

EXTREME WEATHER & CLIMATE CHANGE: NOT ADAPTING IS NOT AN OPTION



Prepared for:



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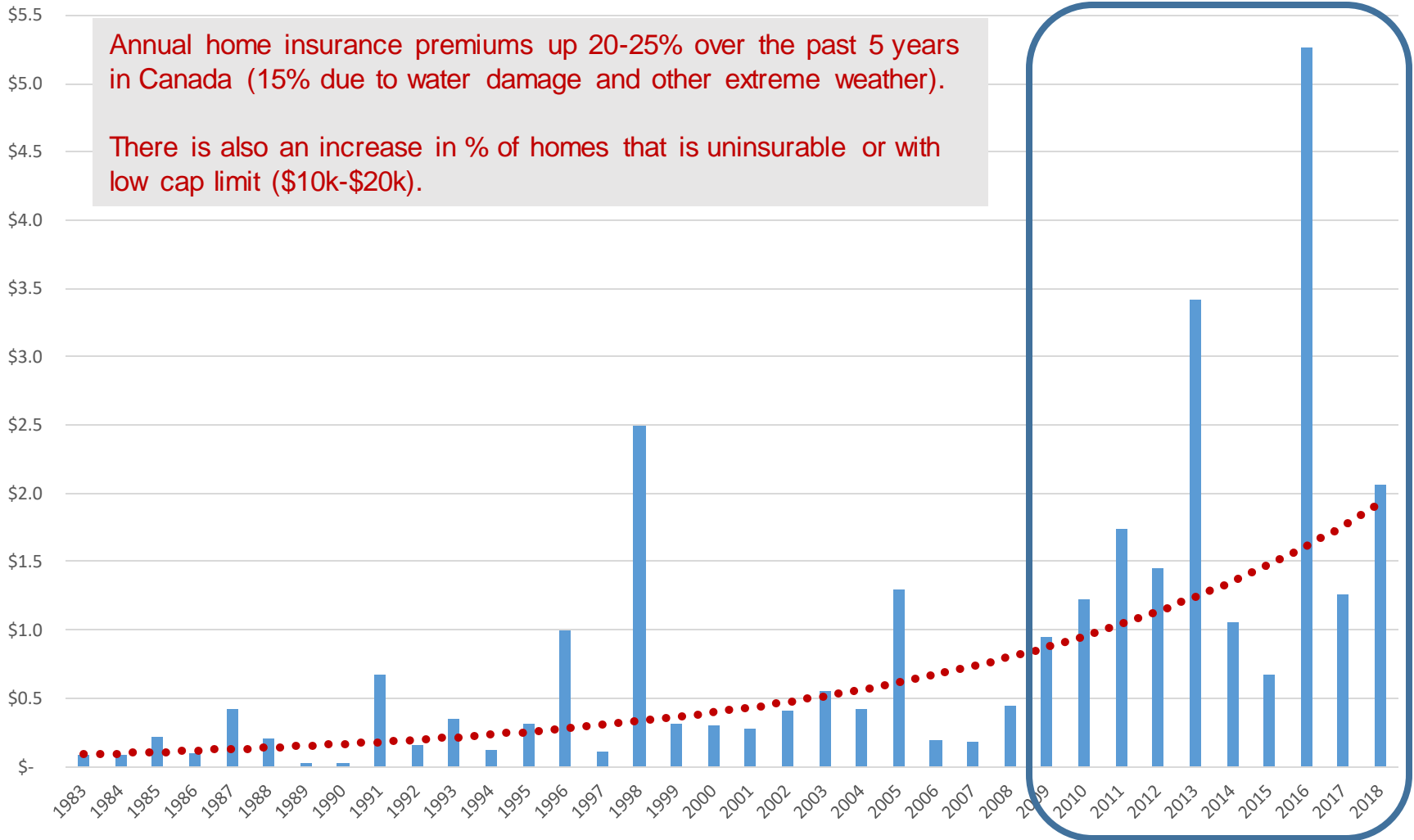
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1. Climate change: a problem that won't go away
2. Rising costs of extreme weather: flooding is the “elephant in the room” in Canada:
 - P&C catastrophic insurable claims
 - Mental health and time off work
3. New guidelines and standards for flood-resilience:
 - Homes
 - Communities
 - Commercial Real Estate
4. New areas of focus: wildfires and extreme heat
5. Discussion: how well-positioned are CASF members to address climate change & extreme weather?

