

# Climate Change

County of Wellington Climate  
Adaptation Plan

March 30<sup>th</sup> , 2026



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# Today's Objectives

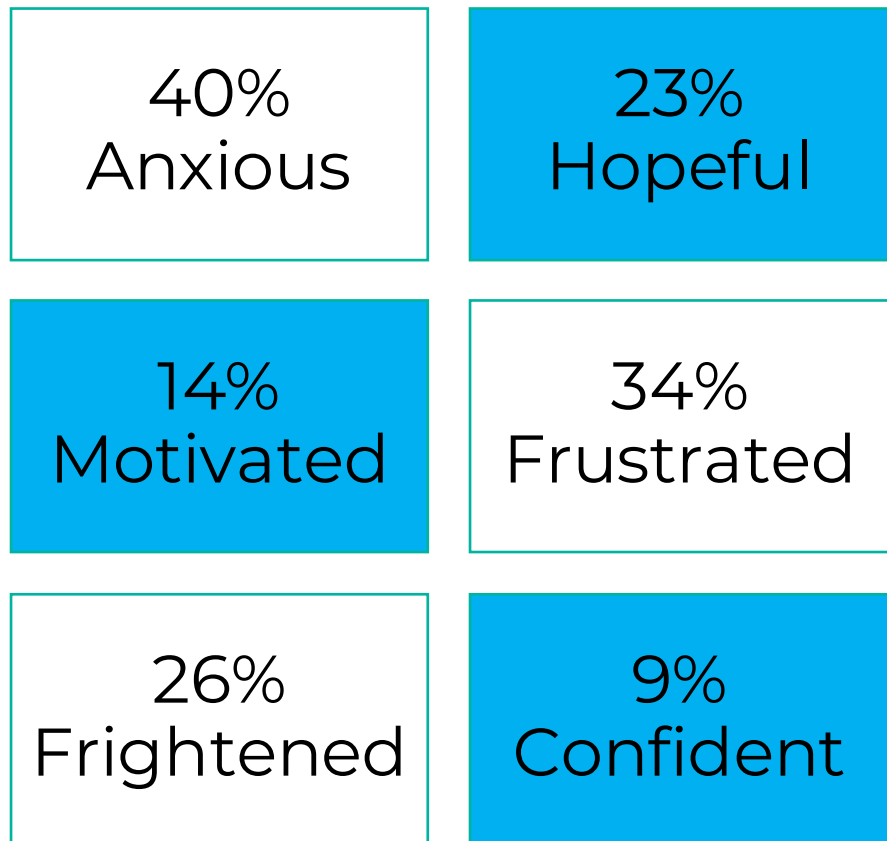
- **Describe** the projected climate hazards and trends for Wellington County
- **Facilitate** discussions to gather lived experiences and local knowledge related to climate hazards.
- **Identify** how projected hazards may affect key community assets, systems and residents.



# How do you feel about Climate Change?



# This is how Canadian's Feel about Climate Change!



\*Source: Learning for a Sustainable Future (2025). From Awareness to Action

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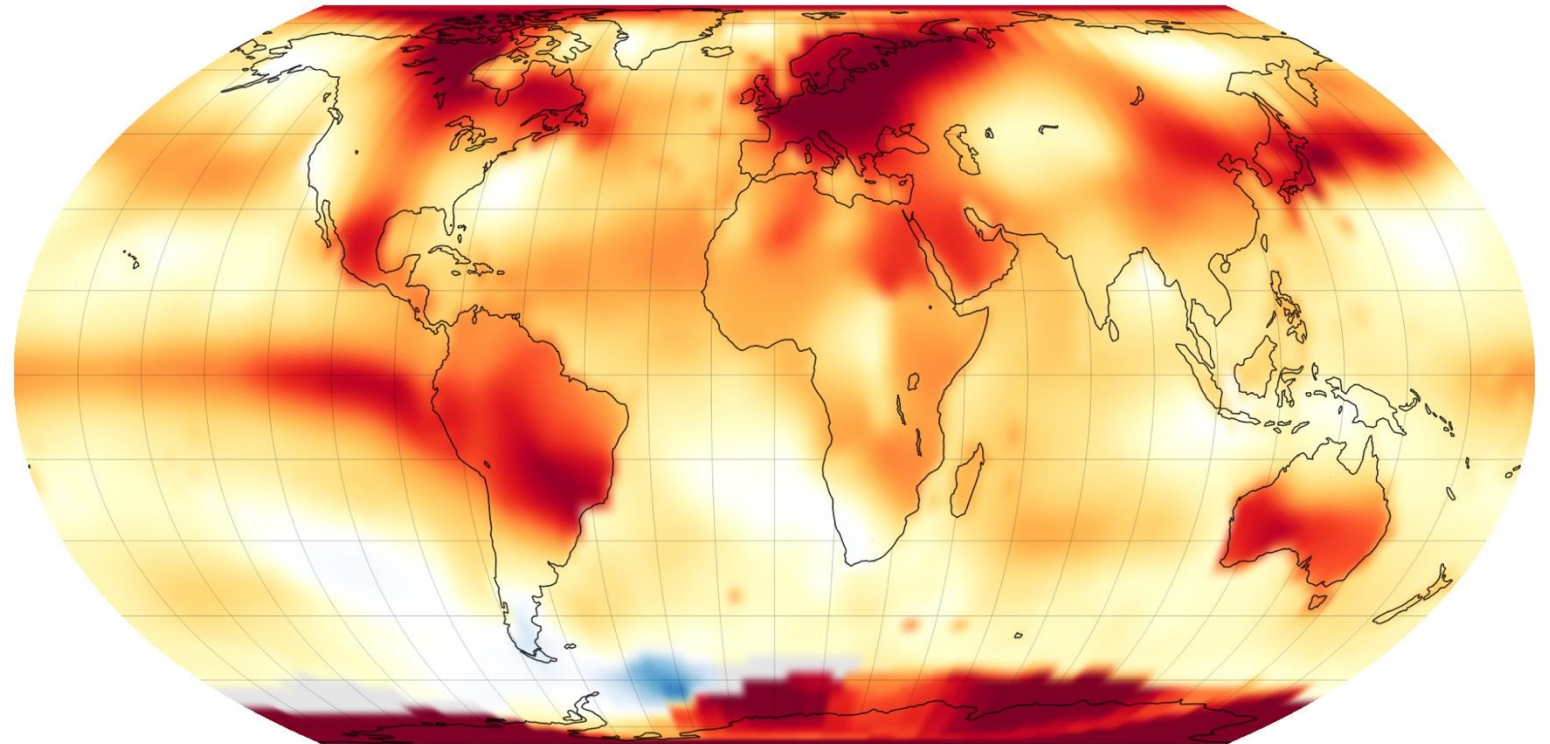
## Climate Change Context



# What is climate change?

Climate Change refers to a **long-term shift in weather conditions**. It is measured by **changes in climate indicators** like temperatures, wind, rain.

