



DID YOU KNOW?

Climate change increases the likelihood of extreme weather events:

- Increased greenhouse gases in our atmosphere result in increased temperatures. Over the period of 1948–2016, the annual mean temperature in Ontario increased by 1.3°C. This is projected to increase by an additional 1.5°C to 2.3°C by 2050. ¹
- Warmer temperatures allow more moisture to be available in the atmosphere for rain which can lead to larger and more intense storms. In Thunder Bay, daily extreme precipitation is projected to increase. ² This means that with a warming climate, there is potential for larger amounts of rain or snow to accumulate over a day which can contribute to more local flooding and snow storms.



Extreme weather events are costly:

- Here in Thunder Bay we are no stranger to the challenges that come with a record breaking rainfall. On May 28, 2012, heavy rainfall and subsequent flooding caused the City of Thunder Bay to declare a state of emergency. In some areas, nearly 100mm of rainfall was recorded in less than 5 hours! The flooding led to widespread damages to roads, homes, and utilities. The national Canadian Disaster Database estimates that the total cost of this event was over \$241 million. ³
- Thunder Bay is not alone; across Canada there is a rising trend in insurance payouts as a result of climate-related natural disasters. In Canada, insurance payouts from natural disasters have exceeded \$1 billion per year for nine of the last ten years. For the 26 years prior to 2009, insurable payouts averaged \$400 million per year. It's important to remember that the actual cost of natural disasters is likely much higher than what is paid out by insurance. On the low end, estimates indicate that climate change may cost Canadians between \$21 and \$43 billion per year by 2050. ⁴



BY 2050, CLIMATE CHANGE
MAY COST CANADIANS UP TO

**\$43 BILLION
PER YEAR**





WHAT CAN WE DO?

Adapt to future climate risks:

- By employing climate change adaptation strategies, we can help reduce the future financial risks associated with our changing climate. Adaptation is the process of adjusting human systems (i.e., roads, homes, etc.) to actual or expected future climate, thereby making them more resilient to things like extreme weather.
- A recent study examining the cost of adaptation across municipalities in Canada found that, in Ontario, an average annual investment in municipal infrastructure and local adaptation measures of \$1.4 billion is needed to adapt to climate change.⁵



TAKE ACTION NOW!

- *Communicate about climate change*
- *Encourage decision makers to take action*
- *Get involved with community initiatives*

Adaptation in action:

- The Government of Canada has committed to investing \$13.2 million through the Disaster Mitigation and Adaptation Fund to help fund the Thunder Bay Flood Mitigation Project, a 10-year initiative that includes significant upgrades to the City's stormwater management infrastructure. In total the project will cost approximately \$33.1 million and is expected to save \$6 for every dollar invested in long-term savings on recovery and replacement costs



Support adaptation in Thunder Bay:

- Explore the City of Thunder Bay's Climate Adaptation Strategy
- Join the EarthCare Climate Adaptation Working Group
- Install a rain garden with help from EcoSuperior

REFERENCES:

¹ Bush, E. and Lemmen, D.S., editors (2019): *Canada's Changing Climate Report*; Government of Canada, Ottawa, ON. 444p.

² Prairie Climate Centre (2019). *Climate Atlas of Canada, version 2 (July 10, 2019)*.

³ Public Safety Canada. *Canadian Disaster Database*.

⁴ Insurance Bureau of Canada and the Federation of Canadian Municipalities. (2020). *Investing in Canada's Future: The Cost of Climate Adaptation at the Local Level*.

⁵ *ibid*

⁶ Office of the Auditor General. (2016). *Report 2 – Mitigating the Impacts of Severe Weather*.

THIS RESOURCE IS BROUGHT TO YOU BY:

- CITIZENS UNITED FOR A SUSTAINABLE PLANET
- EARTHCARE – CITY OF THUNDER BAY
- ECOSUPERIOR ENVIRONMENTAL PROGRAMS
- ENVIRONMENT NORTH
- FRIDAYS FOR FUTURE – THUNDER BAY CHAPTER
- LAKEHEAD REGION CONSERVATION AUTHORITY
- LAKEHEAD UNIVERSITY – SOCIAL SCIENCES AND HUMANITIES
- RESEARCH COUNCIL
- MATAWA FIRST NATION MANAGEMENT – FOUR RIVERS ENVIRONMENTAL GROUP
- ONTARIO NATURE
- THUNDER BAY DISTRICT HEALTH UNIT – NORTHERN ONTARIO HEALTH AND CLIMATE CHANGE COLLABORATIVE

FOR SOURCES AND MORE INFORMATION, VISIT:
WWW.CLIMATECHANGEBAY.COM