COSTS OF EXTREME WEATHER: P&C CATASTROPHIC INSURABLE LOSSES (\$BLN)

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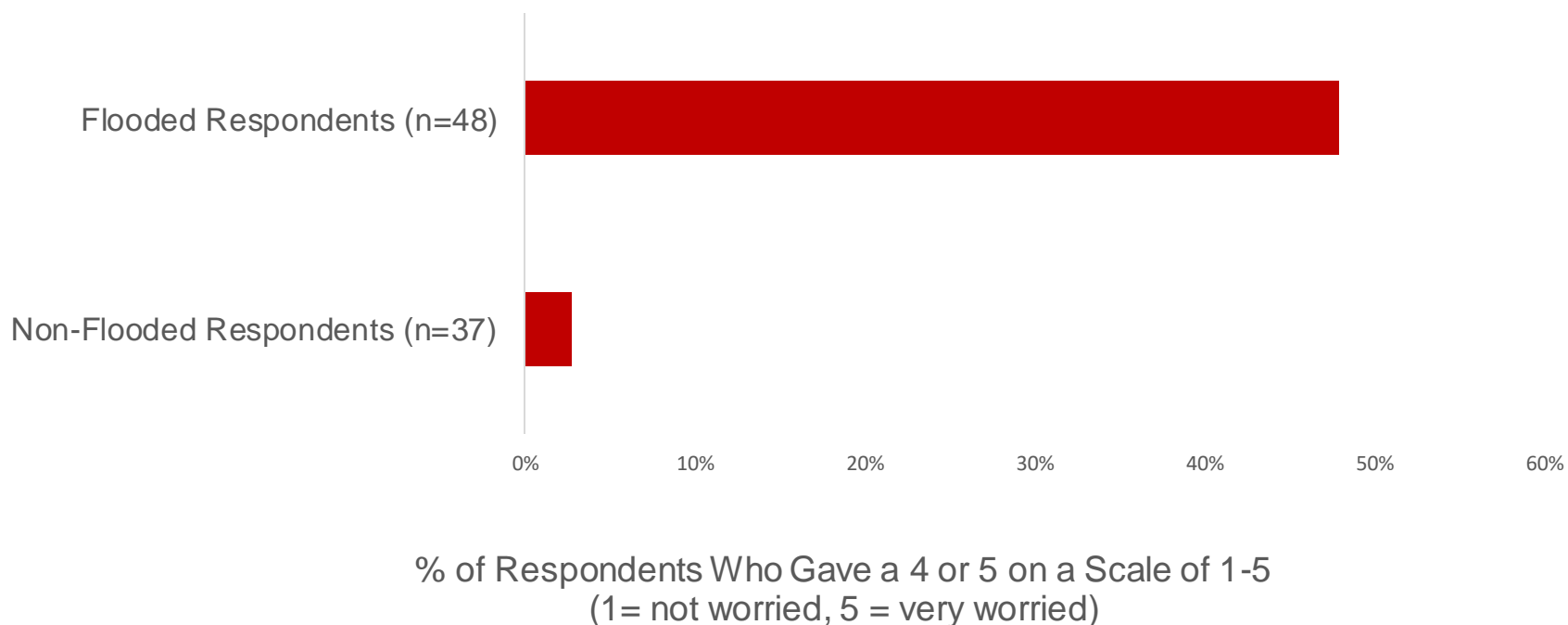
Source: IBC Facts Book 2019, PCS, CatIQ, Swiss Re, Munich Re & Deloitte. Values in 2018\$ CAN; total natural catastrophe losses normalized by inflation and per-capita wealth accumulation.

MENTAL HEALTH AND TIME OFF WORK IMPACTS OF BASEMENT FLOODING

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- *“It’s something you never want to experience again in your life”*
- *Average time off work following basement flood ~7 days*
- *Mental health impact / stress that lingers (~50% of respondents worried when it rains, 3 years after the flood event)*

Three Years After A Flood:
Responses to "How Worried Do You Get When it Rains?"



