



## PREVENTING DISASTER BEFORE IT STRIKES: DEVELOPING A CANADIAN STANDARD FOR NEW FLOOD-RESILIENT RESIDENTIAL COMMUNITIES

**THE SITUATION:** Natural catastrophes are on the rise in Canada

- Catastrophic insurable losses borne by property and casualty insurers in Canada have more than doubled every five to 10 years since the 1980s (Insurance Bureau of Canada [IBC])
- From 2009 to 2015, federal expenditure on the Disaster Financial Assistance Arrangements (DFAA) program was more than in the previous 39 fiscal years combined<sup>i</sup>
  - DFAA's spending on floods was the highest, representing 75% of all weather-related expenditures<sup>ii</sup>

**THE IMPACT:** Flood-related mortgage defaults are a growing concern for Canadians

- 1.7M Canadian households (19% Canada's population) are at risk of riverine and overland flooding (IBC)
- After July 2013 flooding in the GTA, the average insurable claims were \$40,000 (IBC)
- Where repeated flooding has occurred, flood insurance coverage may be limited
- Almost half of working Canadians are living paycheque to paycheque, and 1 in 4 Canadians are not able to "scrape together \$2,000 if an emergency arose next month"<sup>iii</sup>

**A SOLUTION:** In consultation with over 100 municipal stormwater experts, engineering consultants, developers, homebuilders and other stakeholders nationally, the Intact Centre on Climate Change Adaptation [has developed 20 best practices](#) for designing new communities in Canada that are more flood-resilient. These include:

- Not building new homes in floodways, where flood risk is the highest
- Increasing storm-sewer capacity in new communities in anticipation of more severe rainfall
- Designing streets to channel rainfall away from homes to safe discharge areas
- Elevating homes well above potential water levels that follow extreme rainfall events
- Locating sewer-pumping stations in areas where they will remain operational during extreme rainfall, reducing the chance of sewer backup into homes

The [Standards Council of Canada](#) has funded this research and has subsequently committed to support the development of a new National Standard of Canada based on these 20 best practices, in support of the Government of Canada's objective to adapt infrastructure to address the impact of climate change.



### ABOUT THE INTACT CENTRE

[The Intact Centre on Climate Adaptation](#) (Intact Centre) is an applied research centre with a national focus within the Faculty of Environment at the University of Waterloo. The Intact Centre works with homeowners, communities, governments and businesses to identify and reduce the impacts of extreme weather and climate change. The establishment of the Intact Centre was made possible through the leadership, vision, and generosity of [Intact Financial Corporation](#), a long-time partner and donor to the University of Waterloo – particularly supporting climate adaptation. In November 2015, Intact announced a gift of \$4.25 million directed in support of the centre's mission and goals.

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ON CLIMATE ADAPTATION



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<sup>i</sup> Office of the Auditor General of Canada. 2016. Reports of the Commissioner of the Environment and Sustainable Development (Report 2: Mitigating the Impacts of Severe Weather).  
<sup>ii</sup> Parliamentary Budget Officer of Canada. 2016. Estimate of the Average Annual Cost for Disaster Financial Assistance Arrangements due to Weather Events.  
<sup>iii</sup> Canadian Payroll Association. 2016. Eighth Research Survey of Employed Canadians.