Adopted Regulation Strategy
Lake of the Woods Control Board Regulation Meeting
June 18, 2014

The Lake of the Woods Control Board held a Regulation Meeting on June 18, 2014 in Kenora. The strategy was formulated considering basin conditions, hydrological and meteorological forecasts, and the input of the various interests concerned with basin management. Input was provided in written and verbal reports as well as from the Board's Regulation Guide (http://www.lwcb.ca/reg-guide/index.html).

For an update on current conditions, please refer to the Basin Data section of the Board's web site at http://www.lwcb.ca/waterflowdata.html. For regulation actions and directives taken under the strategy please see the Regulation Actions at http://www.lwcb.ca/regulation/index.html.

Lac Seul

A) Seasonal Considerations

Under normal conditions, the Board takes into account a number of different interests and sets a strategy that seeks to balance those interests to the greatest extent practicable. However, given the extremely wet weather over the spring, the adopted strategy for the regulation of Lac Seul is to balance high water above and below Ear Falls while keeping Lac Seul within the operating range.

Should a return to normal conditions occur by late summer or early fall, the following interests should be taken into consideration when evaluating flow changes from Lac Seul:

- When flow capacity exists downstream in Manitoba, the rate of rise on Lac Seul should be controlled so that the lake level remains below upper quartile.
- Supply water requested by Ontario Power Generation and Manitoba Hydro for hydroelectric energy generation; avoid spill in wet conditions and violation of low flow constraints in dry conditions.
- Preferred English River flow at Grassy Narrows is less than 550 m^3/s.
- Use Lac Seul storage to offset Lake of the Woods high/low outflows for the benefit of users of the Winnipeg River in Manitoba.

B) Adopted Strategy for Lac Seul

For both the short and the long-term strategies, with the Lake St. Joseph diversion closed, regulate outflow to as high as 600 m^3/s to prevent the lake exceeding 356.9 m (1170.9 ft), to as high as 800 m^3/s to prevent the lake exceeding 357.1 m (1171.6 ft) and as high as necessary to ensure that the upper storage limit of 357.2 m (1171.9 ft) is not exceeded.

Short-Term Strategy:

- Reduce outflow from Lac Seul as early as practical to assist in reducing flows in the lower English River and the Winnipeg River in Manitoba, while balancing downstream impacts with the risk of prolonged high water levels near Hudson and areas upstream.

- Lac Seul should be maintained in the range of 356.7 to 356.9 m (1170.3 to 1171.0 ft) or lower if inflow subsides to the normal range.

Long-Term Strategy:

- The strategy through October is to balance Ear Falls outflow with the rise in Lac Seul level to reduce flood risk both on Lac Seul and areas upstream, and on downstream areas such as Pakwash Lake, the English River downstream of Manitou Falls and the Winnipeg River downstream of Whitedog.
- From late June through August, Lac Seul levels should be targeted for the range of 356.6 to 356.8 m (1170.0 to 1170.6 ft).
- If inflows to Lac Seul decline, outflows should be reduced to further minimize downstream flows while maintaining lake levels between median and upper quartile and providing the flows requested by the provincial power utilities.
- The risk of high water conditions on Lac Seul increases in the late summer/early fall period, so it is desirable to reduce lake levels in late summer to lower this risk.
- The end of October water level should target the preferred freeze-up level of 356.2 m (1168.6 ft).

Lake of the Woods

A) Seasonal Considerations

As with Lac Seul, the adopted strategy for the regulation of Lake of the Woods is to manage the extremely high water conditions to balance impacts above and below Kenora. Should drier conditions return in late summer or early fall, the following interests should be taken into consideration when evaluating flow changes from Lake of the Woods:

- Should there be evidence that loons on the Winnipeg River are attempting to nest in late summer, avoid flow changes during the primary incubation period. About 4½ to 5 weeks of relatively steady flows are needed for nesting success.
- For south shore residents, attempt to lower lake levels to the extent practicable in order to reduce the risk of significant shoreline erosion. The Board agreed in 2001 to work towards summer levels up to 15 cm (6 in) lower than the pre-2001 summer median peak level.
- Should there be evidence of wild rice available for harvest on Lake of the Woods (typically between mid-August and mid-September), attempt to maintain levels that facilitate harvesting. Levels near 322.8 m (1059 ft) seem to be satisfactory.
- For recreational users on Lake of the Woods, maintain water levels in the range of 322.8 to 323.1 m (1059 to 1060 ft).
- Within the regulation parameters for Lake of the Woods, regulate outflows to assist in meeting targets/preferences for the Winnipeg River in Manitoba.

B) Adopted Strategy for Lake of the Woods

Short-Term Strategy

- **In the immediate term, with the dam fully opened, there are no additional steps that can be taken to limit the rate of rise on Lake of the Woods.**
- The International Lake of the Woods Control Board (ILWCB) must approve the LWCB's regulation decisions when Lake of the Woods levels are above 323.39 m (1061 ft). The Convention and Protocol states "during periods of excessive precipitation the total discharge from the lake shall, upon the level reaching 1061 sea-level datum, be so regulated as to ensure that the extreme high level of the lake shall at no time exceed elevation 1062.5 sea level datum".
- Outflow from Lake of the Woods that will yield an inflow of approximately 1400 m^3/s or higher at the Whitedog Dam needs to be coordinated with Ontario Power Generation who has identified a Dam Safety risk at the North Channel Dam above this flow rate.

Long-Term Strategy

- An over-riding goal is to balance conditions by providing relief to downstream Winnipeg River residents as soon as possible, while ensuring that there is a storage buffer on the lake to minimize the risk of a return to increased outflows.
- **Setting specific lake level versus outflow targets at this point in time is not possible.** These values depend on the specific conditions when a decision is being made. Influencing factors are:
    - the magnitude of inflow,
    - the rate of decline,
    - the projected risk of having to increase outflows again,
    - conditions on Lac Seul and the English River, etc.
- **A reduction in the high flows on the Winnipeg River is a high priority but flow reductions are subject to the approval of ILWCB as long as Lake of the Woods level remains above 323.39 m (1061 ft).**
- It should also be noted that erosion on the south end of Lake of the Woods becomes a significant issue at sustained high lake levels.
- Outflow reductions should not be made unless there is a strong indication that the lake level will decline through 323.39 m (1061 ft).
- By mid-July, a 90^{th} %ile inflow is only about 1040 m^3/s and by the end of July is only 750 m^3/s so that the risk of higher lake levels incurred by reducing outflows is reduced by that time.
- Lake of the Woods should be regulated to target for an end of October water level between 322.7 m (1058.7 ft) and 323.9 m (1059.4 ft) with outflow between 300 and 700 m^3/s.