**Unexpected heat of 2023-2024**



# What causes climate change?

Over the past years, human activities have changed the balance of Earth's climate



Burning Fossil Fuels



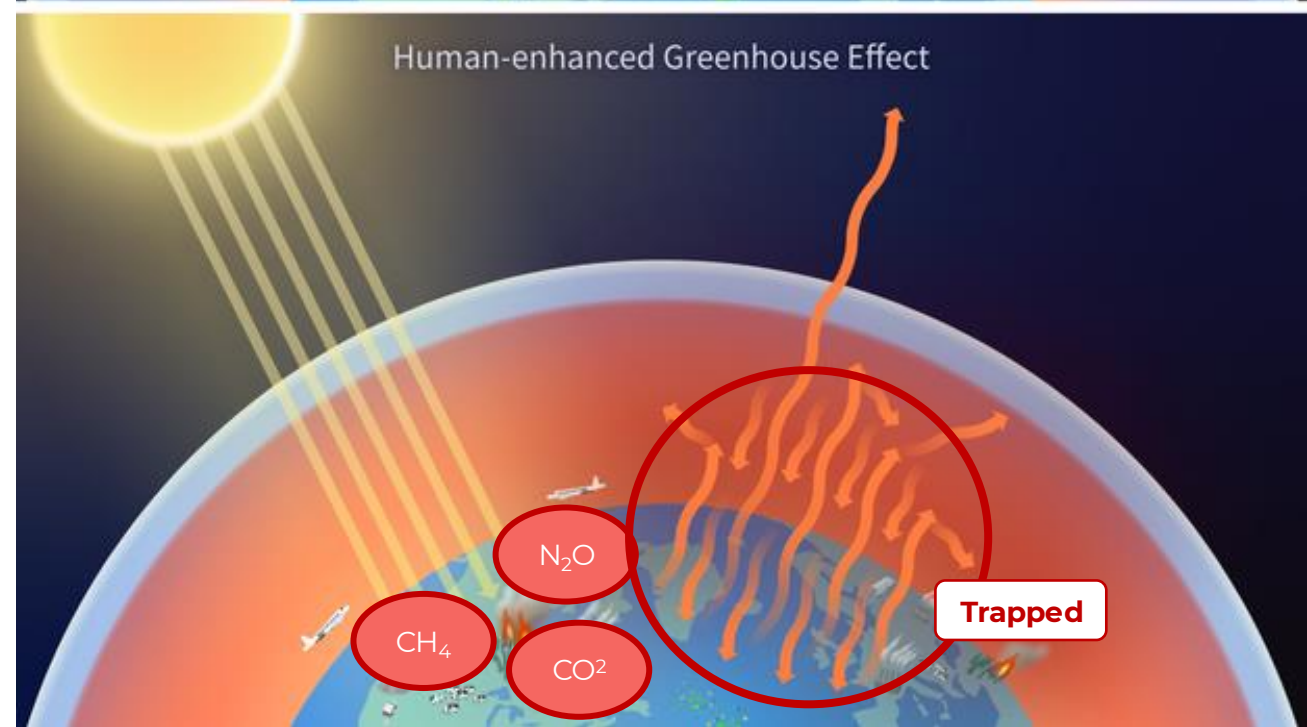
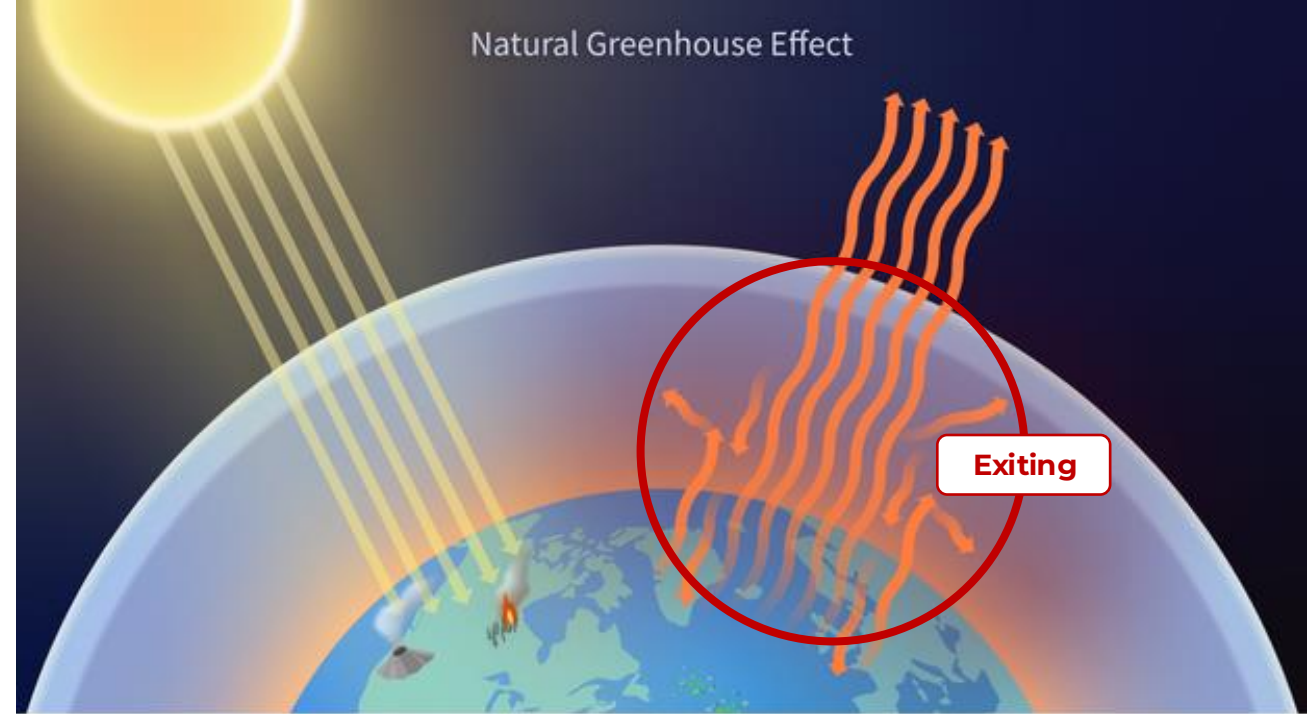
Cutting down forests



Industrial and Agricultural Activities

These activities **increase greenhouse gases in the atmosphere.**

Greenhouse gasses act like a blanket around the earth, trapping heat and causing the planet to warm.



# Climate Change Today

Warmer temperatures change climate patterns

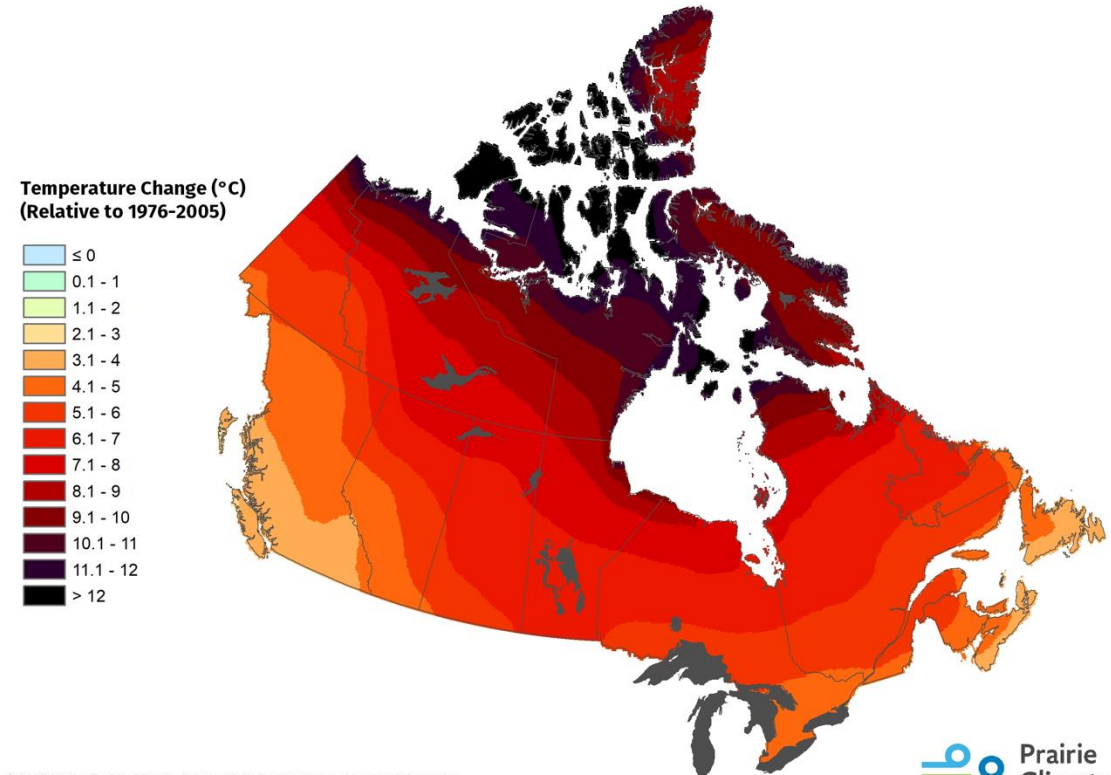
- Heavier rainfalls and storms
- More common hot days and heatwaves
- Longer dry periods and droughts
- Unpredictable storms

