



**IBC**  
Insurance Bureau  
of Canada

# The Costs of Climate Change in Canada

Then and Now

May 3, 2023 | Chris Rol , Climate Adaptation & Flood Policy, Insurance Bureau of Canada



# Overview

More and bigger floods, wildfires, hailstorms, windstorms and extreme heat events – all influenced by our changing climate – are costing billions of dollars and putting lives at risk.

## **This presentation provides an overview of :**

- Global and Canadian trends in economic and insured losses
- Insurance protection gaps and how they can be reduced
- Canadian and prairie flood risk



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## Who We Are

National association for Canada's private home, auto, business insurers. IBC members represent a vast majority of the Canadian P&C market.

### Vision and Mandate:



Consumers and governments trust, value and support the private property and casualty insurance industry, and its products and services.



Advocate, from a position of leadership, to governments and regulators, and to consumers, both commercial and personal, for property and casualty insurance that is available and affordable to all Canadians.



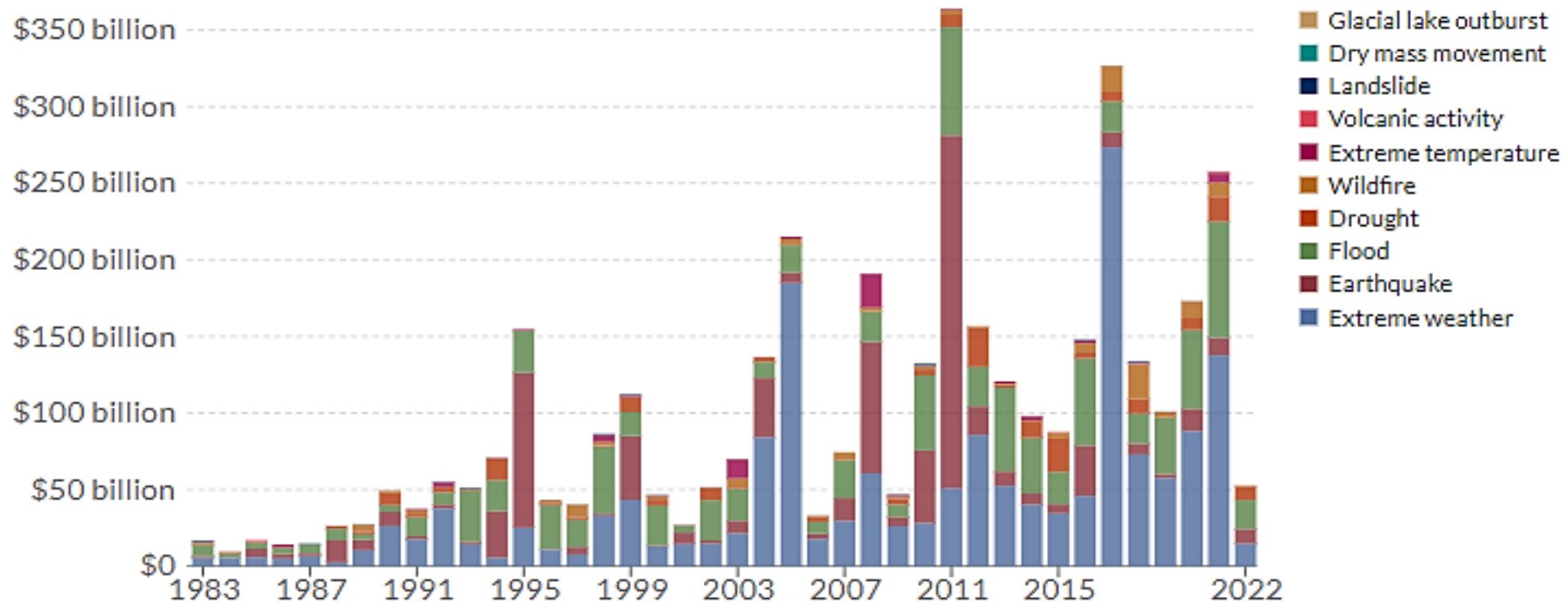
# Costs are Climbing: Globally and in Canada



# Economic Losses

## Economic damage by natural disaster type, 1983 to 2022

Global economic damage from natural disasters, differentiated by disaster category and measured in US\$ per year.

