



# Can the Muskoka River Water Management Plan help to reduce the effects of flooding?

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This article is part of the Ripple Article Series. Every other week, an article will be posted on the Engage Muskoka website that dives deeper into one of the twelve technical projects in the **Making Waves: Integrated Watershed Management initiative.**

A watershed is an area of land that drains to a stream or river, and eventually to a lake or ocean. Landforms such as hills determine the boundaries of a watershed and direct the path and speed of rivers within it. In the Muskoka River Watershed, the headwaters originate on the western slopes of Algonquin Park and flow southwesterly for 210 kilometers towards Georgian Bay.

The Muskoka River Watershed receives on average more than 1,000 millimeters of precipitation each year, and with over 2,000 lakes, the water levels are constantly fluctuating.

Although originally constructed to assist with maintaining water depths for navigation and timber driving, dams in the Muskoka River Watershed are still used today to manage and maintain water levels for hydro production, as well as navigation and recreational purposes. It's important to note that dams in the Muskoka River Watershed were not designed as flood control structures, but how they are operated might be a tool to help lessen the impacts of flood events.



There are a total of 42 dams in the watershed. Of these structures, 29 are owned and operated by the Ministry of Natural Resources and Forestry and 11 are owned/operated by the waterpower industry. The District of Muskoka owns and operates one dam. Each dam is managed by the Province of Ontario's 2006 Muskoka River Water Management Plan (MRWMP). Because of climate change, seasonal weather variations are becoming more extreme and less predictable than in 2006, as evidenced by the frequency of floods in 2008, 2013, 2016, and 2019.

The District of Muskoka is exploring ways to reduce the impacts of flooding while maintaining the health of the Muskoka River Watershed through a series of projects called "Making Waves." One of these projects involves revisiting the existing MRWMP to find opportunities to increase resiliency to future flood events. As noted, these dams are not intended to mitigate floods. However, modifying current operational practices of dams may assist in reducing the effects of flooding. For example, drawdown triggers (lowering lake levels based on time of year and predicted precipitation) may be refined to help manage the movement of water through the system. Targeted seasonal operating levels might also be adjusted as more snowfall and mid-winter thaw events become evident with climate change.

While simply dropping water levels may appear to be a straightforward tool to help reduce the impacts of flooding, it's important to consider how changing lake levels could impact the larger ecosystem and water quality, including the fish and wildlife that inhabit the surrounding and downstream areas. Given the size of the Muskoka River Watershed, which is roughly the same size as the Province of Prince Edward Island, striking a balance of managing water levels is not an easy task. Because of the complexities of dam operations, a detailed report on potential operational adjustments will be completed by Fall 2022, which will be followed by a comprehensive scoping study to identify approaches for flood mitigation in the short term. There will also be a public presentation outlining the results of these two complementary projects. Be sure to subscribe to the **Making Waves Engage Muskoka webpage** to receive project updates, including notification of the public presentation date and release of the final report.

There are 12 technical projects in the Making Waves initiative. Refining the MRWMP to increase resiliency to floods and the scoping study are two of the projects. To learn more about Integrated Watershed Management and the other projects under "Making Waves," be sure to check out the Engage Muskoka page.