

# Funding For Climate Change Adaptation – Coastal & Waterfront Community Flood Protection

## DESCRIPTION

Flood protection works are deficient in many coastal communities, which are due to climate change, at an increasing risk of flooding due to long term sea level rise. Current disaster mitigation funding programs provide limited funds to address long term dike improvement and shoreline protection works, with significant financial responsibility falling to local government, which do not have the financial capacity to assume such significant costs. Senior levels of government should work with local governments and First Nations to fund and assist in implementing a streamlined approvals process for long term flood protection adaptation programs.

## BACKGROUND

Climate change poses a serious threat to several thousand kilometres of coastline communities due to sea level rise and waterfront communities across the country which are vulnerable to inland seasonal flooding due to seasonal climate change. Floods from rivers and oceans could destroy or affect residential, commercial, industrial and agricultural properties as well as affect transportation means (roads, highways, bridges) and cause widespread disruption to day to day living requiring significant expenditure to restore areas back to pre-flood conditions. The damage to the economy and businesses due to floods are significant, in the hundreds of millions of dollars. Flood protection structures; measures such as dikes and associated infrastructure (pump stations, flood boxes, rip rap and relief wells) throughout Canada's coastal and waterfront communities need to be upgraded to combat the threat of sea level rise of up to 1m by 2100. Significant timebound expenditure is needed to upgrade flood protection infrastructure across the country.<sup>1</sup>

In British Columbia, municipalities are facing an aging dike infrastructure. In 2015, BC's inspector of dikes hired Northwest Hydraulic Consultants to assess 500 kilometres across the highly populated Lower Mainland of B.C. and they concluded that none of the dikes fully met provincial standards. Even more concerningly, 71% were vulnerable to failure during flooding.<sup>2</sup> In 2012 in Truro, Nova Scotia, flood waters breached a dike, causing millions of dollars in damage. This type of climate change related coastal flooding poses a threat not only to valuable businesses, homes, and farmland, but it can also disrupt access to critical essential services like sewage treatment, clean drinking water, power, and access to safe transportation routes.<sup>3</sup> Mitigating these risks will reduce vulnerability for the short term; however, long term adaptation strategies are needed to cope with environmental change. Local governments, however, have limited economic resources and many do not have the financial capacity

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<sup>1</sup> 2019, Surrey Coastal Flood Adaptation Strategy – Presentation to the Surrey Board of Trade Environment Team by the City of Surrey Environment and Drainage Manager <https://businessinsurrey.com/wp-content/uploads/2019/02/CFAS-Surrey-BOT-Feb-14-2019-compressed.pdf>

<sup>2</sup> Globe & Mail: Will Sackville's dikes finally fall? Rising seas could ruin land Acadians turned from marshes to farms <https://www.theglobeandmail.com/canada/article-will-sackvilles-dikes-finally-fall-how-rising-seas-could-ruin-land/>

<sup>3</sup> Chronicle Herald: Province, Ottawa spending \$1.14m to reinforce Bay of Fundy dikes against rising seas <https://www.thechronicleherald.ca/news/local/province-ottawa-spending-114m-to-reinforce-bay-of-fundy-dykes-against-rising-seas-302999/>

to fund large scale adaption projects. For coastal and waterfront communities, these types of adaption projects will involve dyke/seawall upgrades, improvements to foreshore protection, and land use planning and flood level policy changes. "A recent study commissioned by the Union of Quebec Municipalities found that the cost of adapting to climate change for Quebec municipalities could hit \$4 billion over the next five years"<sup>4</sup> alone. The federal government's current Disaster Mitigation and Mitigation Fund (DMAF) is currently \$2 billion in total for all municipalities and projects across Canada. This amount is insufficient to meet current needs for disaster mitigation projects, much less for investment in future projects.

The Federation of Canadian Municipalities (FCM) and Insurance Bureau of Canada (IBC) published a report in February 2020 which estimated the long-term need for investment in climate change adaptation measures at the local level. Their analysis "revealed an average percentage, weighted by regional variations, across all studies, populations, communities, locations, climate risks and infrastructure types of 0.26% of national GDP or \$5.3 billion annually. This figure represents adaptation investment in local public infrastructure only that would be cost-shared between the three levels of government."<sup>5</sup>

Collaboration between multiple stakeholders, including federal, provincial and municipal governments, private landowners, residents, First Nations, and businesses in order to develop a strategic plan for funding and approval of flood prevention infrastructure investments over time, which will both increase adaptive capacity and reduce vulnerability to climate change.

## RECOMMENDATIONS

That the Government of Canada:

1. Partner with provincial and local governments to provide guaranteed, predictable, flexible federal funding and a stream-lined approval process, through a strategic plan over time, to ensure needed adaption strategies that will both increase adaptive capacity and reduce vulnerability to climate change.

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<sup>4</sup> FCM Policy Resolution: Federal Climate Change Adaptation Funding and Support for Regional Disaster Mitigation and Flood Planning (adopted June 2019) <https://data.fcm.ca/home/fcm-resolutions.htm?lang=en-CA&resolution=203b9e90-df86-e911-baa5-005056bc2614&srch=%flood%&iss=&filt=false>

<sup>5</sup> INVESTING IN CANADA'S FUTURE: The Cost of Climate Adaptation at the Local Level <https://data.fcm.ca/documents/reports/investing-in-canadas-future-the-cost-of-climate-adaptation.pdf> (page 32)