**These changes increase risks for communities.**

Climate change is already happening;  
communities need to adapt.

## 2051-2080 Projected Change in Mean Temperature: December

*Under the RCP8.5 scenario, relative to a baseline of 1976-2005*



© 2017 by the Prairie Climate Centre. Visit [climateatlas.ca](http://climateatlas.ca) for more information.  
Map Data: Ensemble of 12 CMIP5 models (BCSD Statistically Downscaled Climate Scenarios)  
provided by the Pacific Climate Impacts Consortium, University of Victoria ([pacificclimate.org](http://pacificclimate.org)).

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# Climate Change and Wellington County

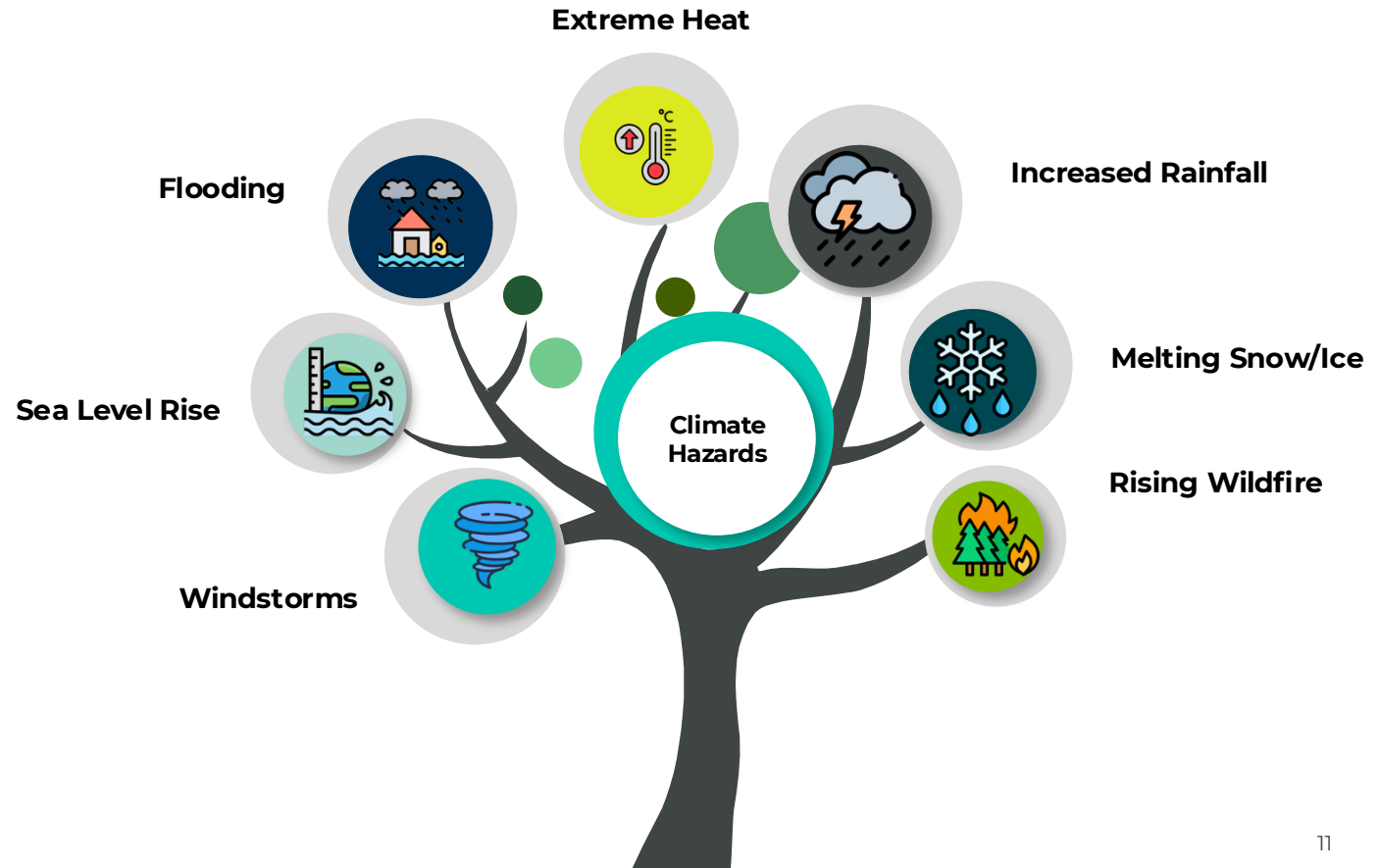


# Climate Change Hazards

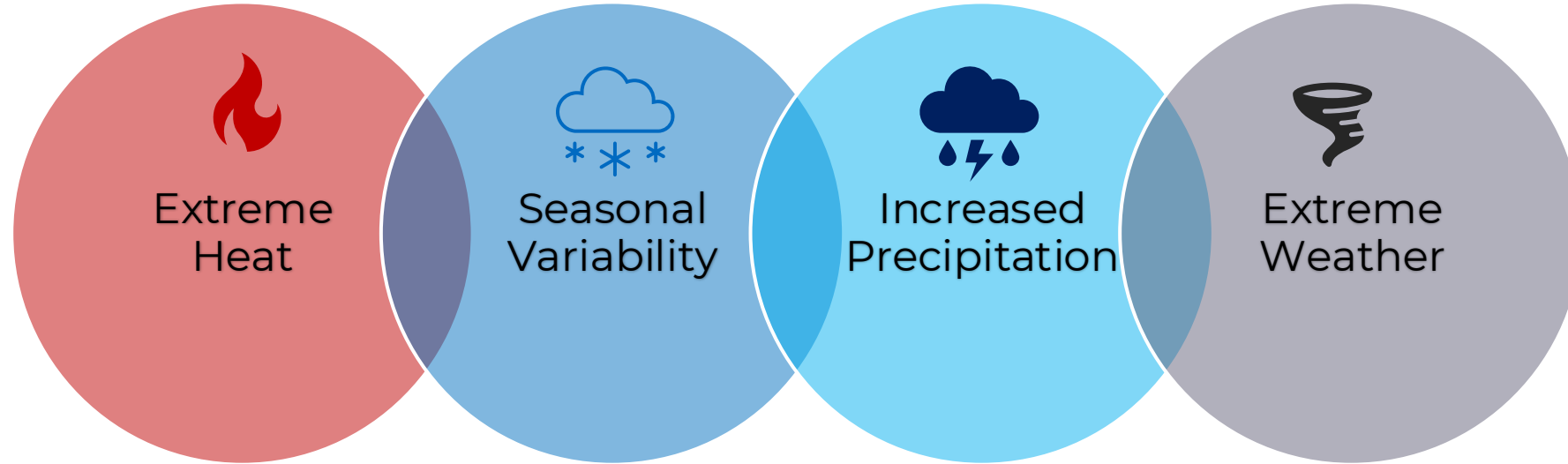
Climate change is already affecting communities through shifts in temperature, precipitation, and extreme weather events. These changes increase risks to infrastructure, ecosystems, public health, and local economies.

