a regulation plan?

A regulation plan is a set of rules used to determine the release of water from a lake. The rules are designed to achieve certain socio-economic and environmental objectives, while adhering to specific physical and operational limits.

A NEW APPROACH: PLAN 2012

Over time, various regulation plans have been developed and used to determine Lake Superior outflows. Each of these plans has adhered to the conditions contained in the Commission's Orders of Approval. In response to the findings and

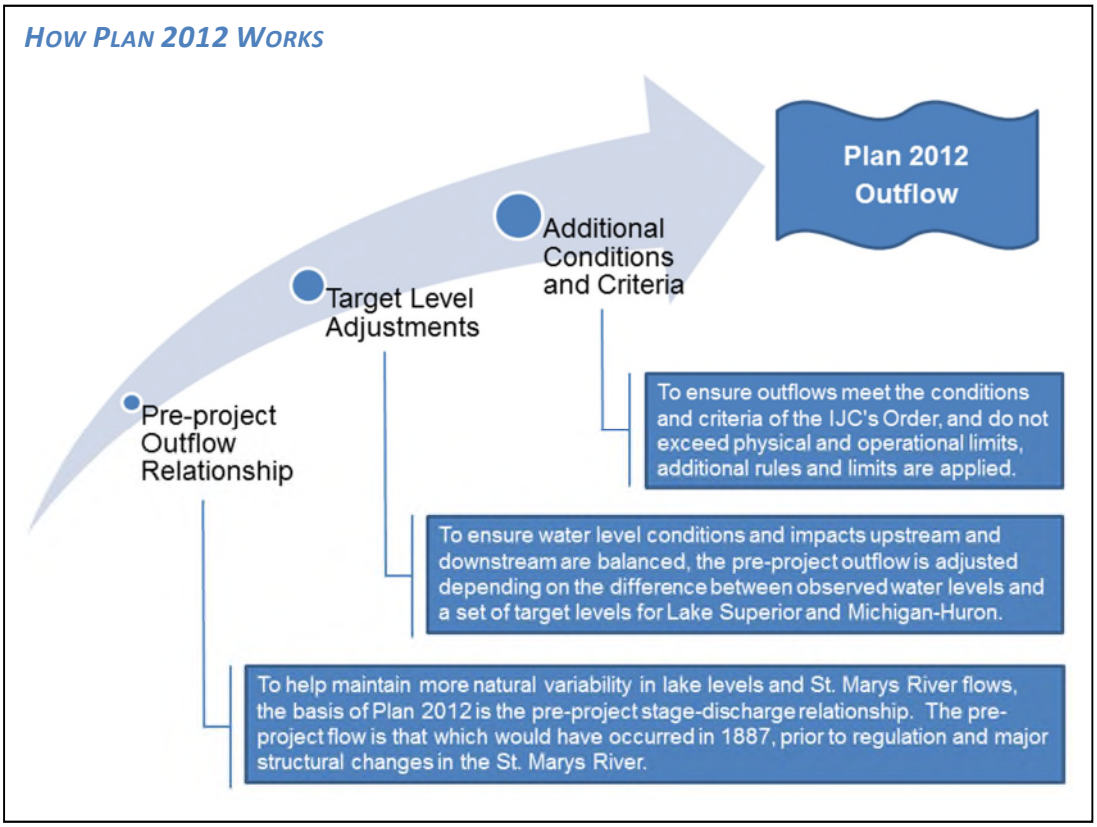


Timeline of significant events related to Lake Superior regulation

recommendations of the International Upper Great Lakes Study, as well as public hearings held throughout the upper Great Lakes basin in 2012, the Commission signed a new Supplementary Order in July 2014, adopting Lake Superior Regulation Plan 2012 as an improved means for regulating Lake Superior outflows. Plan 2012 was subsequently implemented by the International Lake Superior Board of Control operationally starting in January 2015.

Plan 2012 was developed to try to maintain much of the natural variability in lake levels, while being consistent with the capacities of the current discharge structures at Sault Ste. Marie and with winter flow restrictions employed to reduce the risk of ice jams. Like its predecessor, Plan 1977-A, which had been in place operationally since 1990, Plan 2012 retains the balancing principle whereby water levels and outflows of Lake Superior are regulated in consideration of conditions and interests both upstream and downstream. At the same time, the plan tries to prevent the level of Lake Superior from rising above or falling below certain levels specified in the Order.

