

LAKE MANITOBA LAKE ST. MARTIN

OUTLET CHANNELS PROJECT

Lake Manitoba and Lake St. Martin Outlet Channels Operating Guidelines

Draft as of August 19, 2021

Any variances in the lake levels outside of the target regulation ranges specified below shall be shared between Lake Manitoba and Lake St. Martin insofar as this may be reasonably practicable.

It is assumed that Lake Manitoba and Lake St. Martin Outlet Channel gate settings will be adjusted when required on a weekly or biweekly basis rather than on a daily basis. This means that gate settings made to match inflows and outflows may not perfectly balance inflows and outflows for the whole period between gate operations.

Lake Manitoba

Fairford River Water Control Structure

1. The target regulation range on Lake Manitoba is 812.5 feet to 810.5 feet.
2. During recovery from flood conditions on Lake Manitoba, the Fairford River Water Control Structure is kept wide open until Lake Manitoba recedes to the middle of the range after which it should be cut back to a normal setting (50-60% capacity).
3. During recovery from drought, the Fairford River Water Control Structure is kept at 800 cfs until Lake Manitoba levels increase to middle of the range after which point the structure will be operated to achieve normal outflow (50-60% capacity).
4. Under normal operating conditions, once outflow reaches normal, there are no further stop-log adjustments, as long as Lake Manitoba remains within the range.
5. The minimum flow on the Fairford River should be 800 cfs with a desirable flow of 1,000 cfs as often as practicable.

Lake Manitoba Outlet Channel

1. **Except as outlined in the following conditions**, the Lake Manitoba Outlet Channel will be opened to full capacity when Lake Manitoba is above the top of the regulation range (812.5 feet).
2. **The Lake Manitoba Outlet Channel may be opened pro-actively (when the water level is below 812.5 feet) if the water level on Lake Manitoba is forecasted to be above 813 feet in the same season (REV 1).**

3. **The Lake Manitoba Outlet Channel may remain closed, or only opened partially, if Lake Manitoba is forecast to exceed its desired range by 0.1 metre or less, and the duration above range is small (REV 2).**
4. **During the first five years in which operation is initiated, opening of the gates shall gradually increase the channel flow to allow for monitoring of TSS within the channel. If TSS measurements exceeded allowable limits, the outflow shall not be increased until TSS decreases to allowable levels, or a determination to proceed with opening is made in conjunction with the environmental compliance team (REV 2).**
5. The outflow from the Lake Manitoba Outlet Channel will be reduced when the water level on Lake Manitoba recedes to the middle of the regulation range (811.5 feet), so that the combined flow through the Fairford River Water Control Structure and in the Lake Manitoba Outlet Channel, insofar as practicable, matches the inflow into Lake Manitoba.
6. The Lake Manitoba Outlet Channel will be closed once the Lake Manitoba water level recedes below 811.5 feet and the flow through the Fairford River Water Control Structure is greater than the total inflow into Lake Manitoba. **During Outlet Channel shutdown, consideration will be given to ensuring that the drawdown rate within the Outlet Channel does not compromise channel embankment stability (REV 1).**
7. Operation of the outlet control structure will not be initiated during the period in which there is solid ice cover in the channel (typically from Dec 1 – April 30th). **However, operation may be considered if severe flooding is forecasted for the following spring (REV 1).**
8. **During the period in which there is solid ice cover in the channel, individual gates shall be set to either a fully open or fully closed position to prevent mobilized ice from damaging the back of the gates (REV 2).**

LAKE MANITOBA LAKE ST. MARTIN

OUTLET CHANNELS PROJECT

Lake St. Martin

Lake St. Martin Outlet Channel

1. The target regulation range for Lake St. Martin is 797-800 feet
2. **Except as outlined in the following conditions,** the Lake St. Martin Outlet Channel will be operated to full capacity:
 - a. when the Lake St. Martin water level rises above 800 feet
or
 - b. when the Lake Manitoba Outlet is opened for initial operation, Lake St. Martin is above 797 feet, and **Lake St. Martin is forecasted to go above 800 feet without operation of the Lake St. Martin Outlet Channel (REV 1).**
3. **Initial operation of the Lake St. Martin Outlet Channel will increase flow incrementally over ten days to reduce the possibility of mobilizing sediment and to reduce the level differential across The Narrows, which results from drawing down the north basin while the flow in The Narrows is still low (REV 2).**
4. **The Lake St. Martin Outlet Channel may remain closed, or only opened partially, if the south basin of Lake St. Martin is forecast to exceed its desired range by 0.1 metre or less, and the duration above range is small (REV 2).**
5. **During the first five years in which operation is initiated, opening of the gates shall gradually increase the channel flow to allow for monitoring of TSS within the channel. If TSS measurements exceeded allowable limits, the outflow shall not be increased until TSS decreases to allowable levels, or a determination to proceed with opening is made in conjunction with the environmental compliance team (REV 2).**
6. The outflow from the Lake St. Martin Outlet Channel will be reduced when the lake level decreases below 800 feet, to the greater of the following:
 - a. **25% (REV 1)** of channel capacity,
 - b. the outflow required to ensure the combined flows in the Dauphin River and the Lake St. Martin Outlet Channel matches the total inflow into Lake St. Martin.
7. **The flow in the Lake St. Martin Outlet Channel will be further reduced when the water level on Lake St. Martin recedes below 798 feet, so that the combined flows in the Dauphin River and in the Lake St. Martin Outlet Channel, insofar as practicable, matches the inflow into Lake St. Martin (REV 1).**
8. **The Lake St. Martin Outlet Channel will be closed fully when Lake St. Martin drops below 798 feet and the outflow from the Dauphin River is equal to or greater than the total inflow into Lake St. Martin from the (REV 1) during the period from when ice cover has cleared out of the channel in the spring to October 31st. During channel shutdown, consideration will be given to ensuring that the drawdown rate within the Outlet Channel does not compromise channel embankment stability (REV 1).**
9. If the Lake Manitoba Outlet is in operation in November, the Lake St. Martin Outlet Channel should be operated throughout the winter so that the combined flows in the Dauphin River and in the Lake St. Martin Outlet Channel, insofar as practicable, matches the inflow into Lake St. Martin.
10. Notwithstanding the above guidelines, the Lake St. Martin Outlet Channel will be operated during the spring freshet if the Lake Manitoba Outlet Channel has been in operation over the winter and will continue to be operated into the spring, so that the combined flows in the Dauphin River and the Lake St. Martin Outlet Channel, insofar as practicable, matches the inflow into Lake St. Martin.
11. Initial operation of the outlet control structure will not be initiated during the period in which there is solid ice cover in the channel (typically from Dec 1 – April 30th). However, operation **may be considered if severe flooding is forecasted for the following spring (REV 1).**
12. **When environmental conditions allow for the formation of river ice (typically from Dec 1 - April 30th), flow in the channel shall not exceed 5,300 cfs (REV 2).**
13. **A riparian flow of 50 cfs shall be maintained through the channel when the outlet channel gates are closed. If flow in the Dauphin River falls below 400 cfs, the riparian flow in the channel will stop. Appropriate measures must be taken to mitigate potential environmental concerns associated with no flow in the channel (REV 2).**