## Why does it matter?

The **magnitude, frequency and rate** at which these changes and events are occurring vary from community to community



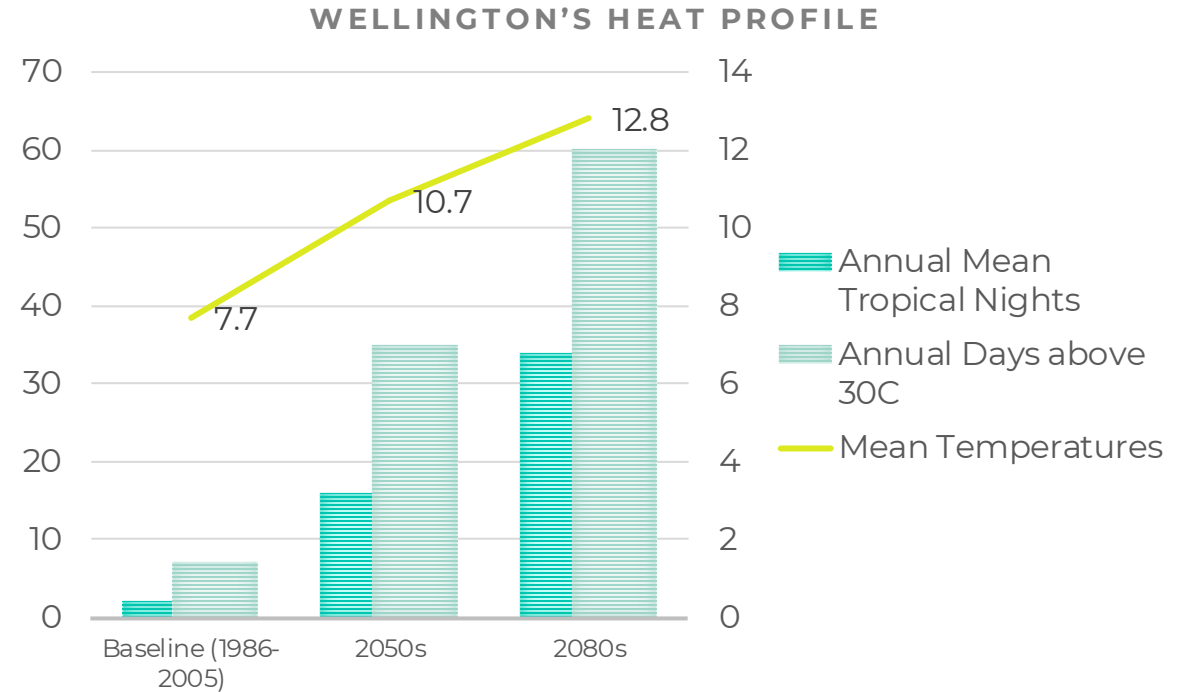
# Key Climate Hazards for Wellington County



\* Data sourced from Climate Change and Health Vulnerability Assessment, WDG Public Health (2022).

# Extreme Heat

- Both average temperature and frequency of heat warning events are expected to rise.
- The number of very hot days exceeding 30°C is expected to increase from a range of 7 days to 35 days by 2050 and 70 days by 2080.
- Very warm nights are also expected to increase from 2 days to 34 days by 2080.

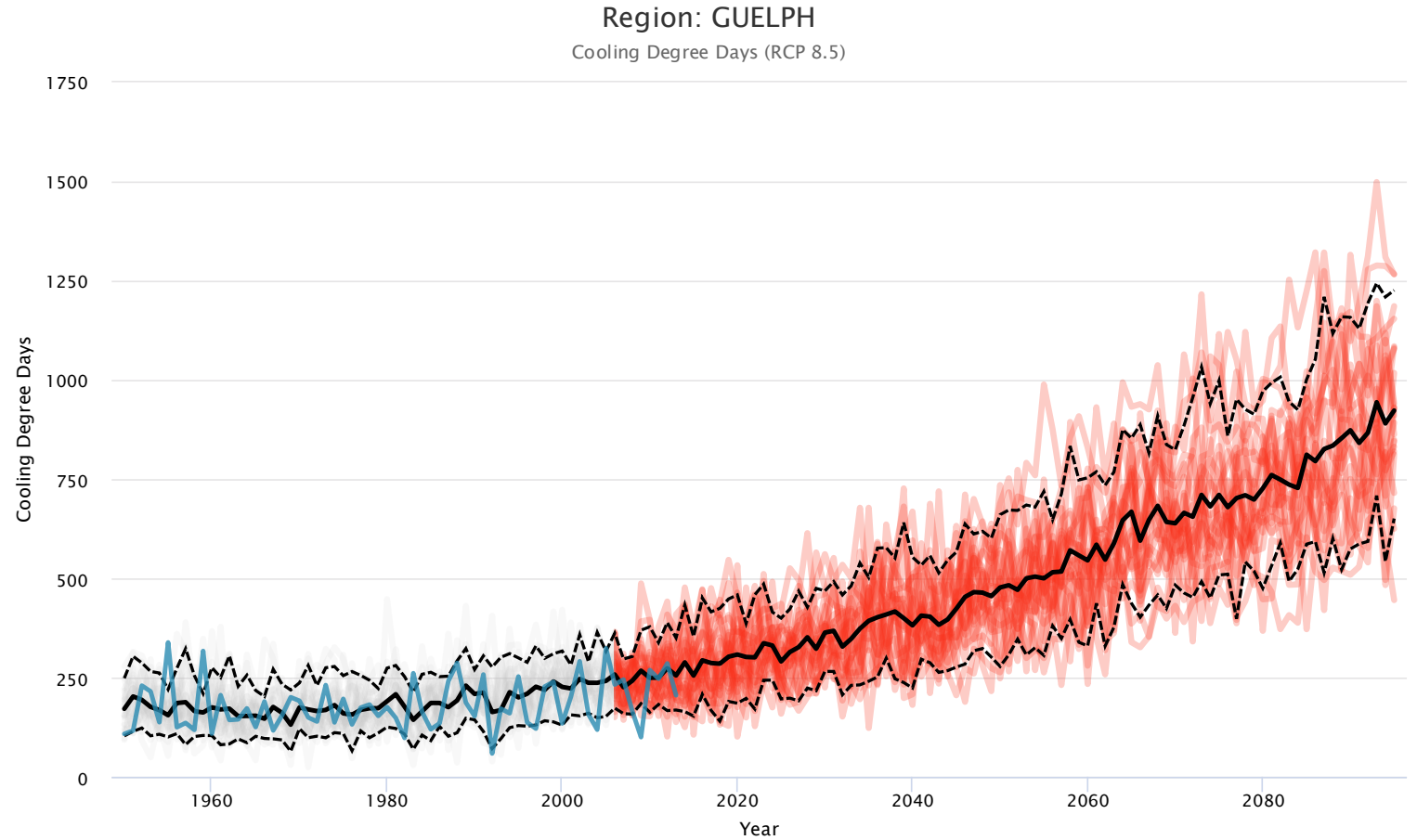


	Baseline (1989-2005)	2050		2080	
	Value	Value	Change	Value	Change
Frequency of heat warning events	0.03	1.32	1.29 ↑	3.55	2.23 ↑
Days Above 32°C	1	11	10 ↑	35	24 ↑

\* Data derived from Climate Change and Health Vulnerability Assessment, WDG Public Health (2022).

