

Paul & Rusch Lakes Control Structure Operating Plan

**Supplement to the Operation & Maintenance Plan for the
LMKP LID-DLD LID Pump Station Outlet to the
Otter Tail River**

Little McDonald, Kerbs & Paul Lake Improvement District

May 2018



Otter Tail County issued Conditional Use Permit #6824 to the Little McDonald, Kerbs & Paul Lake Improvement District (LMKP LID) and the Devils-Little Devils Lake Improvement District (DLD LID) for the construction and operation of the LMKP LID-DLD LID Pump Station Outlet to Otter Tail River Project (the “Project”) on July 5, 2017. A condition to that approval was the submittal of an approved operating plan that included provisions for monitoring and operating the project so that adverse downstream impacts related to water quality and water quantity were mitigated. The approved operating plan is titled “Operation & Maintenance Plan, LMKP LID-DLD LID Pump Station Outlet to Otter Tail River” and is dated May 2017. The focus of that plan was on downstream water bodies, but it also included a section on the operation of the control structures controlling flows between Paul, Rusch and Little McDonald Lakes. That section reads as follows:

Paul Lake: The gates on the control structures on Paul Lake and Rusch Lake may be opened when the water levels on Paul Lake exceed its ordinary high water (OHW) elevation (1356.7 ft.) and Little McDonald Lake (OHW 1355.6 ft.) has a lower level (such that gravity flow between the lakes will be permitted). The LMKP pumpstation must be operating for the control gates on Paul Lake and Rusch Lake to be opened and they must be closed when the LMKP pumpstation is shut off.

The Project includes control structures on both Paul and Rusch Lakes. These structures are nearly identical and consist of a concrete structure with a weir wall in the center that allows the crest of the weir to be modified through the adjustment of a series of removable weir plates. To better define how the flow of water from Paul Lake and Rusch Lake will be controlled, the LMKP LID has adopted the following policy for managing these flows.

In addition to the previously approved condition that the LMKP pumpstation must be operating for the control gates on Paul Lake and Rusch Lake to be opened and they must be closed when the LMKP pumpstation is shut off, the control gates will be operated so that the lakes are lowered incrementally, in 6 inch increments, in such a manner that the elevation of each lake is brought closer to its DNR-designated Ordinary High Water (OHW) elevation.

- Upon initial startup and operation of the pumpstation, Little McDonald Lake must be lowered first before flows from Rusch and Paul Lake are allowed to discharge into Little McDonald Lake. After Little McDonald Lake is lowered by the designated increment (i.e. 6 inches), Rusch and Paul Lakes will then be lowered by the same designated increment, and then the cycle will repeat itself until the desired water surface elevations are obtained.
 - After the completion of the first cycle, priority will be given to the lake with the greatest differential between its measured water surface elevation and its DNR-designated OHW elevation so that all three lakes will then be managed so that they
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are all equally above their OHWs, within the range of the designated increment of 6 inches.

Otter County Public Works staff will operate the control structures on Rusch and Paul Lakes (they are also operating the pumpstation). The unused weir plates will be stored in the LMKP pumpstation building.

The permit issued for this project by the Minnesota Department of Natural Resources (MnDNR) does allow the LID to artificially drain any of the LMKP lakes below their designated OHW elevations. The control structures on Rusch and Paul Lakes do not allow the weir plates to be removed to an elevation below the respective OHW elevation for each lake.

