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CANADIAN HEALTH ASSOCIATION FOR SUSTAINABILITY & EQUITY

Making the Health Case for Climate Action – the Transportation Sector

UBC CPD – The Climate Emergency: Prescription for the Turn Around
October 30, 2021

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Canadian Health Association for Sustainability and Equity (CHASE)
chasecanada.org/

Canadian Health Association for Sustainability & Equity (CHASE)

- Executive Director, Board Members & Associates - public health professionals - long history of work on environmental health & built environment issues
- Collaborate on intersection between climate change & health
- Research, capacity building, communications & Government Relations
- chasecanada.org
- @Health_Enviro

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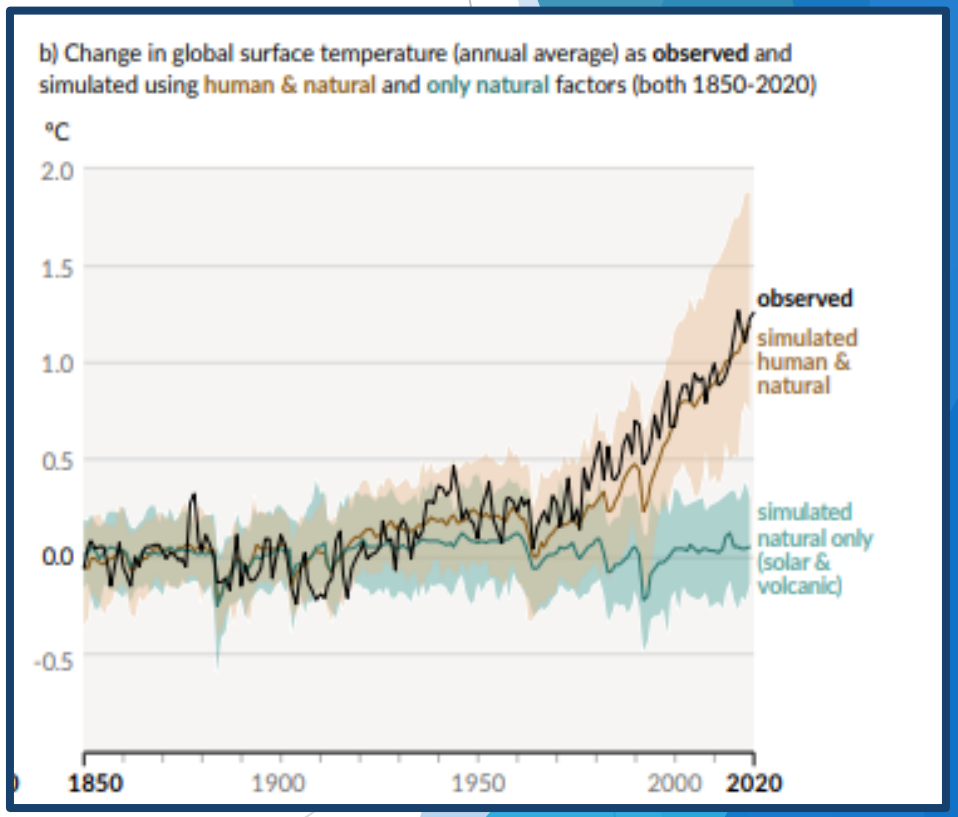
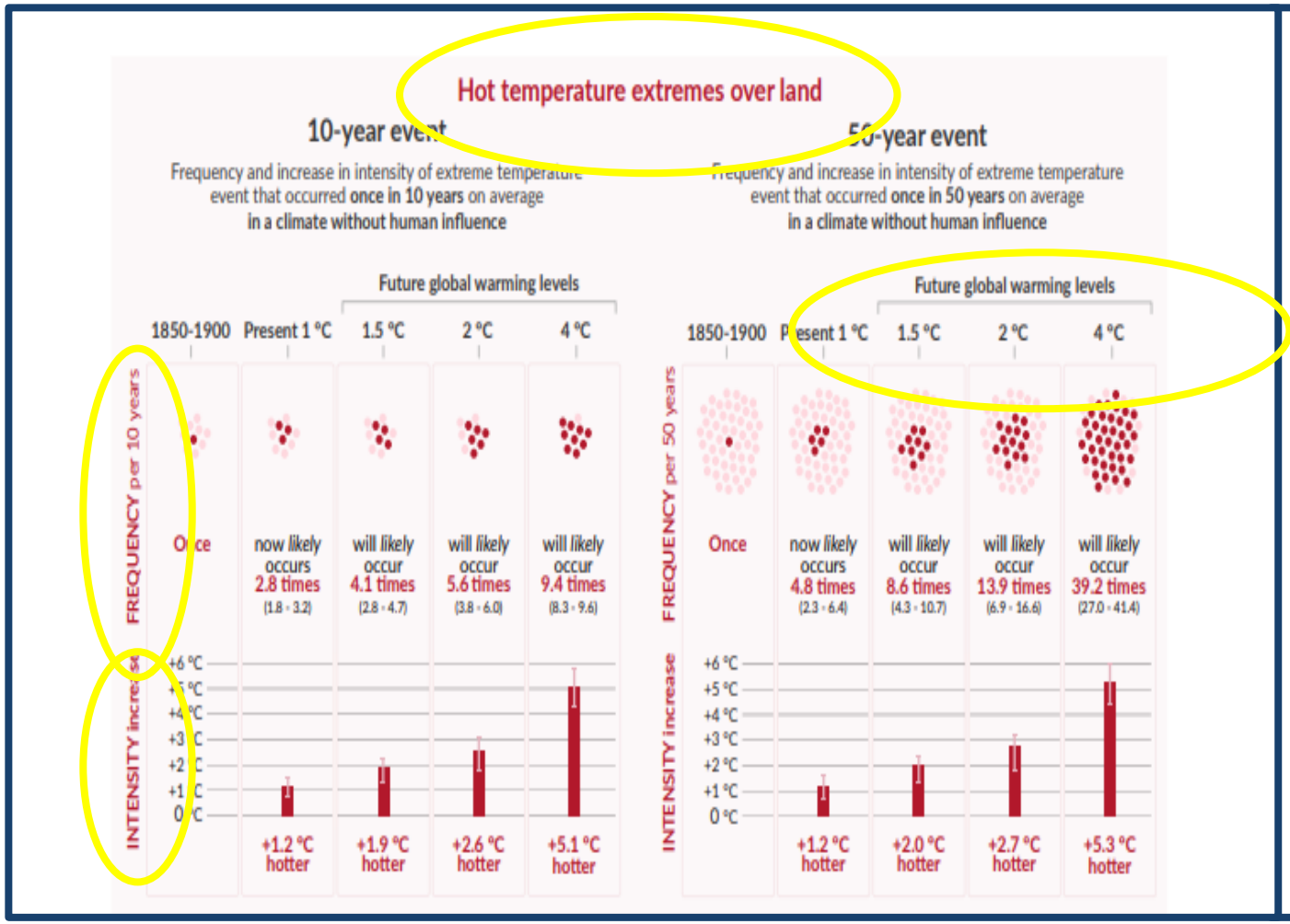
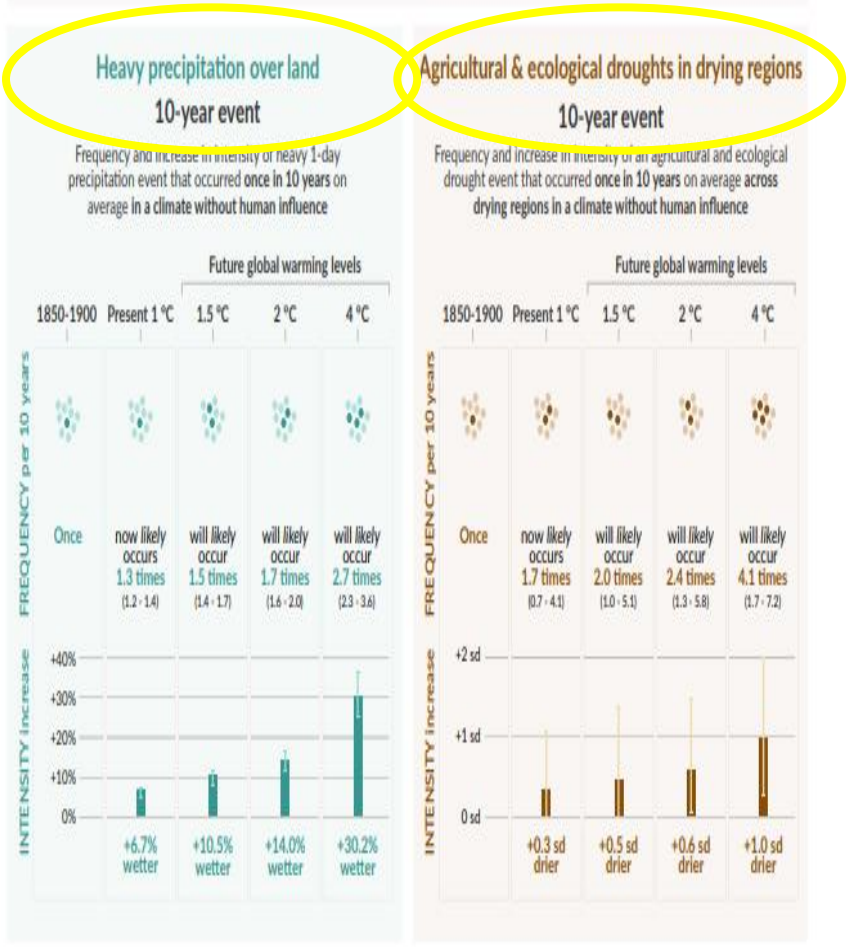
Climate Change Update: Intergovernmental Panel on Climate Change (IPCC) – 2021 Report

