



CHASE

CANADIAN HEALTH ASSOCIATION
FOR SUSTAINABILITY & EQUITY

Climate Change Health and Health Equity Risks in Canada

Livable Cities Forum:
Integrating Health Equity into Municipal
Climate Action Plans and Policies

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Climate Change and Global Health

On a global scale - CC is already producing catastrophic impacts on human health.

- ❑ With 1.2°C of global warming, extreme climate events such as hurricanes, floods, heat waves, and droughts, are now:
 - ❑ claiming the lives of hundreds of thousands of people each year,
 - ❑ increasing food insecurity for tens of millions,
 - ❑ escalating conflicts, and
 - ❑ forcing people to flee from their homes.

► United Nations. 2022. Blog Conflict and Climate. <https://unfccc.int/blog/conflict-and-climate>



Climate Change Health Risks in Canada: Extreme Events

CC has been increasing the frequency & intensity of extreme events across Canada

- ❑ Hurricanes, ice storms, floods, & wildfires can:
 - ❑ Cause immediate injuries & deaths
 - ❑ Contaminate water sources
 - ❑ Harm the integrity of buildings & infrastructure
 - ❑ Involve evacuations, lost-time, loss of assets
 - ❑ Give rise to power outages - hypothermia & carbon monoxide poisoning



- ▶ Henderson, SB et al. 2021. Extreme Heat Events Are Public Health Emergencies. BC Medical Journal.
- ▶ Health Canada. 2022. Health of Canadians in a Changing Climate - Advancing our Knowledge for Action.
- ▶ Lancet Countdown Canada Policy Report 2022.

Climate Change Health Risks in Canada: Melting Permafrost

Increasing temperatures are melting permafrost that covers 40% of Canada's land mass. This can:

- ❑ Harm the integrity of buildings & infrastructure
- ❑ Disrupt transportation routes
- ❑ Limit access to food supplies
- ❑ Contaminate water supplies
- ❑ Release infectious diseases & toxics that have been stored in frozen plants, animals & ground

- ▶ Health Canada. 2022. Health of Canadians in a Changing Climate - Advancing our Knowledge for Action.
- ▶ Nash A Nicol AM. 2022. [Climate change in the Arctic and radon gas: a rising threat from the ground up](#) [blog]. National Collaborating Centre for Environmental Health. March.



Climate Change Health Risks in Canada: Air Pollution

CC is increasing air pollution

- ❑ Air pollution already causes about 15,000 premature deaths & \$130B in health-related costs/year
- ❑ Millions of people in Canada are now being exposed to extremely high levels of wildfire smoke each year.
- ❑ Increasing risks for a broad range of negative health outcomes - asthma, respiratory infections & premature deaths
- ❑ Thousands of additional deaths/year



Climate Change Health Risks in Canada: Water and Food Insecurity

CC is increasing water & food insecurity.

- ❑ Intense rainfall, rising sea levels & deep droughts can
 - ❑ Deplete water supplies
 - ❑ Contaminate ground water & surface water
 - ❑ Particularly - communities relying on small drinking water systems - many Indigenous communities.
- ❑ Rising temperatures, droughts, floods & rising sea levels are also:
 - ❑ Decreasing crop yields & encouraging pests
 - ❑ Particularly - Indigenous communities that rely heavily on traditional food sources



► Health Canada. 2022. Health of Canadians in a Changing Climate - Advancing our Knowledge for Action.

Climate Change Health Risks in Canada: Mental Health & Ecoanxiety

CC dramatically increasing the risks of mental health problems

- ❑ Canadian studies have documented:
 - ❑ Post-traumatic stress disorder (PTSD) - who have lived through extreme events
 - ❑ Grief & anxiety among people who are concerned about climate change
 - ❑ A sense of loss among those who find their homes, communities & way of life disrupted



▶ Agyapong et al., 2018. and Abacus Data, 2019. and Cherry & Haynes, 2017 as cited by Health Canada. 2022. Health of Canadians in a Changing Climate - Advancing our Knowledge for Action.