NEW GUIDELINES AND STANDARDS FOR FLOOD-RESILIENCE (EXAMPLES):

Homes - Flood Protection Guideline

New Community Design Standard

Existing Community Retrofits Standard

Commercial Real Estate Retrofits Guideline



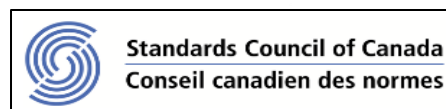
<https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2019/04/Home-Flood-Protection-Program-Report-1.pdf>

<https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2017/10/Preventing-Disaster-Before-it-Strikes.pdf>

<https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2019/01/Weathering-the-Storm.pdf>

<https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2019/10/Ahead-of-the-Storm-1.pdf>

New Standards Supported by:

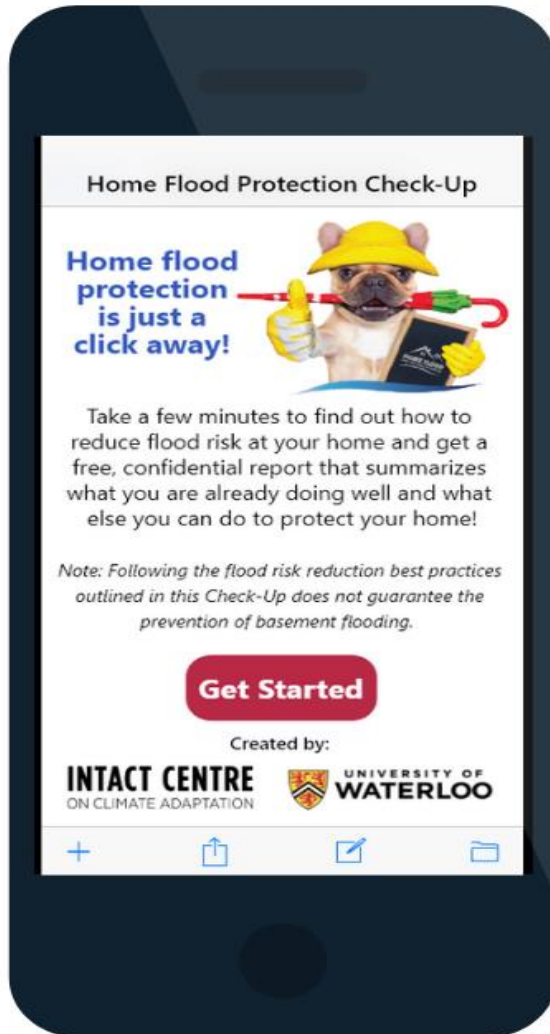


50-100 Subject Matter Experts per Standard

ENGAGING WITH HOMEOWNERS ON FLOOD-RESILIENCE ACTIONS

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Step 1: Maintain What You've Got at Least Twice per Year

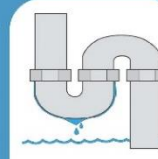
Do-It-Yourself
for \$0



Remove Debris from Nearest Storm Drain



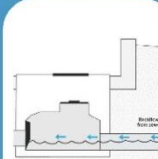
Clean Out Eaves Troughs



Maintain Plumbing, Fixtures and Appliances



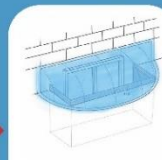
Test Your Sump Pump



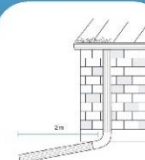
Clean Out Your Backwater Valve

Step 2: Complete Simple Upgrades

Do-It-Yourself
for Under \$250



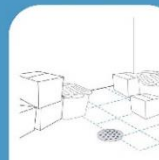
Install Window Well Covers



Extend Downspouts and Sump Discharge Pipes at Least 2m from Foundation



Store Valuables and Hazardous Materials in Watertight Containers or Remove from Basement



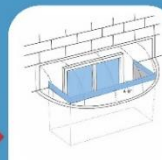
Remove Obstructions to Basement Floor Drain



Install and Maintain Flood Alarms

Step 3: Complete More Complex Upgrades

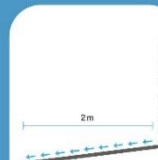
Work with a Contractor for
Over \$250



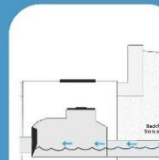
Install Window Walls that Sit 10-15 cm Above Ground and Upgrade to Water Resistant Windows



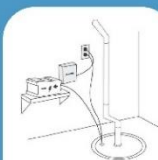
Disconnect Downspouts, Cap Foundation Drains and Extend Downspouts to Direct Water at Least 2m from Foundation