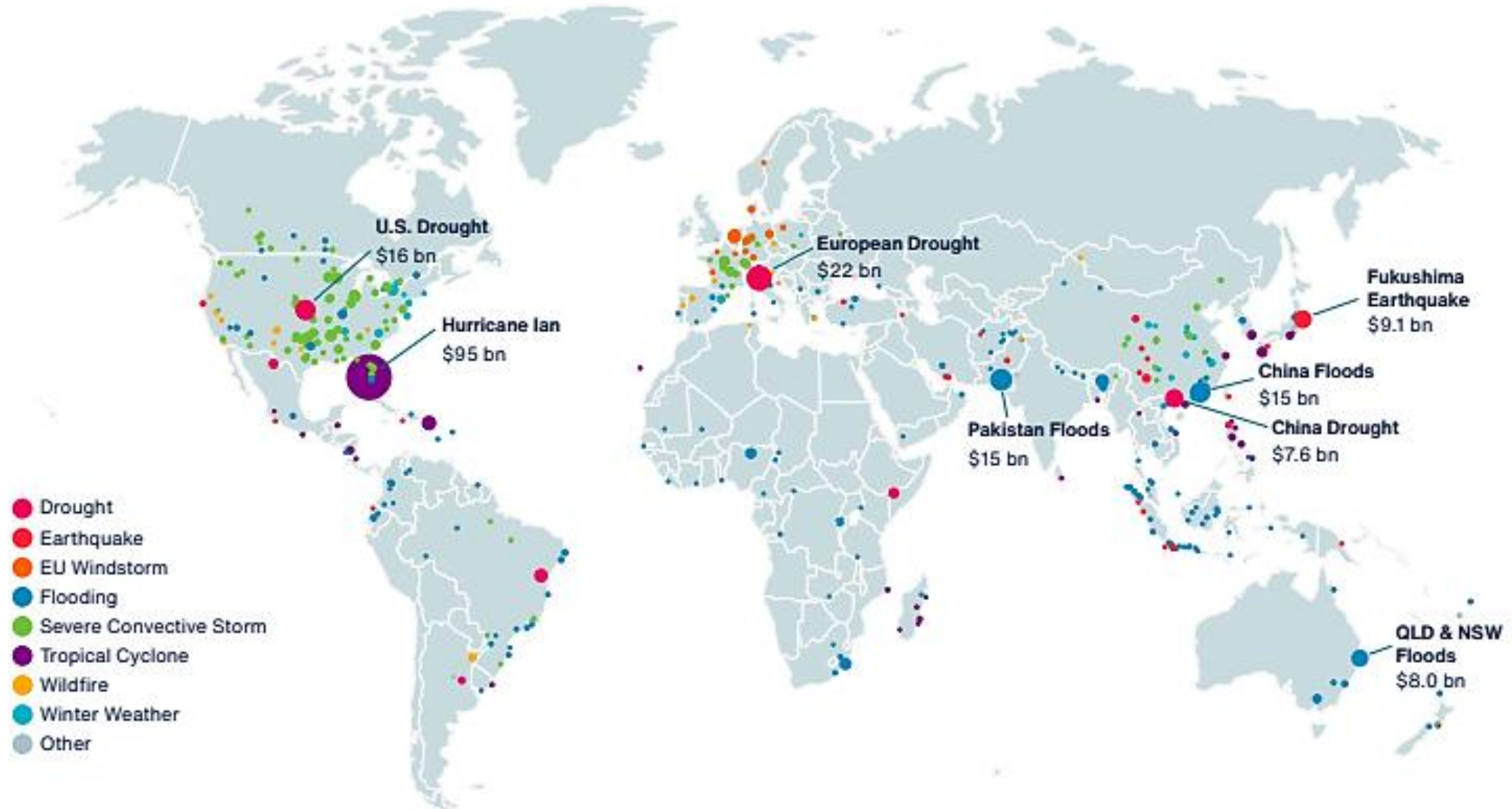


Source: EM-DAT, CRED / Université catholique de Louvain, Brussels (Belgium)

OurWorldInData.org/natural-disasters • CC BY



# 2022 Global Economic Losses - \$313 Billion

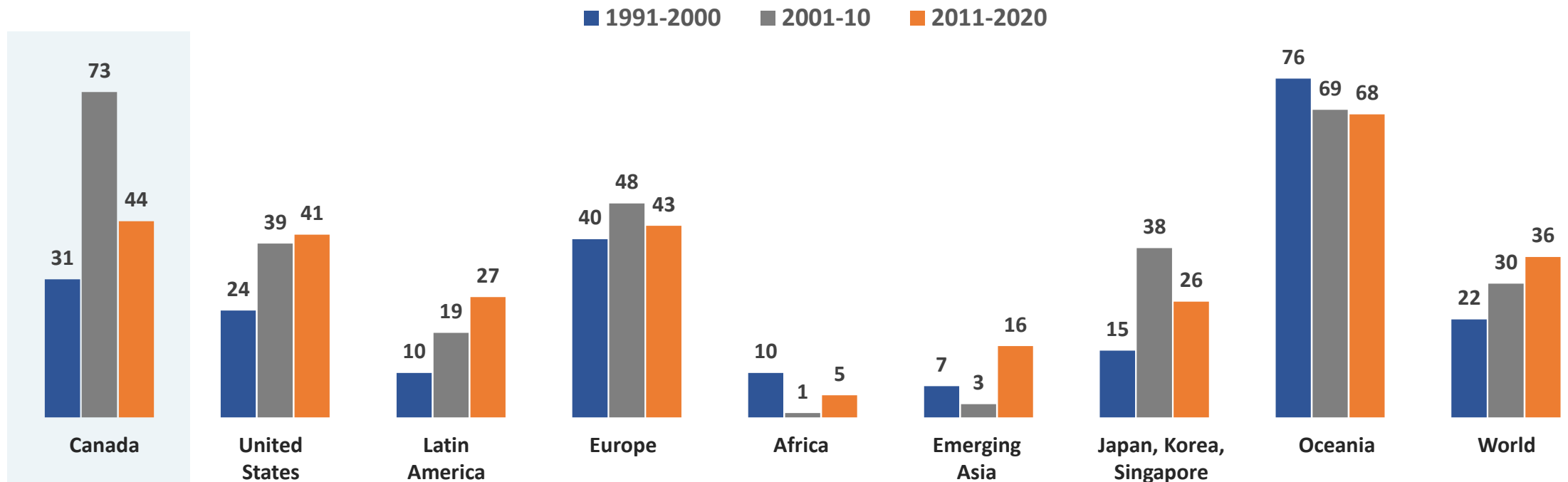


Data: Catastrophe Insight, Aon



# Insurance and the Global Protection Gap

Insured share of Nat Cat losses by region – 1991-2020 (%per decade)



Source: Swiss Re



# Reasons for low level of Nat Cat Insurance

- Limited public awareness of coverage
- Gap between the perception of potential losses and actual economic losses
- Expected post-disaster aid from governments
- Differences in the way natural catastrophe insurance products are offered to homeowners and businesses
- Lower probability of tail-risk events
- Lack of education about risks and likelihood of occurrence





# Canada's Nat Cat Economic Costs

- The average cost per disaster has jumped 1250% since the 1970s. A typical storm or flood that cost roughly \$8 million in the early 1970s now costs over \$110 million.
- Indirect Costs shouldn't be overlooked

## 2013 Southern Alberta Floods

The 2013 Southern Alberta floods caused as much as \$6 billion dollars

## Manitoba Flooding

**1826** – Water level 764 ft above sea level  
(7 ft higher than 1950)

**1950** – \$1 billion in damage (2019\$)

**1997** – flooding in 24 communities - \$500 million damage,  
7000 soldiers sandbagging

**2009** – only \$7.5 million in Wpg - \$70 million outside

**2011** – 4000 people evacuated from First Nations  
communities– some never to return – nearly 100  
displaced people from Lake St. Martin died due to  
stress & lifestyle changes after being displaced