Climate Change Health Risks in Canada: Amplifies Health Inequities & Vulnerabilities

- ❑ Young children, older people, & those with pre-existing health conditions more sensitive to environmental stressors
- ❑ Structurally disadvantaged populations are at greater risk of adverse health effects already because of:
 - ❑ Factors such as low-paying jobs, poor housing conditions, food insecurity ...
 - ❑ Disadvantages that result from inter-personal & systemic biases such as sexism, racism, & colonialism ...
- ❑ Can experience greater exposures to CC impacts
- ❑ May not have the resources to protect themselves, or recover, from those events

- ▶ Berry P Clarke K Fleury MD & Parker S. 2014. Human Health in Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation. Editors: Warren FJ and Lemmen DS. Government of Canada, Ottawa, Ontario.
- ▶ Public Health Agency of Canada, Pan-Canadian Public Health Network, Statistics Canada, and the Canadian Institute for Health Information. 2018. Key Health Inequalities in Canada report/Pan-Canadian Health Inequalities Data Tool



Addressing Climate Change Health Inequities

Example: Heat Waves

Heat Dome in BC in 2021

- ❑ 440% increase in death rate in the community
- ❑ **Much higher death rates**
 - ❑ Older people & Low-income populations
 - ❑ Homes lacking air conditioners & greenness
- ❑ **Adaptation** - Cooling centres/free transit/free pools
- ❑ **Resiliency** - More trees/parks/pools
- ❑ **Mitigation** - Heat pumps in low-income housing/neighbourhoods & long-term care