Correct Grading to Direct Water at Least 2m Away from Foundation



Install Backwater Valve



Install Backup Sump Pump and Battery

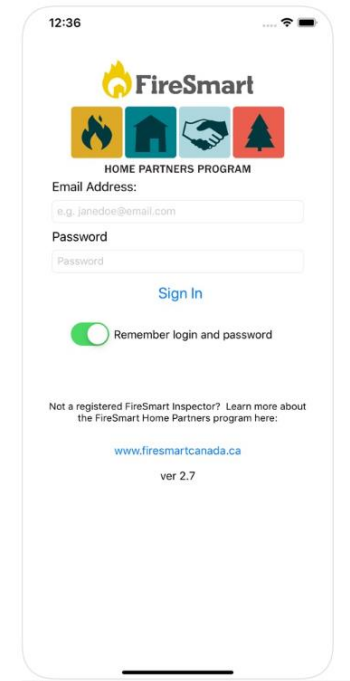
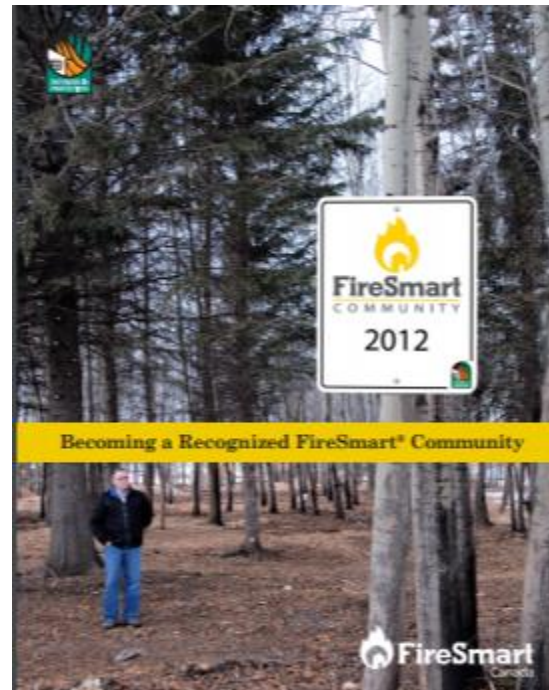
<https://homefloodprotect.info/quiz/test/>

- In the past decade, **7,000 – 8,000** wildfires occurred in Canada, annually.
- On average, they covered a total area of **2.5 million hectares** (half the size of Nova Scotia)
- This is **double the average area** impacted in Canada in the 1970's
- **11 million Canadians** live in the Wildfire Urban Interface (WUI) areas, where homes and other structures meet or are in close proximity to wildland vegetation
- Wildfire **smoke** can travel far, causing health concerns miles away

FIRESMART CANADA: THE GO-TO SOURCE ON ADAPTATION FOR CANADIANS LIVING IN WUI AREAS

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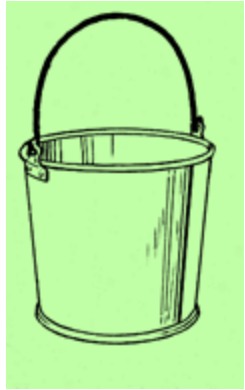


The Intact Centre and Fire Smart Canada have committed to work together to promote the uptake of FireSmart best practices for homes, new and existing communities

- By 2050 hot summer days in southern Canada exceeding **30°C** will be **4X** more frequent than today
- Extreme heat will have **profound health implications** on Canadians and will increase mortality rates. Most at risk are vulnerable populations such as the elderly, the young, pregnant women and the homeless
- In the presence of the **urban heat island**, the average air temperature of a city is 1 to 3°C warmer than its surroundings
- **Lack of air conditioning** exacerbates heat vulnerability (26°C is the desired health based threshold for indoor temperatures)

ADAPTING TO EXTREME HEAT: 3 SOLUTION “BUCKETS”

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Green Initiatives

Increase the amount of natural infrastructure on the urban landscape.

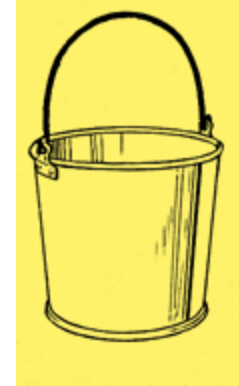
- Urban tree planting;
- Green roofs;
- Restoring wetlands, rivers and ponds where they were lost due to development



Grey Initiatives

Retrofit buildings/infrastructure to help cool off the streets:

- Reflective/cool roofs
- Permeable/reflective pavement
- Passive cooling
- Backup power



Behavior Programs

Engage with community members to ensure that they are prepared to withstand heat waves:

- Education campaigns
- Distribution of emergency kits
- ‘Check in’ on your neighbour programs



Climate change is real, is happening and will continue to impact Canadians

How are CASF members considering the impacts of extreme weather on business operations? On client needs and product offerings? On the supply chains?

Adaptation and resilience are ever more important – what role can CASF members play in showcasing leadership on this file?

Thank You!



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