- **"Unequivocal that human influence has warmed the atmosphere, ocean & land."**
- Unprecedented rate for at least 2000 years
- Affecting weather & climate extremes across the globe
- **Approximately 1.1°C of warming since 1850-1900**
- Reach or exceed 1.5°C of warming within 20 years
- **Will exceed 2°C of warming this century unless deep reductions in GHC emissions occur in the coming decades**



Climate Change Update: IPCC 2021 – Increase in Impacts with Increase in Global Warming

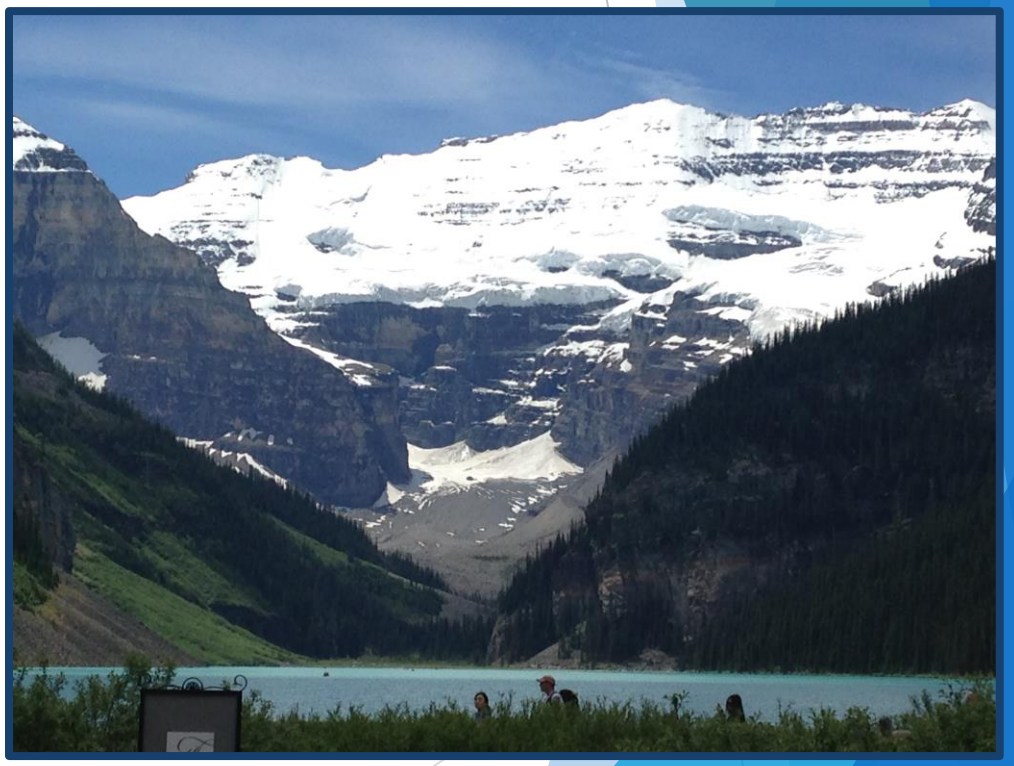




Climate Change Update: Intergovernmental Panel on Climate Change (IPCC) – 2021 Report