# Canada's Nat Cat Economic Costs

- 2016 Fort McMurray Wildfire
- May 3 is the anniversary of the Fort McMurray Fire evacuation

The combined property, infrastructure, business interruption, and other indirect economic losses of the Fort McMurray wildfire have been estimated at almost **\$11 billion**



# Canada: Insured Catastrophic Losses in 2022

**Insured Damage  
Estimate (YTD):  
\$3.1 billion**

## BC

Winter storm  
and king tide  
**\$80 million** (Dec)

## AB, SK

Severe storms  
**\$35 million** (April)  
**\$45 million** (July)

Hailstorm  
**\$55 million** (Aug)

## Prairies

Severe storms  
**\$50 million** (April)  
**\$40 million** (June)  
**\$65 million** (June)  
**\$80 million** (mid-July)

## Prairies and Central Canada

Severe storms  
**\$100 million** (July)

## ON, QC

Derecho  
**\$1 billion** (May)  
Severe storms  
**\$45 million** (June)

## Eastern Canada, Quebec, Southern Ontario

Winter storm  
**\$140 million** (Feb)

## QC and Eastern Canada

Hurricane Fiona  
**\$800 million** (Sept)

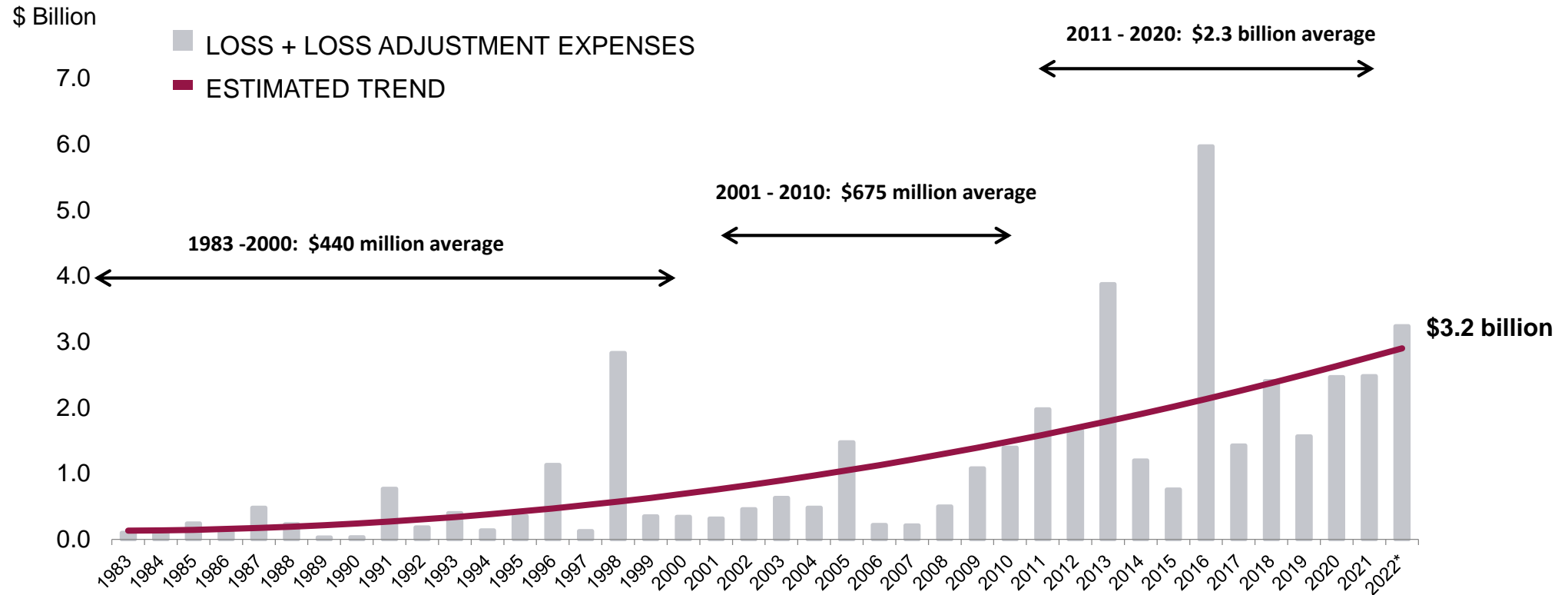
Eastern Canada Bomb Cyclone  
**\$180 million** (Dec)

The amount of insured damage is an estimate provided by CatIQ ([www.catiq.com](http://www.catiq.com)) under licence to Insurance Bureau of Canada.