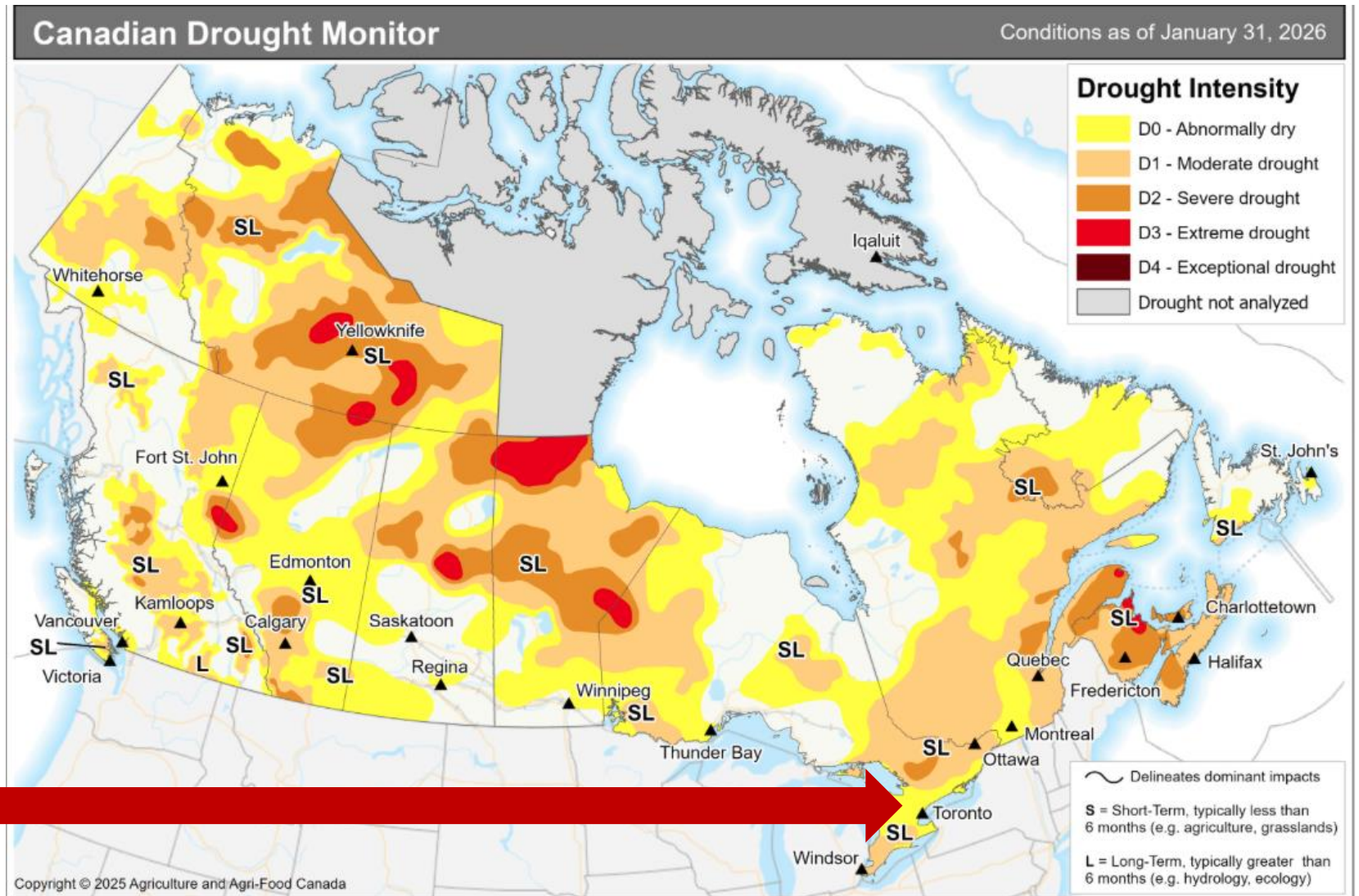
# Extreme Heat

- Hot weather is expected to increase in coming decades
- People may need air conditioning or cooling more often
- Summers are expected to become much hotter



\* Data derived from Climate Change and Health Vulnerability Assessment, WDG Public Health (2022).

# Extreme Heat: Droughts



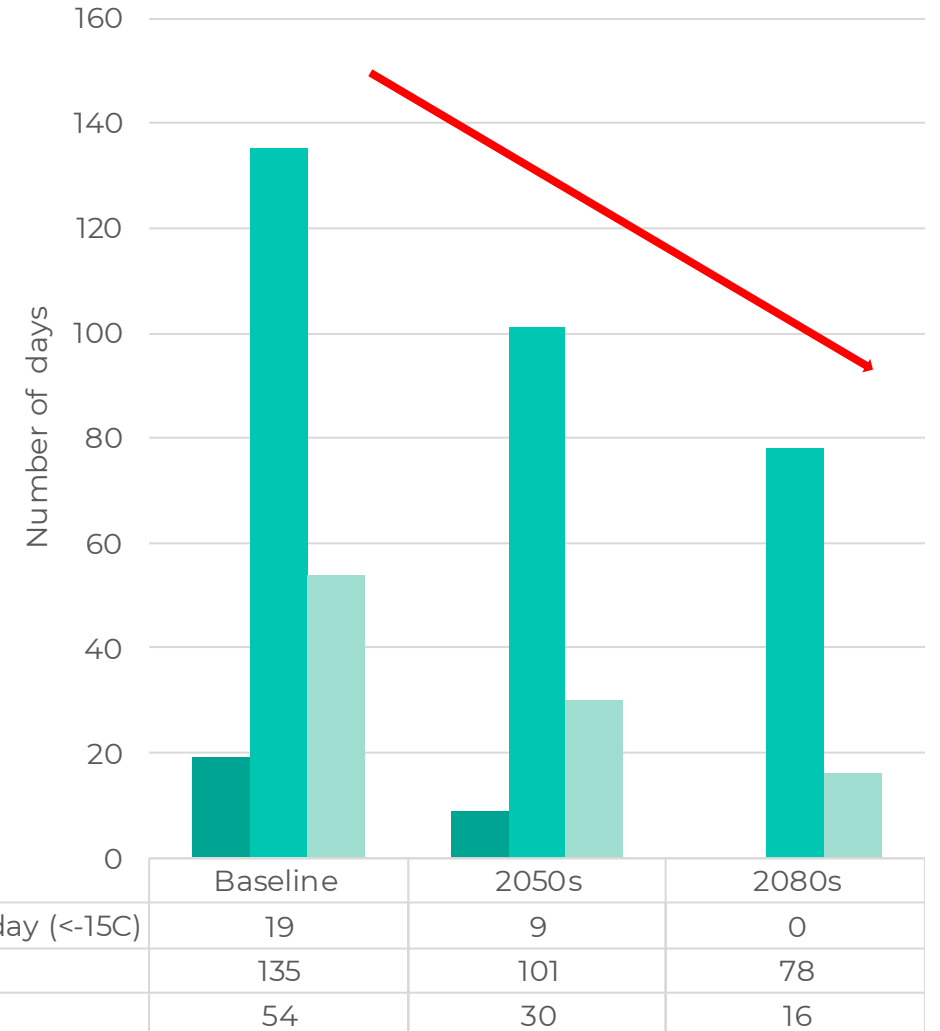
A shift from short-term to long-term drought risk is expected

Agriculture will be sensitive to the extended dry spells

\* Data derived from Climate Change and Health Vulnerability Assessment, WDG Public Health (2022).