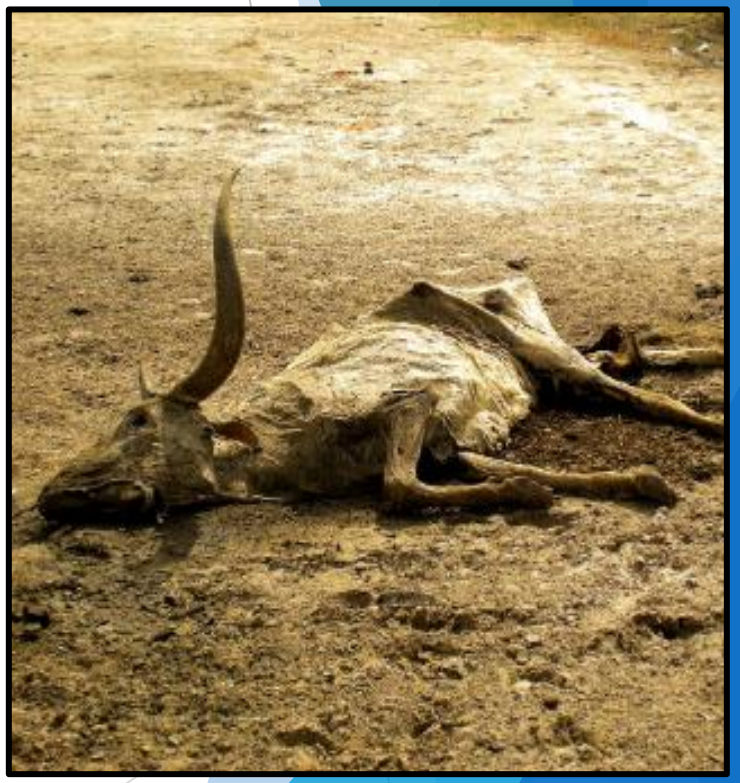
Meeting the goals of the Paris Agreement on Climate Change:

- **Would provide air quality & related health benefits quickly**
- Could stabilize global temperatures within 20-30 years
- Some changes are irreversible for 100s to 1000s of years (ocean, ice sheets & sea levels).