# What is happening in Canada

## Insured Catastrophic Losses in Canada

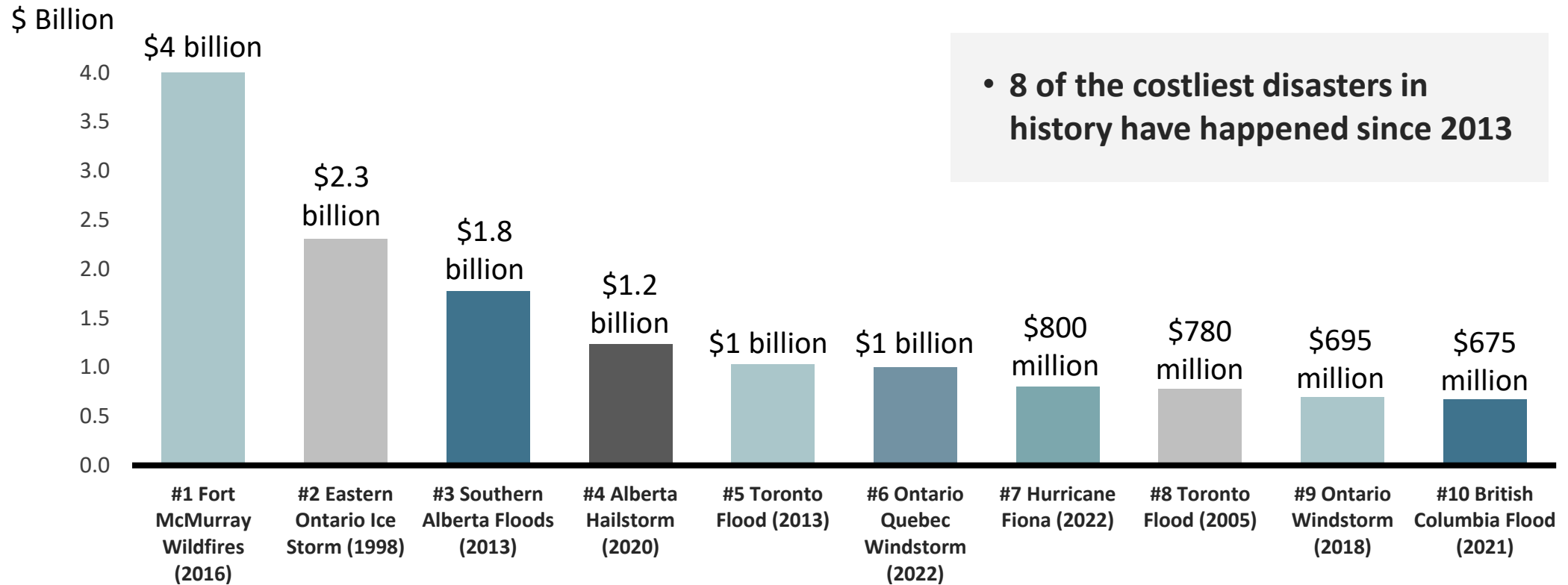


Source: IBC Facts Book, PCS, CatIQ, Swiss Re, Munich Re & Deloitte  
Values in 2022\$ CAN, \*2022 preliminary

\*A catastrophic loss = 1 event costing \$30 (25 prior to March 2022) million or more in insured damages



# Canada: Top 10 Natural Disasters for Insurance Payouts

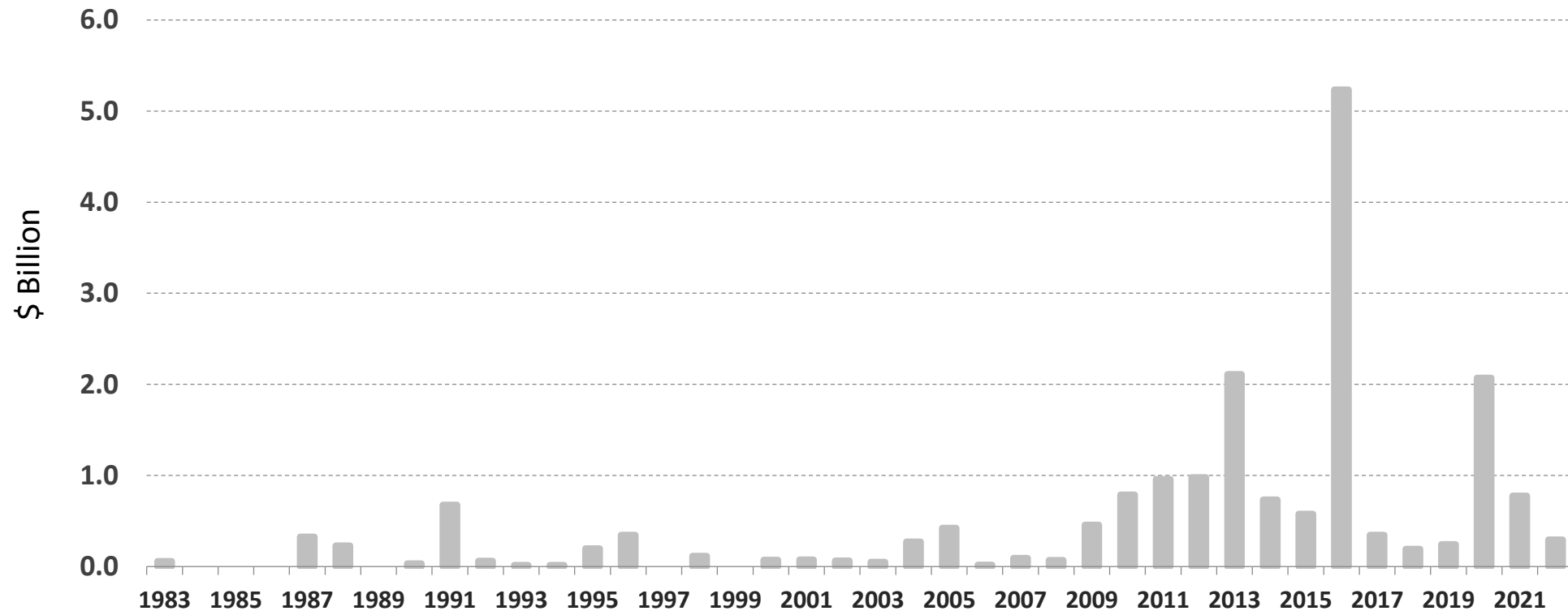


Losses exclude Loss Adjustment Expenses  
Source: IBC 2022 Facts Book, PCS, CatIQ, Swiss Re, Munich Re & Deloitte  
Values in 2021 \$ CAN



