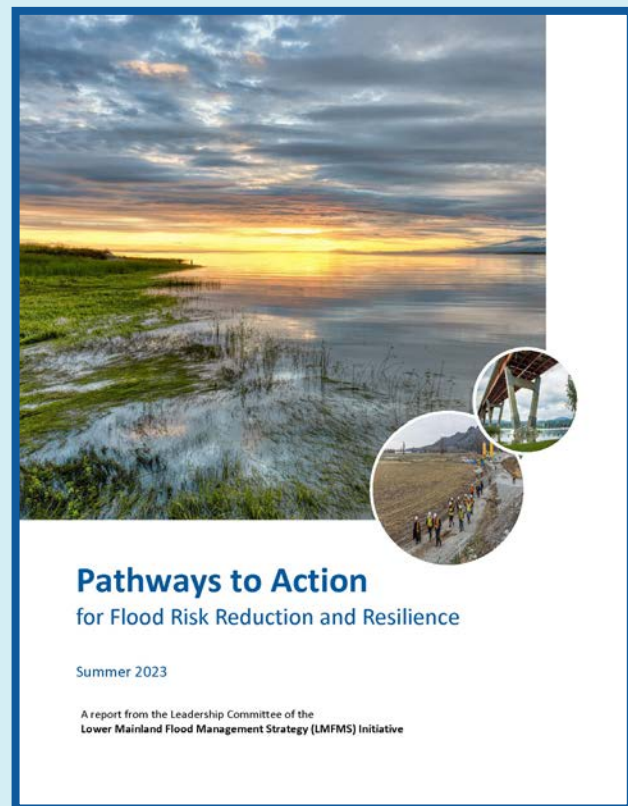


Lower Mainland Flood Management Strategy Initiative Update



The final report from the Leadership Committee of the Lower Mainland Flood Management Strategy (LMFMS) Initiative will be available on floodwise.ca

Working Towards a Flood Strategy

The Lower Mainland Flood Management Strategy (LMFMS) initiative completes in 2023. This was a multi-year effort aimed at supporting the development of a regional strategy to reduce the risks associated with Fraser River and coastal flooding and to increase the flood resilience of BC Lower Mainland communities.

The initiative was overseen by a multi-government Leadership Committee with support from the Fraser Basin Council. While more work and an updated process is needed, key next steps have been identified.

Phase 2 reports are available in 2023:

- ***Pathways to Action for Flood Risk Reduction & Resilience***
- ***Synthesis of Technical Analysis***

Acknowledgements

The Government of Canada and the Government of British Columbia are recognized for funding for the work of the past two years through the National Disaster Mitigation Program. The Leadership Committee thanks all governments, organizations and individuals that contributed to the work of this initiative throughout Phases 1 and 2.

Pathways to Action was prepared by the Fraser Basin Council (FBC) with oversight and direction from the LMFMS Leadership Committee. It was further informed by the input and advice of a multi-government Pathways to Action Working Group. Their collaboration and contributions are also most appreciated.

The Leadership Committee and FBC acknowledge with gratitude the contributions and support of Stó:lō Tribal Council Chief and Chair of the Emergency Planning Secretariat, Tyrone McNeil, in the development of the Pathways report.

Pathways to Action Report Condensed Summary of Recommendations

1. Improve Understanding of Flood Risk

Create an ongoing program to better understand Lower Mainland flood hazards and risks. The program would continually improve information about flood hazards, risks and resilience measures, as well as tools to inform flood-related planning and decision-making.

2. Enhance Coordination and Collaboration

Align a regional strategic approach to flood risk reduction and resilience in the Lower Mainland with the BC Flood Strategy and other flood-related initiatives. The BC Flood Strategy could be relied on as guidance and/or direction on approaches to regional-scale decision making, including frameworks for prioritization, assessment and funding to implement any future potential regional- and local-scale flood strategies.

3. Assess and Address Regional Priorities

Identify and prioritize the critical infrastructure and essential services that are at risk from coastal or Fraser River flooding in the Lower Mainland and make these early priorities for flood risk reduction, resilience and climate adaptation.

4. Advance Flood Risk Reduction, Resilience and Climate Adaptation Actions

Establish a framework to guide and evaluate a full suite of flood risk reduction, resilience and climate adaptation measures, including nature-based solutions, green infrastructure and approaches that make more room for the river.

5. Strengthen First Nations Participation

Invest in First Nations participation and capacity-building and seek guidance and direction on the implementation of UNDRIP articles 18, 19, 29 and 32, the BC Declaration Act (2019) and Bill C-15, which formalizes UNDRIP within Canadian law (2021), recognizing First Nation title and reconciliation beyond Sec 91 (24) Lands of the Constitution Act.

6. Strengthen a Strategy Development Process

Establish a leadership table to oversee the implementation and ongoing refinement of Pathways to Action “early action” recommendations. The leadership table would include all orders of government (First Nations, local, provincial and federal governments). The leadership table would support direction on a strategic regional approach to flood risk reduction and resilience, including development of new or updated terms of reference.

7. Secure Funding

Secure funding commitments and invest in urgent actions to address critical infrastructure and essential service priorities with appropriate risk reduction and resilience measures.

8. Strengthen Regional-Scale Decision-Making

The BC Flood Strategy process should provide guidance and/or direction on approaches to regional-scale decision making to implement regional-scale flood strategies. The proposed leadership table (see Strategy Development Process) should further explore how the unique values, interests, and needs of the Lower Mainland region could inform regional-scale decision making.