Climate Change & Health: World Health Organization (WHO) Fast Facts

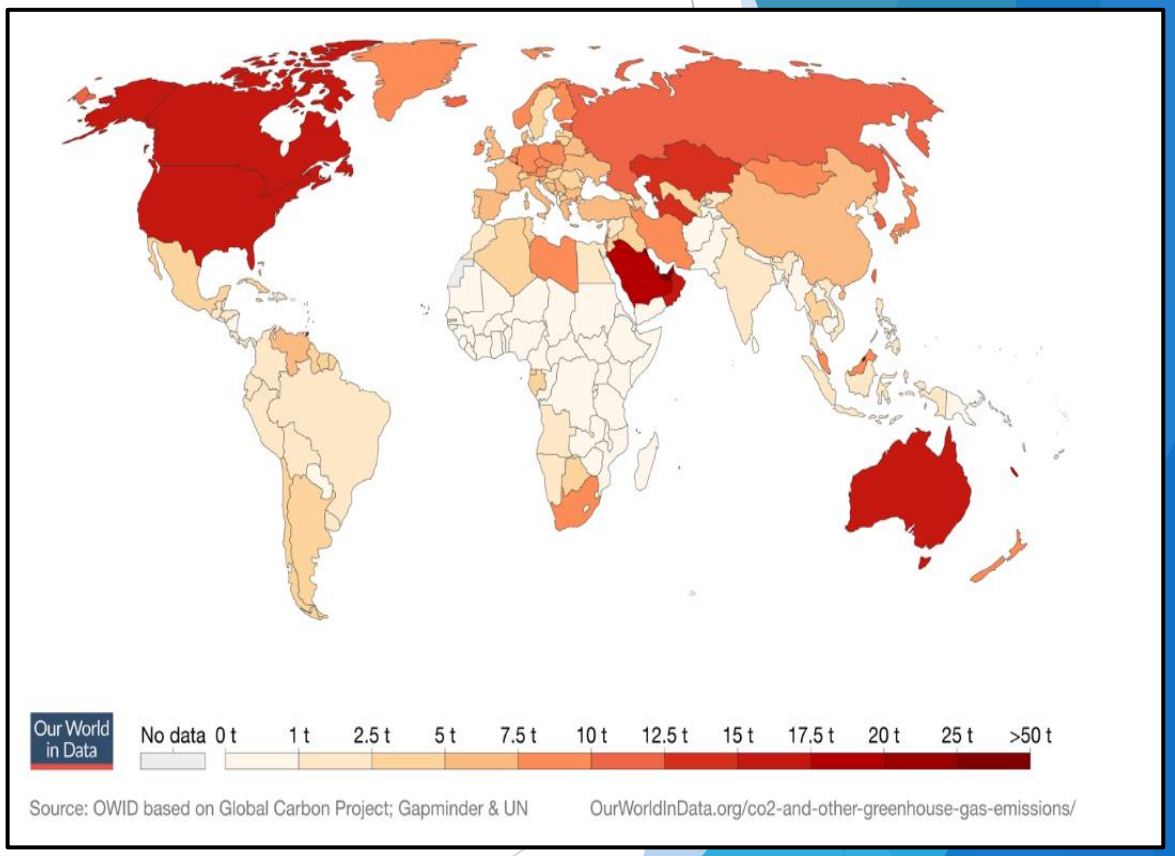
- **"Climate change is the single biggest health threat facing humanity."**
- CC - already harming health globally - air pollution, disease, extreme weather events, forced displacement, food insecurity & pressures on mental health.
- **Meeting Paris Agreement Goals - could save about a million lives a year worldwide by 2050 by reducing air pollution alone**
- The value of health gains would be about double the global cost of implementing carbon mitigation measures.
- **In 2018, air pollution from fossil fuels caused $2.9 trillion in health & economic costs on a global basis.**



Reference: https://www.who.int/publications/i/item/fast-facts-on-climate-change-health

Action Needed to Prevent 2°C Warming: IPCC 2019 Report

- **To prevent 2°C of warming, the IPCC concluded that collectively, we have to cut climate emissions by:**
  - 45% by 2030
  - to net zero by 2050.
- **Canada should do more because:**
  - It is 1 of the top 10 emitting countries in absolute terms
  - 1 of top 4 emitting countries on a per person basis



Reference: Ritchie and Roser, 2019

References: IPCC Report, 2019; Module 4, CAPE Climate Change Toolkit for Health Professionals

Two Types of Health Arguments for Climate Action

- Avoid Climate-Related Health Impacts
- Produce Immediate Health & Health Equity Benefits

Climate Change Health Risks in Canada
Air Pollution

- Wildfires in recent years have exposed millions in Canada to extremely high levels of air pollution (e.g. AQI of 10+)
- New study - estimates that exposure to **wildfire smoke in Canada** between 2013 and 2018 (excluding 2016 – the year of the Fort McMurray wildfire) **produced health-related impacts valued at $4.7-20.8 Billion/year**
- CICC estimates that **air levels of ozone -** expected to increase with increased temperatures - could result in health-related impacts valued at **$87 Billion /year in the 2050s**