# Large Catastrophic Losses - Alberta

Perils: Fire, Hail, Wind, Water, Ice, Snow, Lightning

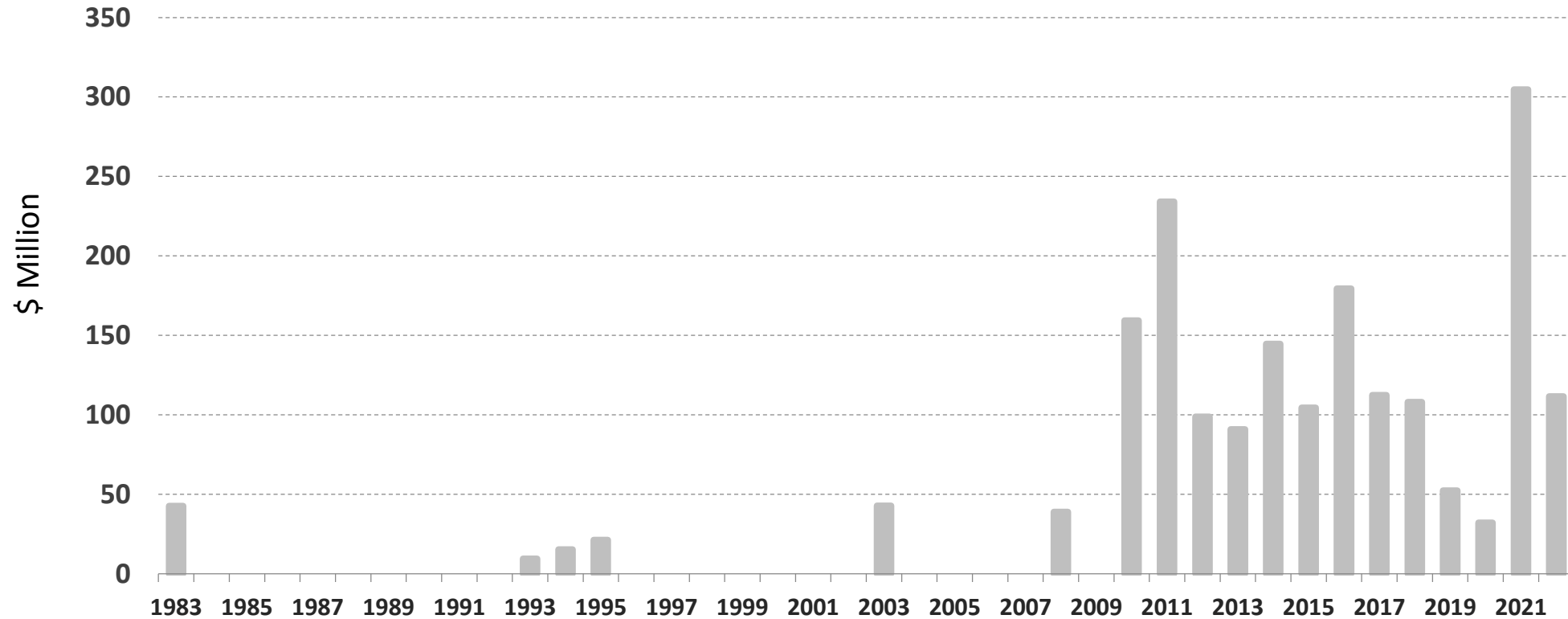


Lines: Personal and Commercial Property, Auto. includes Adjustment Expenses  
Values in 2022 \$CAN, Events where total insured losses greater than \$30 M (25 prior to March 2022)  
Source: IBC Facts Book, CatIQ, PCS, Swiss Re, Munich Re & Deloitte  
\*2022 preliminary



# Large Catastrophic Losses - Saskatchewan

Perils: Fire, Hail, Wind, Water, Ice, Snow, Lightning



Lines: Personal and Commercial Property, Auto. includes Adjustment Expenses

Values in 2022 \$ CAN, Events where total insured losses greater than \$25 M (\$30 as of March 2022)

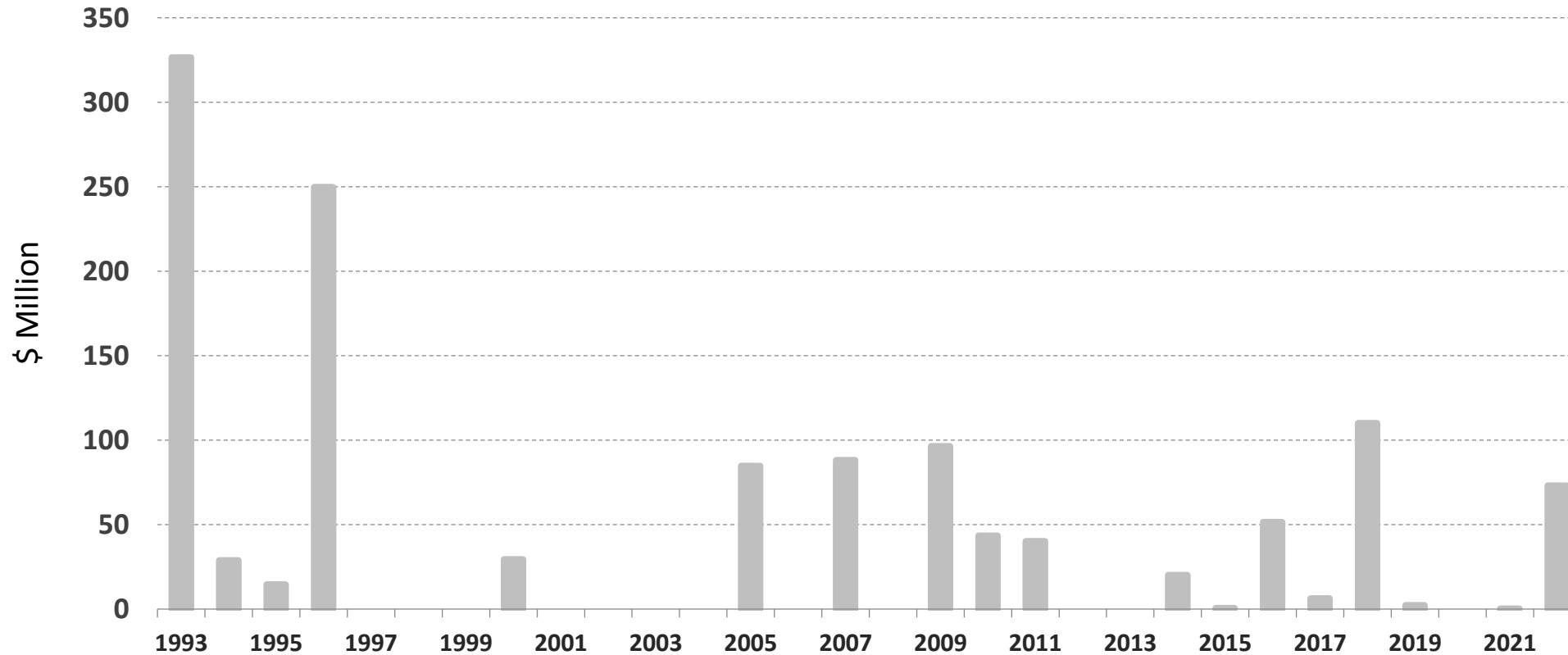
Source: IBC Facts Book, CatIQ, PCS, Swiss Re, Munich Re & Deloitte