How Plan 2012 Works



Advantages and Limitations

Plan 2012 is expected to perform similarly to Plan 1977-A, but it has several important advantages, which are described in the diagram at right.

But while Plan 2012 provides these benefits, it will not result in significant changes to water levels when water supplies are similar to historically observed supplies. Furthermore, under any regulation plan, the ability to regulate the outflow from Lake Superior does not mean that full control of lake levels is possible. This is because the major factors affecting water supply to the Great Lakes - precipitation, evaporation, and runoff - cannot be controlled, and are difficult to accurately predict.

Plan 2012 takes this into account. It looks at where water levels are now, what water supplies and levels might be like in the coming months, and then tries to provide a balance in consideration of all interests and all sources of uncertainty.

Plan 2012 Benefits

Preserves Lake Superior levels

If water supplies become significantly drier, as is possible (though not certain) under climate change, Plan 2012 will preserve levels on Lake Superior and flow through the St. Marys River

Protects Lake Sturgeon habitat

Plan 2012 will avoid rare but serious impacts to Lake Sturgeon spawning habitat in the St. Marys River by providing more natural flows overall, and a minimum flow required for breeding

Economic Benefits

Plan 2012 provides modest economic benefits to commercial navigation, hydroelectric generation and coastal zone interests under a wide variety of wet and dry water supply conditions

More predictable flows

Plan 2012 requires smaller month-to-month changes in St. Marys flows, providing benefits for hydropower generation stations at Sault Ste. Marie

More natural flows

Overall, Plan 2012 will result in a more natural pattern to St. Marys River flows, which will help sustain riverine ecosystem health

Simpler Rules

The rules of Plan 2012 are much less complex, making it easier to manage

Plan 2012 will…

- *… provide modest economic benefits to upper Great Lakes interests*
- *… be able to withstand and offer more robust performance under extreme water supplies*
- *… result in more natural flows in the St. Marys River and reduced spillage through the Compensating Works*
- *… better meet the evolving needs of upper Great Lakes interests*

Plan 2012 will not…

- *… result in large differences in water levels from what would have occurred under Plan 1977-A*
- *… prevent extreme high or low water levels from occurring*
- *… eliminate high flows in the St. Marys River or the need to open gates at the Compensating Works*
- *… reduce the need for upper Great Lakes interests to adapt to changing water level and flow conditions*

Adaptive Management

The Board is also working with the IJC's Great Lakes – St. Lawrence River Adaptive Management (GLAM) committee to develop an adaptive management approach for improving management of the upper Great Lakes system. Climate change poses new challenges for adapting to fluctuating Great Lakes water levels. Although the future is not certain, increases in temperature and alterations in patterns of precipitation are likely to affect water levels in the upper Great Lakes. There is strong evidence that in the future we will likely experience more extreme water levels – both high and low – that are outside the historical range experienced over the past century. Furthermore, socioeconomic and environmental conditions in the Great Lakes water levels also evolve over time.

Collaborative, integrated adaptive management offers an approach that helps address the uncertainties of an evolving future associated with climate change and the potential for extreme water levels and associated impacts on stakeholders. Adaptive management is a structured, iterative process for continually improving management results by learning from the outcomes of previous policies and practices.

Adaptive management will enable the Board to take advantage of future scientific and management advances, and apply these to the management of Lake Superior water levels and flows. Adaptive management will allow for an on-going review and evaluation of Plan 2012 and its performance over time with respect to a broad range of environmental and economic indicators. These indicators also evolve over time, and adaptive management will allow these changes to be monitored and allow the indicators to be refined and improved.

The adaptive management process will help address changing conditions and emerging issues by guiding and informing decision making, so that water levels and flows can be better managed to meet the needs and requirements of those who rely on and enjoy the upper Great Lakes system.

Additional Information

International Lake Superior Board of Control

Website:
https://ijc.org/en/lsbc

Facebook:
https://www.facebook.com/InternationalLakeSuperiorBoardOfControl

International Joint Commission
www.ijc.org

International Upper Great Lakes Study
www.iugls.org