9. Refine Strategy Purpose and Goals

A regional strategic approach to flood risk reduction and resilience should be flexible and iterative in response to changing regional needs, and it should include all four priorities of the Sendai Framework, to: improve understanding of flood risk, support investment and actions to reduce flood risk, strengthen flood risk governance, and enhance flood preparedness for effective response, including to “Build Back Better.”

10. Clarify Geographic Scope and Flood Hazards

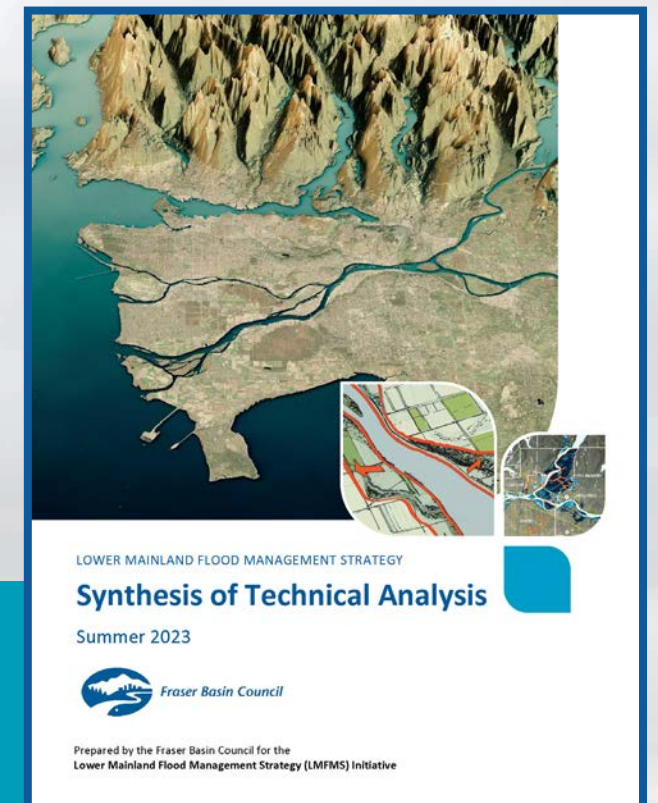
A regional strategic approach to flood risk reduction would initially be expected to focus on both Fraser River and coastal storm surge flood hazards, inclusive of tributaries affected by these flood hazards. This approach would build on existing information, align with other relevant initiatives and advance an assessment of regionally significant pluvial (rainfall) and other flood hazards. Consideration should also be given to watershed-scale influences on flood hazards and risk reduction.



Maps and reports at floodwise.ca

Synthesis of Technical Analysis Report Project Highlights

The **Synthesis of Technical Analysis** is a report prepared by the Fraser Basin Council to summarize technical work of the Lower Mainland Flood Management Strategy initiative. The work is available to support communities.



Highlights of Technical Work



1) Analysis of Flood Scenarios and 2) Lower Mainland Dikes Assessment (2015)

- Analysis of 2 Fraser River and 2 coastal flood hazard scenarios in the Lower Mainland (present day and 2100), which account for climate change and 1 m of sea level rise by 2100. Results show a growing likelihood of a large-magnitude flood in the Lower Mainland because of sea level rise and other projected climate change impacts.
- A review of 74 Lower Mainland dikes also confirmed the majority were inadequate to withstand these large-scale floods.



Regional Assessment of Flood Vulnerability (2016)

- Based on the 2 coastal and 2 Fraser River flood scenarios, this assessment considered impacts of the flood scenarios on development in floodplain areas (residential, commercial and public property, agricultural lands, transportation networks, critical infrastructure and municipal services).
- Damages ranged from \$19.3 billion (coastal, present day) to \$32.7 billion (Fraser River, 2100), not accounting for inflation or increased development or population.



Flood and Environment Atlas (2019)

- This online atlas mapped environmental values and features as well as dikes and flood extents in the lower Fraser River and coastal foreshore areas, based on the 2 coastal and 2 Fraser River scenarios.



Hydraulic Modelling and Mapping in BC's Lower Mainland (2019)

- A 2D hydraulic model was developed for the lower Fraser River floodplain. 27 Fraser River and coastal flood scenarios were assessed for present day events and climate change scenarios.
- Five hypothetical mitigation scenarios — dike raising, a local dike setback, sediment removal, local land raising and upstream storage — were also assessed to better understand the impacts on flood depth and extent. Local governments and First Nations, as well as some non-governmental organizations, have used the hydraulic model in 60+ flood-related projects to date.



Lower Mainland Flood Risk Assessment (2020)

- This assessment overlaid Lower Mainland assets and values in coastal and Fraser River flood hazard areas to simulate a range of impacts on assets and values of communities. It estimated the consequences of 8 coastal and 8 Fraser River flood scenarios, considering 20 different categories of flood risk. A lack of comparable data for First Nations interests, values and reserve lands in this risk assessment, compared with other areas in the region, is recognized as a key shortcoming.



Lower Mainland Dikes: Analysis of Freeboard and Vulnerability (2022)

- The 2D hydraulic model was used to compare potential Fraser River flood levels near the dikes for the 50-year, 100-year, 200-year, 500-year and 1894 flood scenarios, using updated surveys of dike crest elevations. The work helped identify potential areas for dike overtopping or loss of freeboard. The findings were shared with all diking authorities to support emergency planning and longer term flood mitigation planning.