\* 2022 preliminary



# Large Catastrophic Losses - Manitoba

Perils: Fire, Hail, Wind, Water, Ice, Snow, Lightning



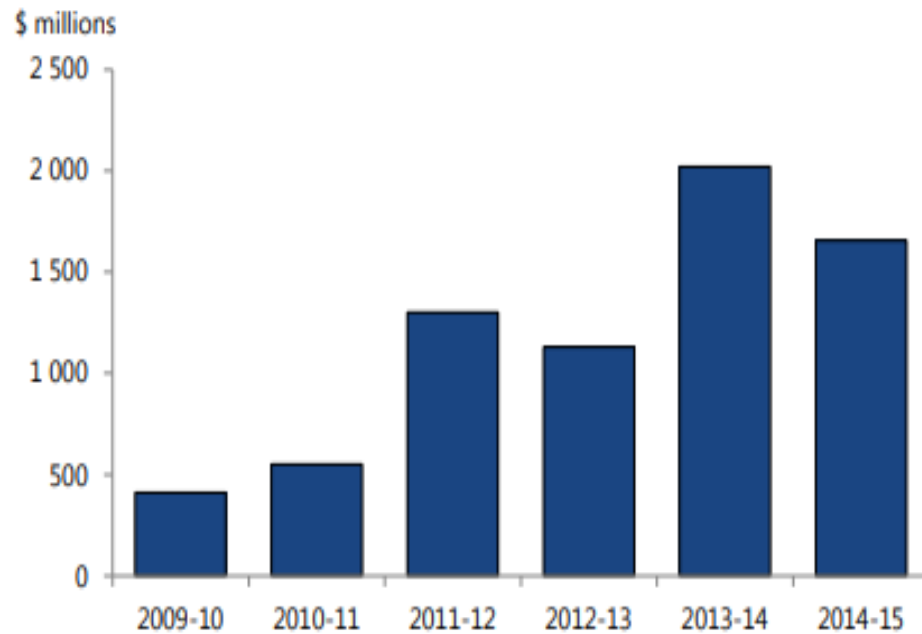
Lines: Personal and Commercial Property, Auto. includes Adjustment Expenses  
Values in 2022 \$ CAN, Events where total insured losses greater than \$25 M (\$30 as of March 2022)  
\* 2022 preliminary  
Source: IBC Facts Book, CatIQ, PCS, Swiss Re, Munich Re & Deloitte





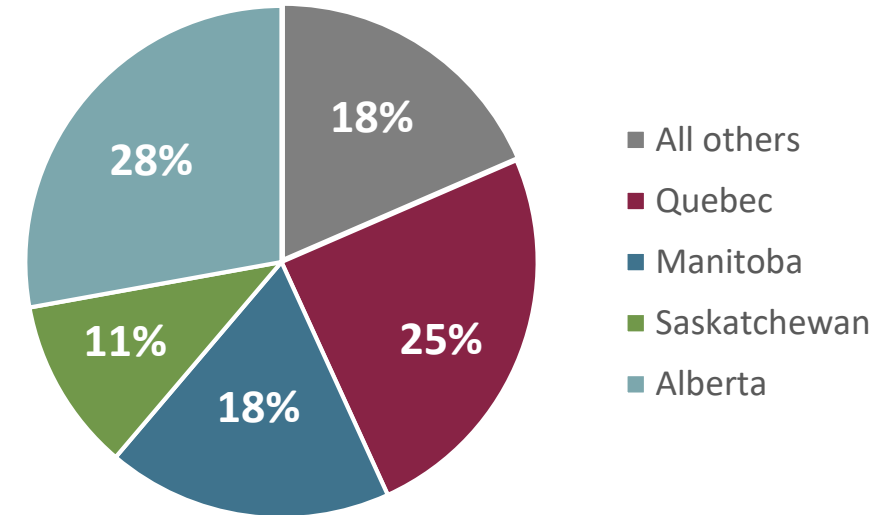
# DFAA

## Disaster Financial Assistance Arrangements Liabilities



Source: Public Safety.

