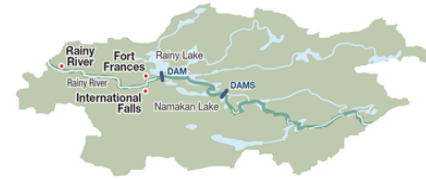




International Rainy and Namakan Lakes Rule Curves Study Board Fact Sheet Series



Factsheet # 1

Title: Operational Management of Lake Levels

Background

The International Joint Commission has the authority to regulate the outflows from the dams at Namakan Lake and Rainy Lake. This factsheet explains who is involved in making sure that the IJC's regulations are followed, describes their roles and authorities, and how decisions are made.

International Joint Commission

The International Joint Commission (IJC) was created following the signing of the 1909 Boundary Waters Treaty between the United States and Canada. The IJC has two main responsibilities: regulating shared water uses and investigating transboundary issues and recommending solutions. The IJC's recommendations and decisions take into account the needs of a wide range of water uses, including drinking water, commercial shipping, hydroelectric power generation, agriculture, industry, fishing, recreational boating and shoreline property.

In 1940, the Rainy Lake Convention was signed by the United States and Canada. This gave the IJC the regulatory authority over the discharge of water from the outlet facilities at Namakan Lake and Rainy Lake.

The Water Levels Committee

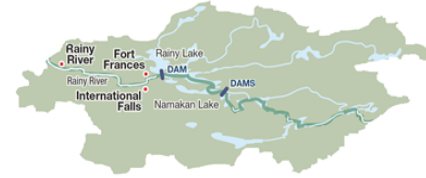
Beginning in the 1949, the IJC assigned the duties of monitoring lake levels according to its regulations to the International Rainy Lake Board of Control

(IRLBC). For many years, the IRLBC was comprised of engineers from the United States (U.S. Army Corps of Engineers, St. Paul District) and Canada (Environment Canada and its predecessors). In the early 2000s, the IJC extended the membership to include a local member from each country. In 2013, the IJC merged the IRLBC with the International Rainy River Water Pollution Board to create a new board, the International Rainy-Lake of the Woods Watershed Board. This board has a permanent committee, the Water Levels Committee (WLC), that was delegated the responsibilities





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and authority of the former IRLBC. Like the IRLBC, each country has a federal and local member on the WLC.

The Companies

The dams at the outlet of Namakan Lake (Kettle Falls and Squirrel Falls) and on the Rainy River are co-operated by the owners, H2O Power LP in Canada and Boise Paper in the United States. Flow operations at these facilities are coordinated by H2O Power LP, which has a 24-hour operations centre in Oshawa, Ontario as well as a regional office in Fort Frances.

Authorities: Regulation of Lake Levels

The IJC has established Rule Curves as the primary regulation tool for the levels of Namakan Lake and Rainy Lake. Rule Curves provide a target range, known as the band, for the level of the lake for every day of the year. The IJC has used Rule Curves for these lakes since 1949, with the most recent versions being adopted in 2000.

<h1>Authority Levels</h1>	
	Full Authority
Water Levels Committee	Target anywhere in Rule Curve band
	Target anywhere in middle portion of Rule Curve band

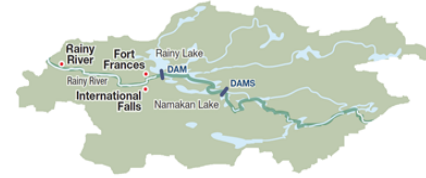
Under the 2000 Rule Curves, the Companies are required to adjust flows out of these lakes to target the middle portion of the Rule Curve band. To provide for flexibility to adapt to developing conditions, the IJC Order which defines the 2000 Rule Curves also gave the IRLBC (and now the WLC) the authority to direct the Companies to target elsewhere within the band (that is, higher or lower than the middle portion). For targets outside of the Rule Curve band, a Supplementary Order issued by the IJC is required.