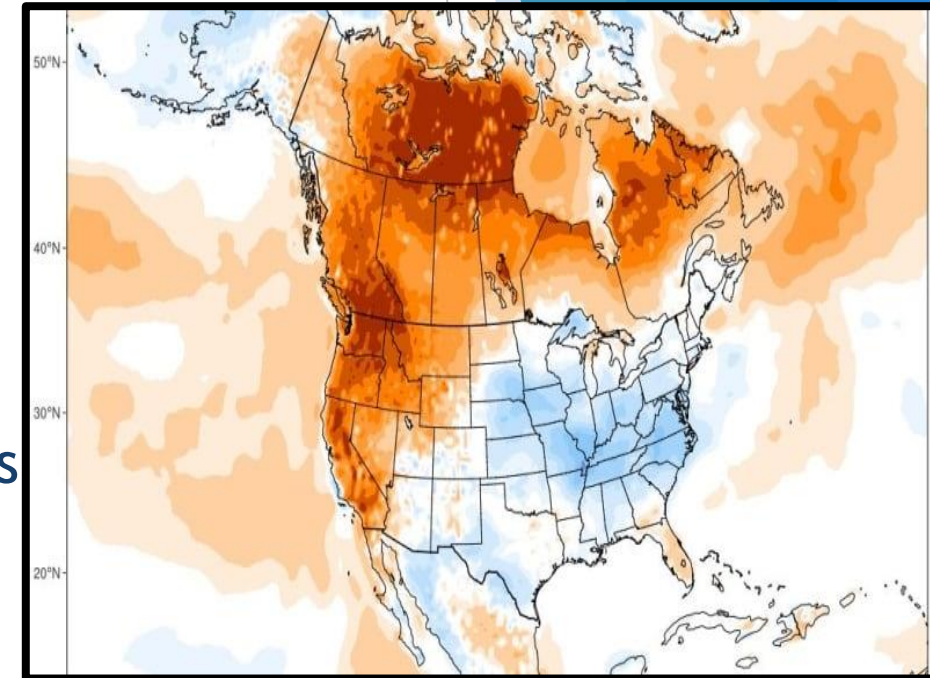
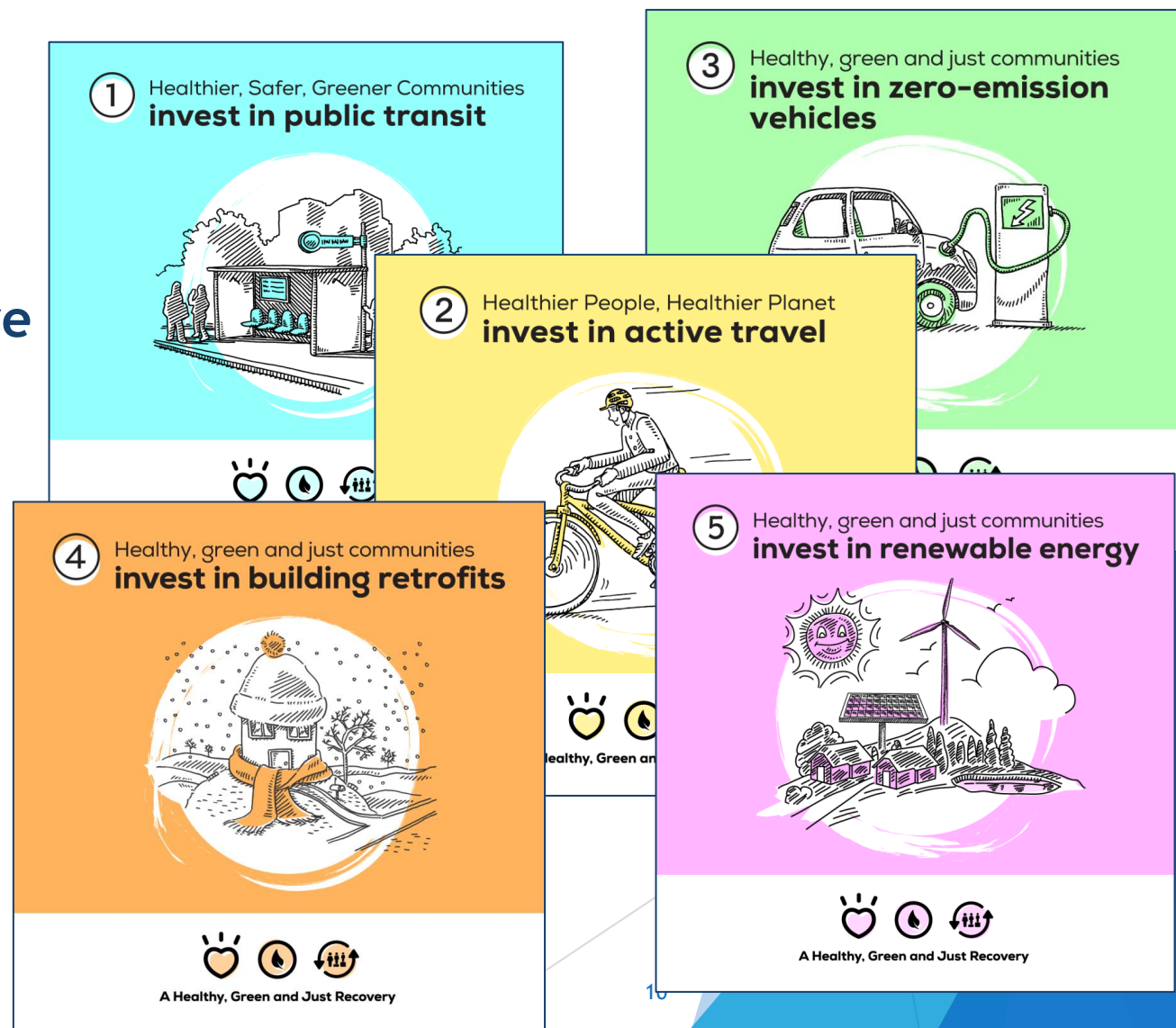


Image: CBCNews, Aug 16, 2022

Climate Solutions -Health & Health Equity Benefits

- ❑ **Public Transit**
[Factsheet-En](#) & [Fr](#)
- ❑ **Walkable Neighbourhoods**
- ❑ **Active Transportation Infrastructure**
[Factsheet-En](#)
- ❑ **Zero Emission Vehicles**
[Factsheet-En](#) & [Fr](#)
- ❑ **Renewable Energy**
[Factsheet-En](#) & [Fr](#)
- ❑ **Green Buildings/Building Retrofits**
[Factsheet-En](#)
- ❑ **Greenspace**





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