## DFAA Payments by Province/territory 1970-2014



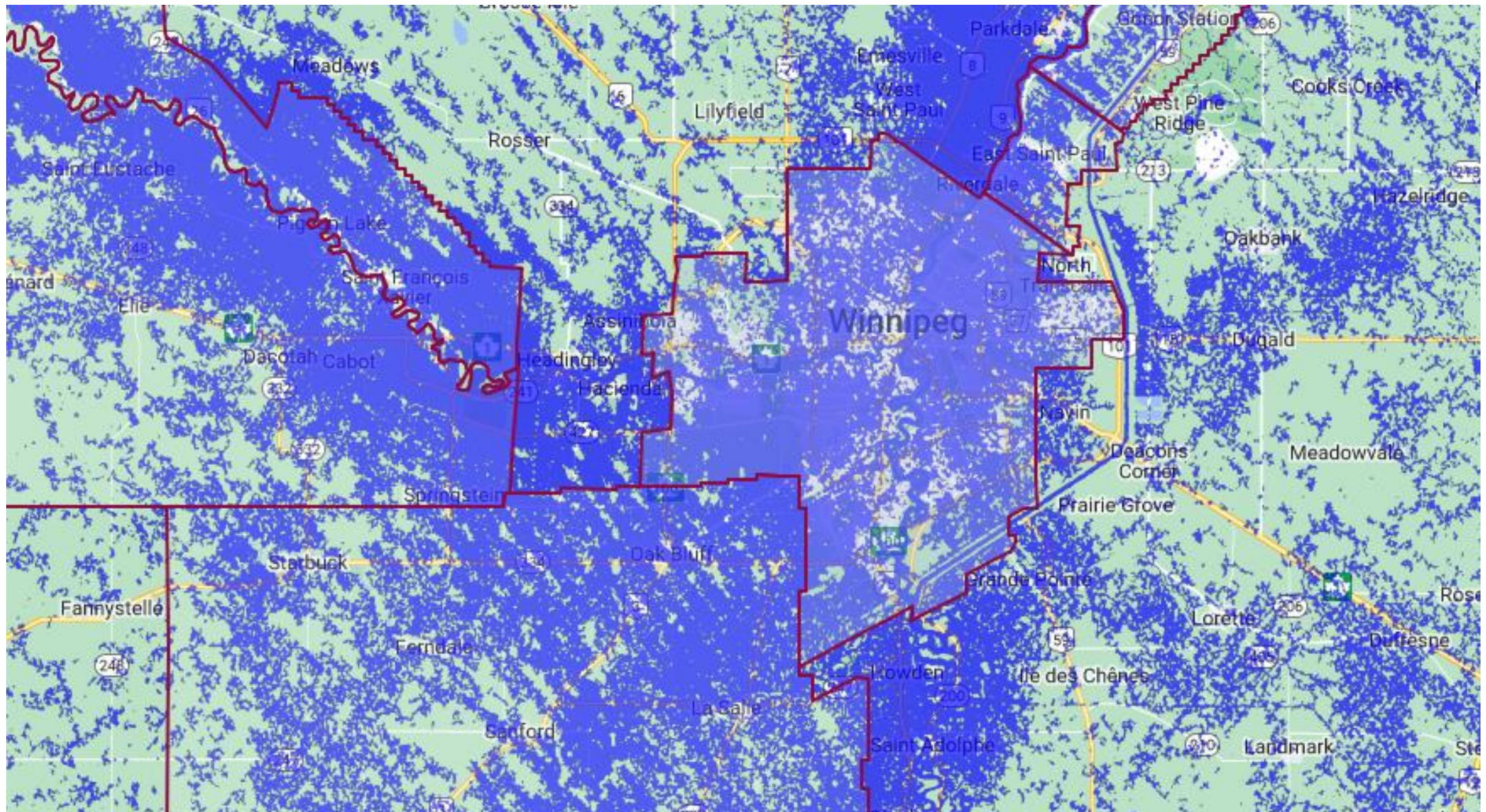
Sources: PBO and DFAA.  
Note: \*Nunavut isn't included



# Flooding



# Flood Risk - Winnipeg





# Winnipeg – By the Numbers

## Flood risk in Winnipeg, MB (riverine and urban flooding)

Homes at risk of flooding<sup>1</sup>

160,000 (92% ▲) out of 170,000 homes

Insurable value at risk of flooding<sup>2</sup>

\$35 billion

\$220,000 to rebuild an at-risk home

Average annual residential losses due to flooding<sup>3</sup>

\$27 million

\$200 - 400 ▼ annual flood losses for a typical at-risk home

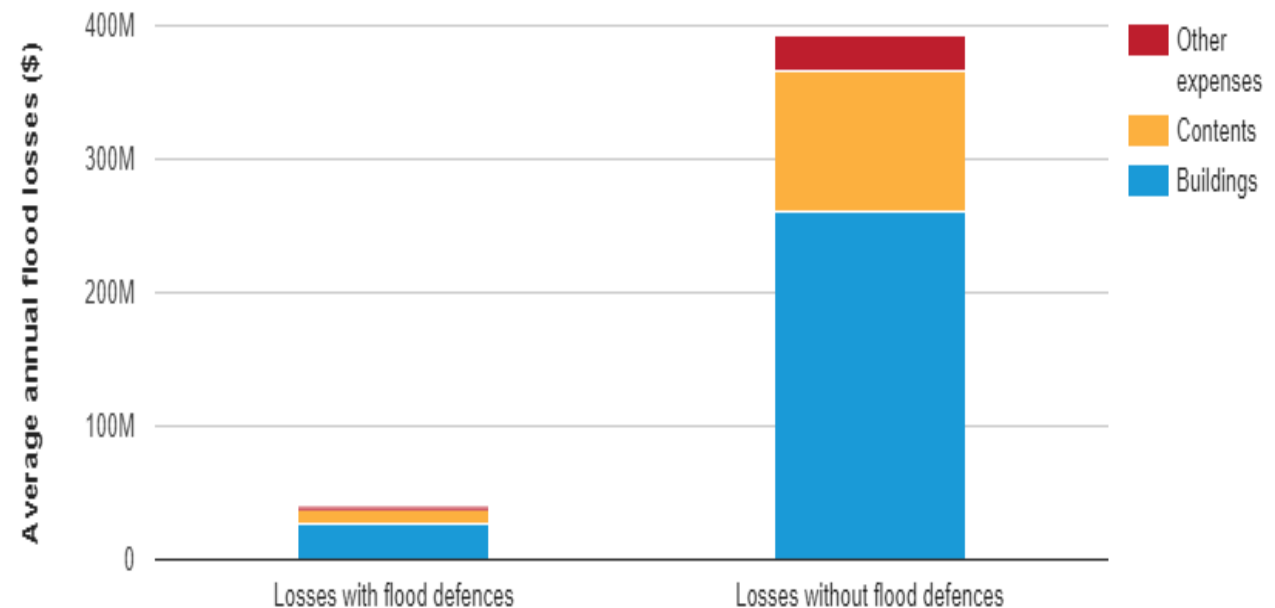
The impact of flood defences

Flood defences contribute to reducing total annual flood losses by 90%.

<sup>1</sup> Based on 2015 residential housing stock data, excluding apartment buildings and condos. All numbers are rounded and may not add up to totals.

<sup>2</sup> Based on dwelling replacement cost, not contents.

<sup>3</sup> Annual average losses to dwellings. Contents and additional living expenses are not accounted for. Flood defences are factored into calculation where data was available.





