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LAKE CHAMPLAIN-RICHELIEU RIVER FLOOD STUDY, 2017-2021

Reducing the impacts of flooding

Building a framework of potential solutions in the basin

Several record floods around Lake Champlain and the Richelieu River have had devastating impacts on homes, roads, buildings and farmlands in the last century. Flooding around the shores of Lake Champlain and along the Richelieu River generally occurs when lake levels are very high, causing a large volume of water to flow through the river.

The Lake Champlain Richelieu River flood study is considering a variety of options to lessen economic, environmental and social impacts felt by basin communities during future flooding events. Potential solutions include options to reduce water levels caused by extreme rainfall, significant snowmelt, along with strong winds, as well as encouraging communities and property owners to take steps to prepare in advance of flooding.

Potential solutions to future flooding

The most effective approach to reducing the impacts of flooding may be a combination of measures. For each measure, the study will assess the potential impact on important resources and services provided by water in Lake Champlain and the Richelieu River. These include wetlands; aquatic life; recreation; domestic, industrial and municipal uses of water; shorelines; the built environment on the land along the lake and river; and agriculture. Recommendations of structural and non-structural solutions must also take into account costs, and the level of support from the public and the jurisdictions responsible for implementing them.

Structural solutions to reduce high water levels and there by flooding impacts

There are two main approaches to reduce high water levels. The first looks at potential riverine solutions. Currently, shoals near St. Jean sur Richelieu act as a natural control for water levels upstream in the river and in Lake Champlain. The study will use advanced hydraulic models to assess the impacts of solutions that would increase the flow in the Richelieu River by removing submerged barriers (e.g., obsolete eel traps) or by excavating the river bed. If implemented, a control structure such as a weir could be used to maintain desired flows.

Another riverine solution being considered is to assess the potential to modify the Chambly Canal to allow more water to move through it, particularly in the spring when water levels tend to be higher. The study will not evaluate the impacts of a dam across the Richelieu River, as governments did not request it.

The second approach is to examine possible solutions in tributary watersheds and floodplains along Lake Champlain and the Richelieu River. Technical specialists are considering nature-based options to promote water storage in floodplains, wetland and other lands. These solutions would either store or impede the flow of water in watersheds by creating wetlands, reconnecting rivers to their floodplains, and diverting a portion of river flows to adjacent lands where feasible to help lower the peak water levels and reduce overall flooding.

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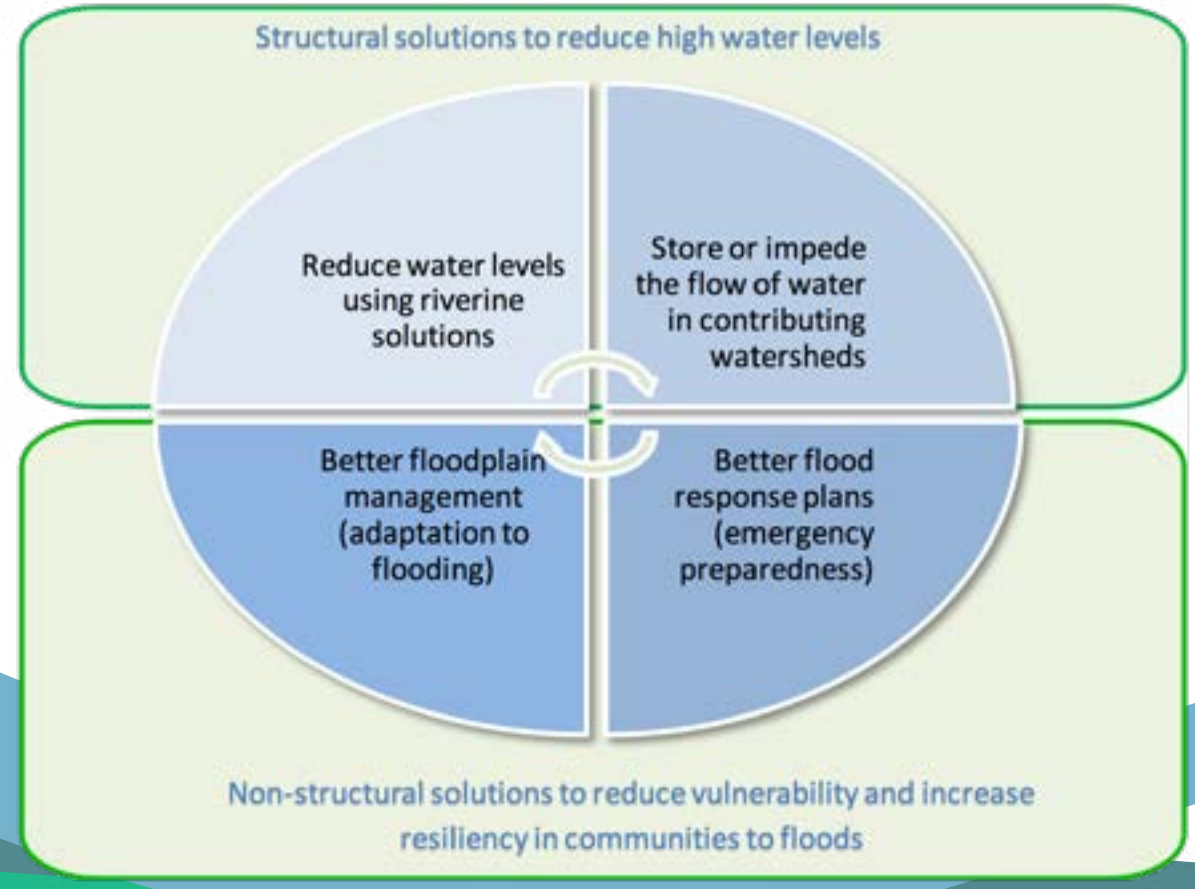
Non-structural solutions to reduce vulnerability and increase resiliency to floods in communities

Another approach the study is considering is how to improve the capacity of communities to respond to floods and be better prepared. Implementing improved binational flood warning and inundation mapping is a key part of this approach. This would give communities accurate warning of impending floods. The study will also assess various strategies to reduce risk and vulnerability of communities and community infrastructures to major floods, such as improving evacuation plans, fortifying specific roads, and boosting emergency response services.

Boosting floodplain management practices and helping communities better adapt to floods is another non-structural approach. To do this, the study will evaluate best management practices, and make recommendations on such measures as understanding potential losses at different levels of flooding, delineating flood lines, establishing buffer zones, relocation policies, and building regulations.

Next steps

The study will continue to evaluate a wide range of possible flood mitigation solutions using the best available science. A key part of this process is sharing ideas with the public, all levels of government, and many other interested groups on both sides of the border, and seeking feedback on the level of support for implementing the solutions.



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