

LAKE CHAMPLAIN-RICHELIEU RIVER FLOOD STUDY, 2017-2021

Performance indicators

How they tell us what might happen when water levels change

One of the outcomes of the flood study will be a set of recommendations on potential solutions to mitigate flooding and reduce its impacts. To make the best possible recommendations, the study board will use performance indicators to assess the impacts of floods and compare various flood mitigation scenarios.

Performance indicators will help decision-makers and the public weigh all possible courses of action, and prioritize them.

In this study, *performance indicators* will reflect how society, the economy and the environment could be affected by floods and by a change in water levels if a particular flood mitigation measure were implemented.

Measuring the impact of water levels

Performance indicators generally fall into one of three categories: environmental, such as wetland species of plants or animals; economic, such as damages to property and farmlands caused by flooding; and social, such as the impacts of flooding on public health and where people choose to live and work.

Performance indicators provide a better idea of how variations in water levels may affect buildings, ecosystems, and communities. For instance, the number of houses flooded, days of recreational boating lost, and amount of habitat for spiny softshell turtles are all examples of performance indicators.

Using the past to guide future action

The water levels of Lake Champlain and the Richelieu River have an impact on several attributes of the basin, including fish and wildlife habitats, economic activities, and various water uses. Over time, performance indicators can tell a story, reflecting how vital environmental, social or economic components of the system have responded during past flood events, such as during the 2011 floods. They can then be used to forecast and measure flood impacts that might occur over multiple decades. The results of modelling historical data provide a baseline to compare against a set of possible solutions that could be implemented to mitigate floods without impairing the environment, boating, and water intakes in between periods of flooding.

Next steps

The process of identifying, assessing and modelling performance indicators is well underway. The next steps will be to run them through computer models to predict how each might react under different scenarios of flood mitigation solutions. This stage of work will also help the technical working groups to change course if there are important gaps in information that is collected. Eventually, all of the important ecological, economic, social and hydrologic information will be combined into tools that will be used in weighing decisions and helping guide appropriate actions for the communities in the basin.

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