Routine Daily Operations

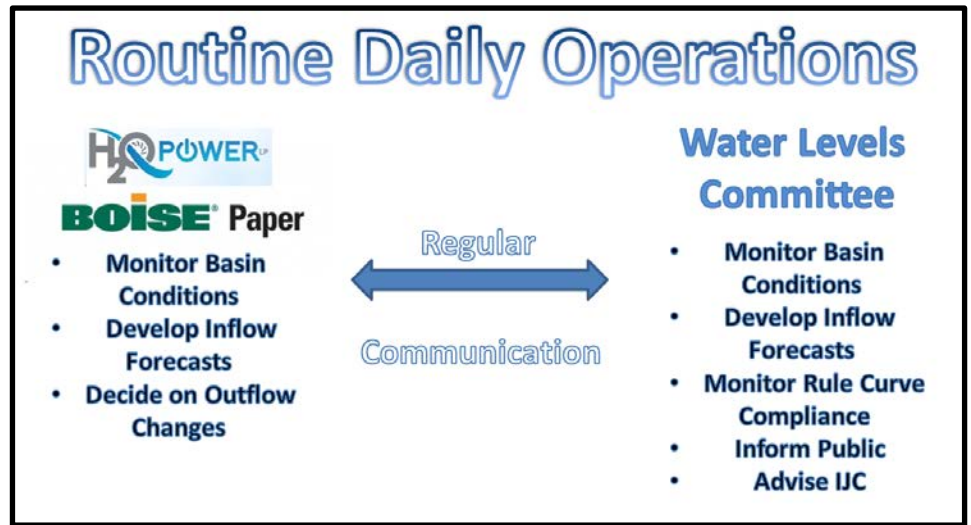
Under normal conditions, both the Companies and the Water Levels Committee monitor basin conditions and forecasts in order to determine if flow changes are necessary to keep the lake levels on target. For the Companies, precipitation data and flow forecasts are developed by H2O Power's operations centre. For the Water Levels Committee, its Canadian Engineering Advisor, the Lake of the Woods Secretariat (LWS), carries out this role and publishes the latest lake level data online each working day.



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Based on the available water level, river flow, and precipitation data and forecasts, H2O Power LP coordinates with Boise Paper to adjust flows out of both lakes to stay within the target ranges of the Rule Curve bands. For each planned change in outflow from the lakes, H2O Power LP notifies the WLC ahead of time. H2O Power is in regular communication with the LWS, which develops independent inflow forecasts and verifies that planned outflow changes are appropriate to maintain the lake levels in compliance with the Order.



Operations under Unusual Conditions

In the event of unusually high or low inflows, or some other exceptional circumstance where targeting outside of the middle portion is warranted, the LWS notifies the WLC and provides forecasts, data, and recommendations on changes to targets. The WLC reviews the data and determines the appropriate target. If the target water level is within the Rule Curve band, the WLC provides the direction to the Companies and notifies the IJC. These changes in targets are normally posted to the Watershed Board's website, and advisories to local media outlets in the basin are often issued. In exceptional cases, where targets outside of the Rule Curve are required, the WLC provides its recommendations and supporting data to the IJC for consideration. If the IJC agrees with the recommendations, it issues a Supplementary Order which temporarily replaces the current Order and the 2000 Rule Curves.

Responsiveness

As described above, both the Companies and the WLC monitor conditions and forecasts daily. H2O Power is in regular communication with the WLC on its flow change plans, and the WLC closely monitors weather and inflow forecasts to anticipate potential issues with Rule Curve compliance. When exceptional conditions or situations develop, the small size of the WLC (four members) allows it to quickly review and discuss the available data and forecasts and decide on the appropriate course of action. Flow changes can be reviewed, directed, and carried out within a day in most cases. Because the IJC is kept informed of such developments, if a Supplementary Order is necessary, it can be arranged in short order.