# Provinces at Risk

Table 1: Distribution of residential properties and AAL across provinces and territories

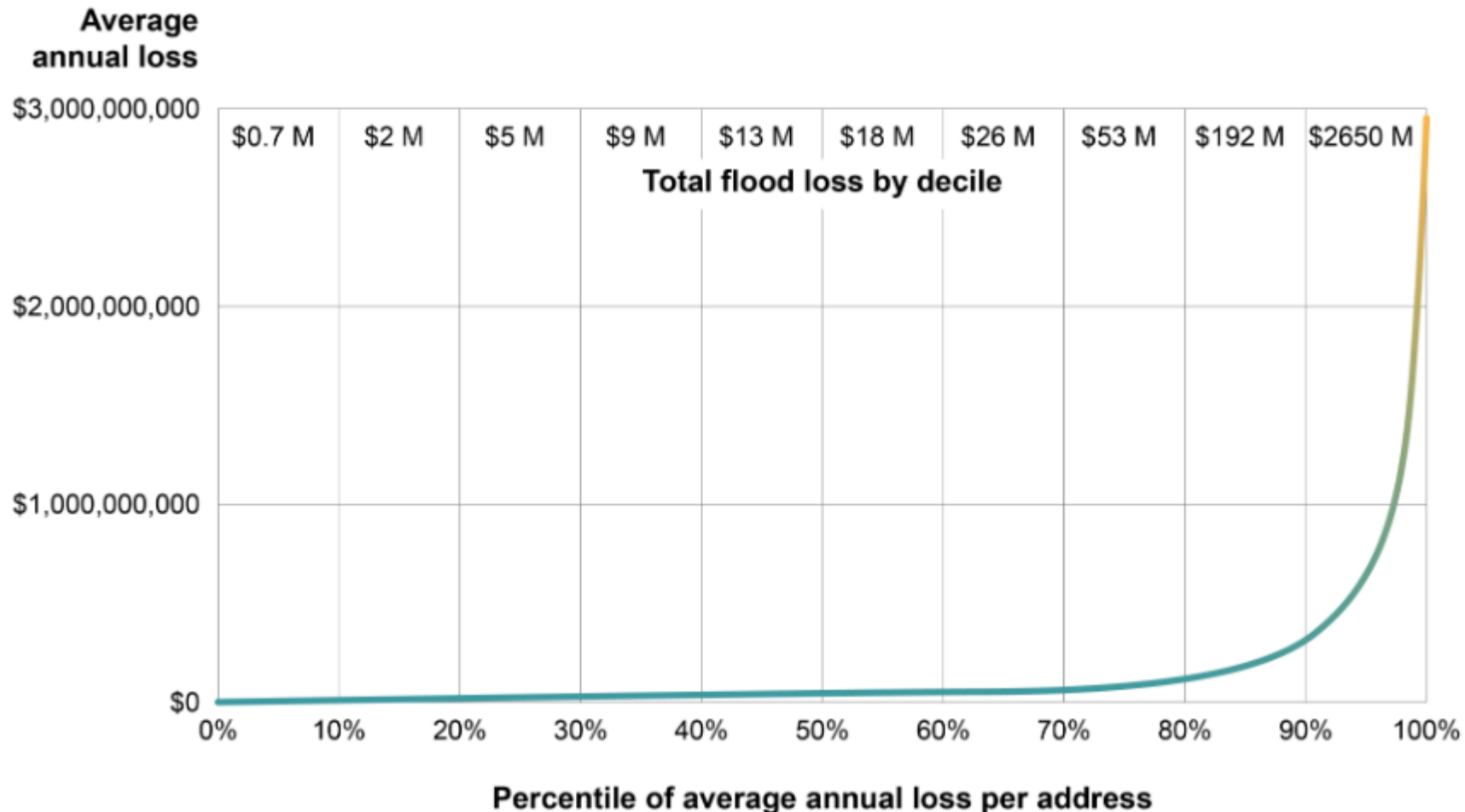
Province / Territory	Overall			Top 10% of Risk AAL > \$262		Top 1% of Risk AAL > \$4,150	
	Total AAL	Residential Properties	AAL Per Property	Residential Properties	Percent of Properties	Residential Properties	Percent of Properties
Alberta	\$245.5 M	1,855.0 K	\$132	145,118	7.82	11,608	0.63
British Columbia	\$689.4 M	1,971.0 K	\$350	278,617	14.14	48,399	2.46
Manitoba	\$105.3 M	457.8 K	\$230	68,079	14.87	2,619	0.57
New Brunswick	\$103.7 M	344.6 K	\$301	48,951	14.21	6,867	1.99
Newfoundland and Labrador	\$11.9 M	167.3 K	\$71	8,478	5.07	256	0.15
Nova Scotia	\$68.6 M	485.9 K	\$141	52,470	10.8	2,151	0.44
Northwest Territories	\$0.6 M	9.4 K	\$65	502	5.35	24	0.26
Nunavut	\$0.2 M	3.6 K	\$44	50	1.39	13	0.36
Ontario	\$805.1 M	5,836.0 K	\$138	407,754	6.99	40,973	0.7
Prince Edward Island	\$9.8 M	74.0 K	\$133	7,483	10.11	191	0.26
Quebec	\$861.3 M	3,766.0 K	\$229	489,605	13	38,432	1.02
Saskatchewan	\$54.4 M	426.4 K	\$128	30,913	7.25	1,519	0.36
Yukon	\$13.0 M	14.1 K	\$925	3,107	22.07	1,061	7.54
<b>Total AAL</b>	<b>\$2.97 B</b>						

Source: Adapting to Rising Flood Risk  
An Analysis of Insurance Solutions for Canada



# What is driving flood losses?

Total average annual loss across Canada ranked by percentile



Source: Adapting to Rising Flood Risk  
An Analysis of Insurance Solutions for Canada  
Figure 6, page 46.



# Canada's First National Flood Insurance Program

In the 2023 federal budget, the government announced the intention to stand up Canada's first National Flood Insurance Program to protect Canadians at highest risk of flooding.

**\$31.7M**

**To create Flood Insurance program**

**\$15.2M**

**For creation of a publicly accessible online portal**

**\$51.2M**

**To identify high-risk flood areas and implement a modernized Disaster Financial Assistance Arrangements**

- This follows more than 5 years of advocacy by IBC and the P&C insurance industry.
- Canada now joins the UK, US and most other G7 countries in announcing a government-backed insurance program in collaboration with Canada's property and casualty (P&C) insurance industry.
- The new program will consider damage from storm surge, riverfront flooding and urban overland flooding.



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