# Seasonal Variability

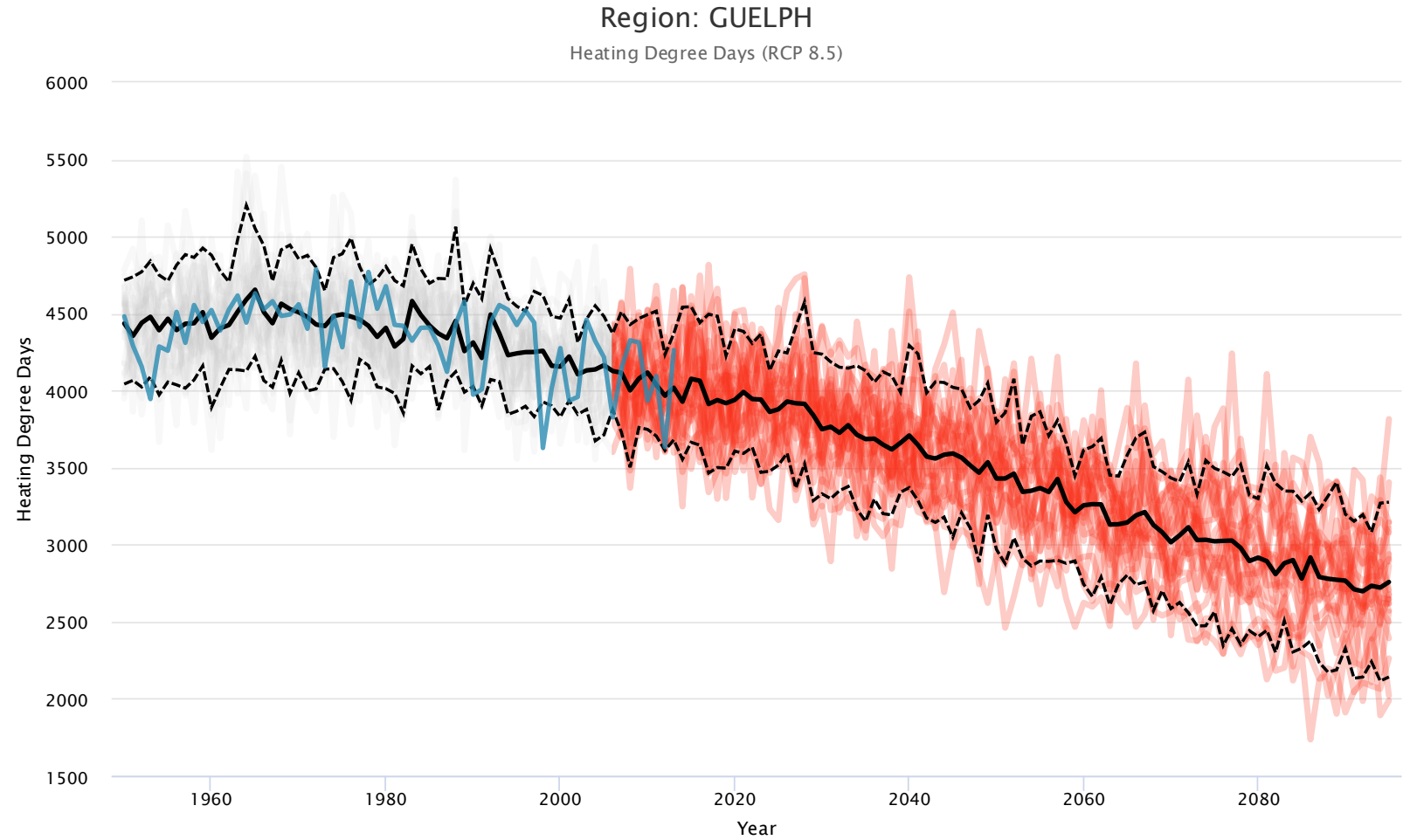
- Winter temperatures are expected to get significantly warmer with fewer extreme cold days
- Fewer frost days are expected (135 days to 78 days by 2080's) resulting in less snow and ice accumulation.
- Fewer freeze-thaw cycles (days in which air temperature fluctuates between freezing temperatures on the same day) are expected.



\* Data derived from Climate Change and Health Vulnerability Assessment, WDG Public Health (2022).

# Seasonal Variability

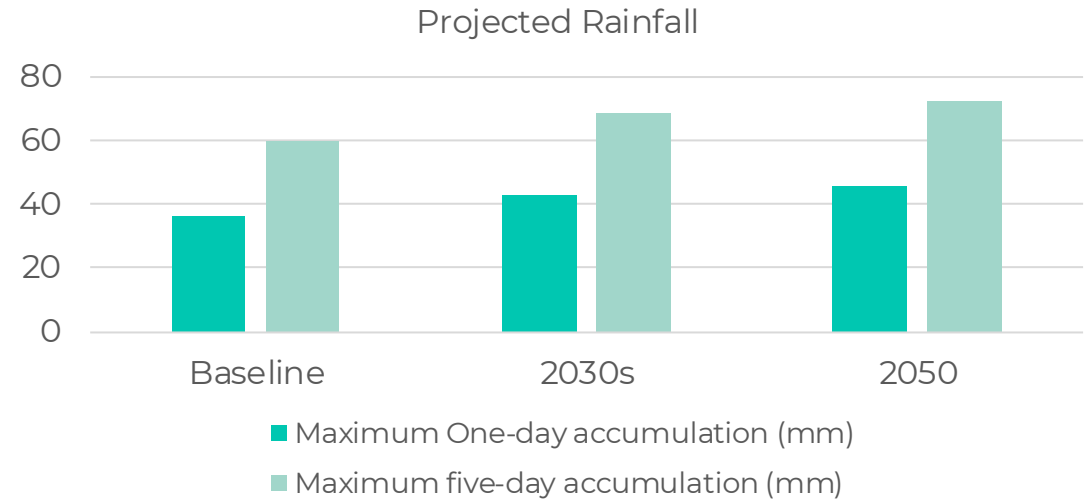
- Winters are expected to become warmer over time
- Buildings may need less heating in the winter



\* Data derived from Climate Change and Health Vulnerability Assessment, WDG Public Health (2022).

# Increased Precipitation

- Annual rainfall is expected to increase
- Rain is expected to fall in shorter, heavier storms
- Warmer winters will result in more winter precipitation falling as rain instead of snow.
- There will also be a slight increase in anticipated seasonal precipitation during the summer.



	Baseline (1989-2005)	2050		2080	
	Value	Value	Change	Value	Change
Total Precipitation (mm)	1012	1076	64↑	1106	30↑
Longest Dry Period in a year (days)	14	15	1↑	15	0
Simple Day Intensity Index (mm/day)	6.6	7.4	0.8↑	7.2	-0.2↓
Very Wet Days	198	254	56↑	287	33↑
Extreme Wet Days Totals (mm)	53	85	32↑	106	21↑

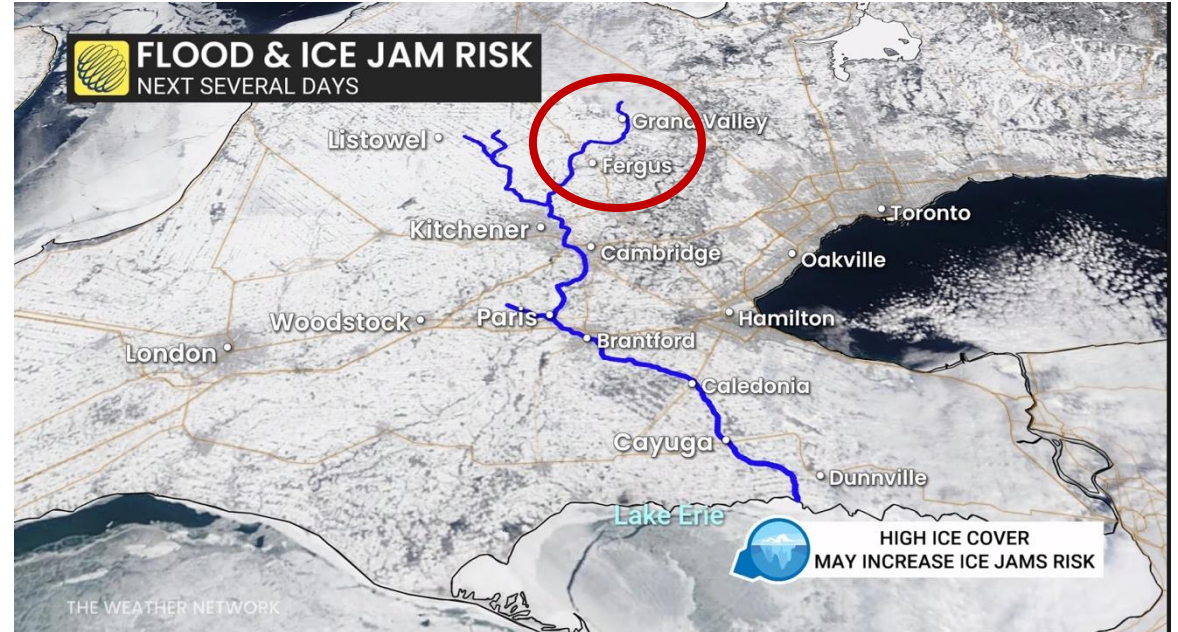
\* Data derived from Climate Change and Health Vulnerability Assessment, WDG Public Health (2022).

# Increased Precipitation

An increase in total annual precipitation and in extreme rainfall events is expected, which may result in:

- Higher river flows in the Grand River watershed
- Greater risk of urban flooding during extreme rainfall events
- Greater risk of ice jams during winter-spring transitions – 2026 Active Flood Risk reported

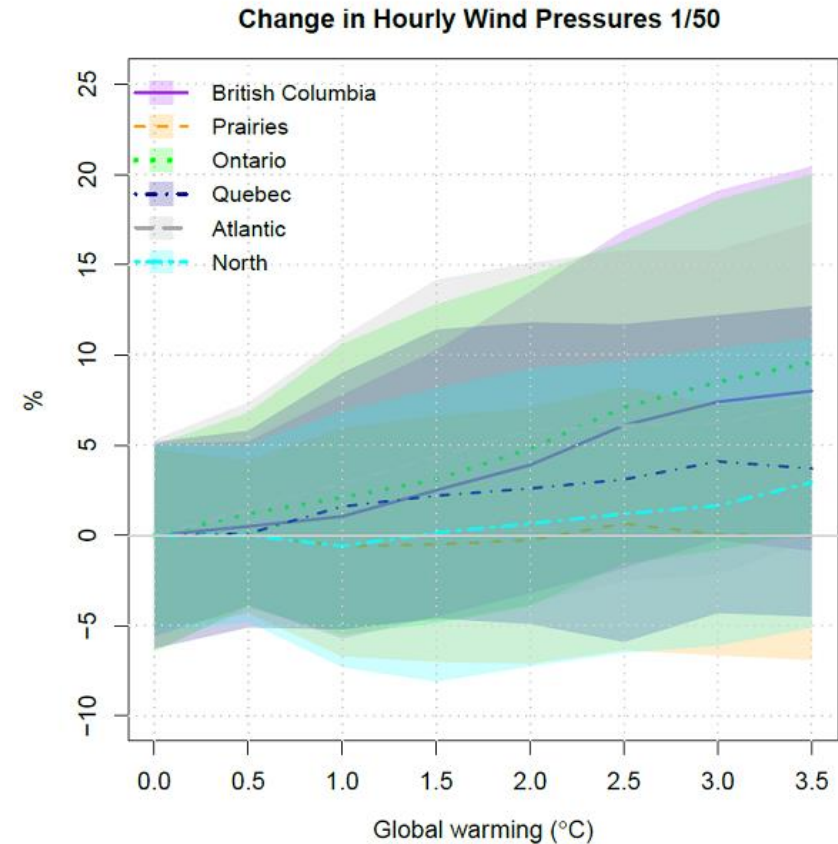
## GRCA February 2026 Warning: Risk of flooding and ice jams



\* Data derived from Climate Change and Health Vulnerability Assessment, WDG Public Health (2022).

# Extreme Weather: Winds and Storms

- Wind strength could increase by 10~14% as the temperature rises
- During heavy rainstorms, winds may become up to 12-14% stronger
- Thunderstorms and High-wind events will happen more often and may be more intense
- Warmer temperatures and stronger storms may increase the risk of wind damage and infrastructure stress.



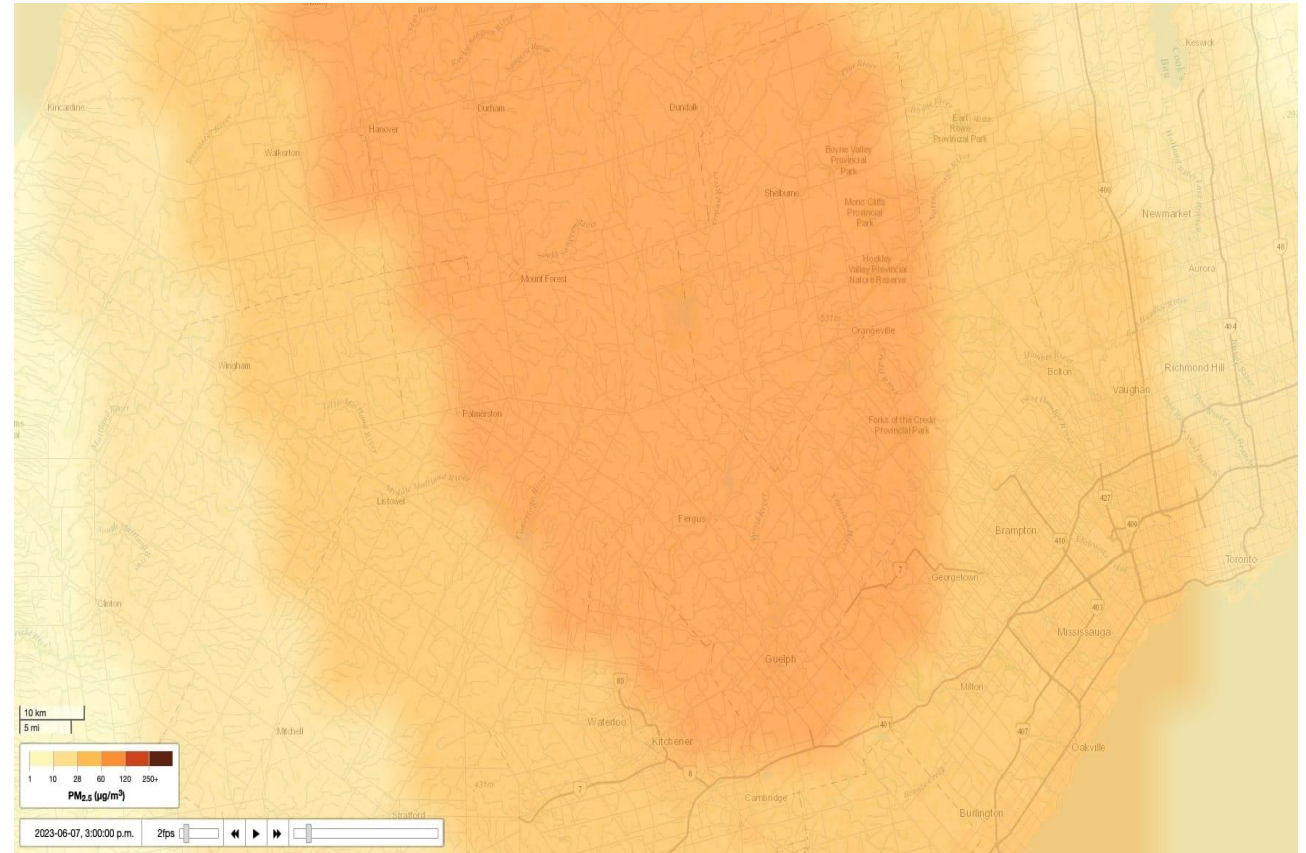
Change in Hourly Wind Pressures (1/50) for Global Warming Scenarios

\* Data derived from Climate Change and Health Vulnerability Assessment, WDG Public Health (2022).

# Extreme Weather: Wildfire

- Direct wildfire risk in Wellington County is low due to limited forest cover that can easily catch fire.
- If fires occur locally, they are expected to be low-intensity grass or brush fires.
- Rising wildfire activity is causing insured losses to reach \$706M annually\*, adding pressure on premiums even in low-risk areas.

**Special air quality alert in 2023 due to smoke from Quebec forest fires**



\*Insurance Bureau of Canada; Catastrophe Indices and Quantification Inc. (CatIQ); Beinsure, 2024–2025 reports on insured catastrophe losses in Canada.

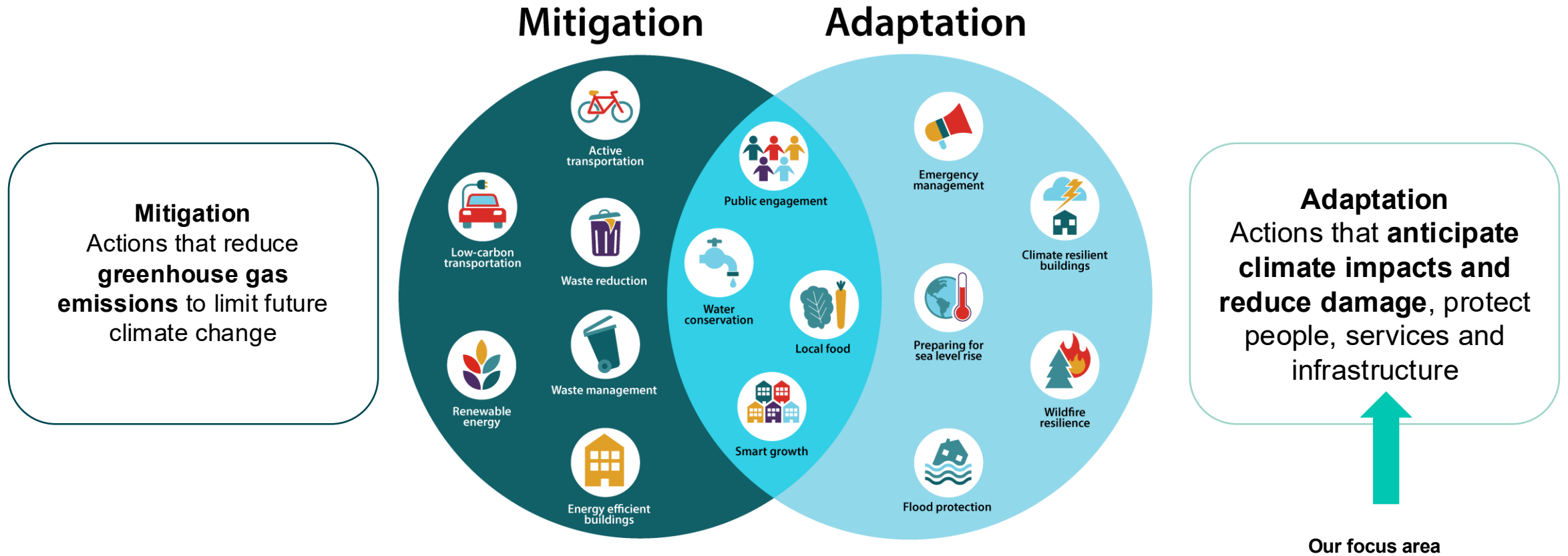
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## Our Response to Climate Change

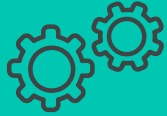


# How to address climate change?

To address these anticipated climate changes, There are two common responses to climate change: mitigation and adaptation.



# Wellington has already taken action!



## Future Focused: Climate Change Mitigation

### Climate Action Plan

Wellington's longer term climate response, supporting the shift from mitigation planning toward climate adaptation work, including the development of Weather Ready Wellington.



**2021**

Mitigation

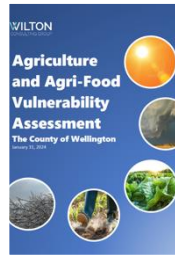
Council endorses Future Focused, Climate Change Mitigation Plan



**2022**

Adaptation

Climate Change and Health Vulnerability Assessment completed



**2024**

Adaptation

Agriculture and Agri-food Vulnerability Assessment



**2025**

Adaptation

Federal funding received for Wellington County Adaptation Plan



**2030**

Mitigation

Reduce GHG emission by 30% below 2005 levels



**2050**

Mitigation

Achieve Net-Zero by 2050

# What is a Climate Adaptation Plan ?

An action-oriented roadmap designed to help communities prepare for and manage the unavoidable impacts of climate change.

- Pinpoints 'what', 'where', and 'who' is most at risk
- Provides targeted and effective strategies to build resilience



# Building Adaptive and Resilient Communities (BARC) Framework

The BARC Framework guides communities in evaluating climate risks and developing resilience strategies.

## BARC's Five-Step Milestones:



Covered by this Climate Adaptation Plan

## Milestone 2: Assess Climate Impacts

Climate impacts are already being experienced in Wellington County!

What changes are you noticing, and how are these changes impacting you?



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# Discussion



# Next Steps

- Compile climate impact statements from today's workshop
- Distribute a complete list of climate impact statements ahead of the vulnerability assessment meeting.
  - Review and discuss climate impact statements to identify vulnerabilities and build a shared understanding of priority risks.
- Focus Group 2#: Vulnerability Assessment on Wednesday, 20<sup>th</sup> May 2026