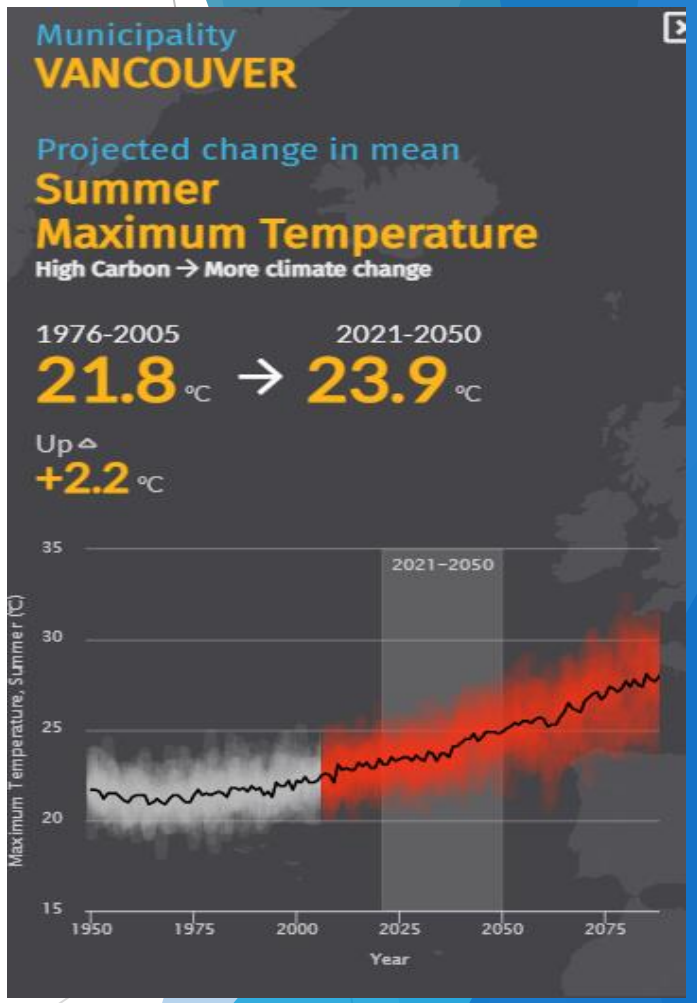
References: Matz et al. Science of The Total Environment, July 2020; Canadian Institute for Climate Choices, June 2021

Climate Change Health Risks in Canada: Increasing Temperatures

Temperatures are increasing across Canada:

- **2020 Lancet Policy Report** – high temperatures in 2018 – estimated to cause 2,700 premature deaths in Canada

- **Heat Dome in June:**
  - about 600 excess premature deaths - lower mainland BC
  - Death rates increased by 115% - aged 65-74
  - Death rates increased by 35% - aged 19-50
- **CICC estimates – in the 2050s - heat-related health impacts:**
  - Will increase heat-related hospital admissions by by 21%
  - Will produce healthcare costs of $3-3.9 billion/year



References: Lancet Countdown Canadian Policy Report 2020; Canadian Institute of Climate Choices, 2020; CBC - https://www.theglobeandmail.com/canada/british-columbia/article-june-heat-wave-in-bc-was-deadliest-weather-event-in-canadian-history/

Climate Change Health Risks in Canada: Extreme Weather Events

Extreme Weather Events

- >195 disaster-level events - 2008 to 2018
- $14 billion in insurance costs – 9 years

Wildfires: Half a million Canadians evacuated (40 years)

- Separation from family & home
- Loss of Income & Assets

Floods: The most common & costly disasters in Canada

- Cut people off from food, power, health services

References: Module 3- CAPE Climate Change Toolkit for Health Professionals, 2019; CHASE/CPHA/OPHA Backgrounder, 2021, Building Retrofits.

Climate Change Health Risks in Canada: Food, Water & Vector-Borne Diseases

Food Safety & Security

- Melting permafrost & unstable ice roads can reduce access to traditional foods
- Algal blooms can increase the risk of shellfish poisoning

Water Safety & Security

- Melting permafrost, droughts & floods can contaminate water supplies
- Drought can deplete water supplies

Vector-Borne Diseases

- Lyme disease – 2025 cases in 2017
- West Nile virus – over 6000 cases since 2002

Photo: Daniel Tobias, Pinehouse Lake, Saskatchewan

References: Module 3, CAPE Climate Change Toolkit for Health Professionals

Climate Change Health Risks in Canada: Mental Health

- **Extreme weather events**
  - post-traumatic stress disorder, anxiety, depression & substance abuse
- **Climate variability & incremental changes:**
  - anxiety, depression & suicidal thoughts
- **Threat of future climate-related disasters:**
  - emotional distress, heightened anxiety & feelings of hopelessness.

References: Module 3, CAPE Climate Change Toolkit for Health Professionals

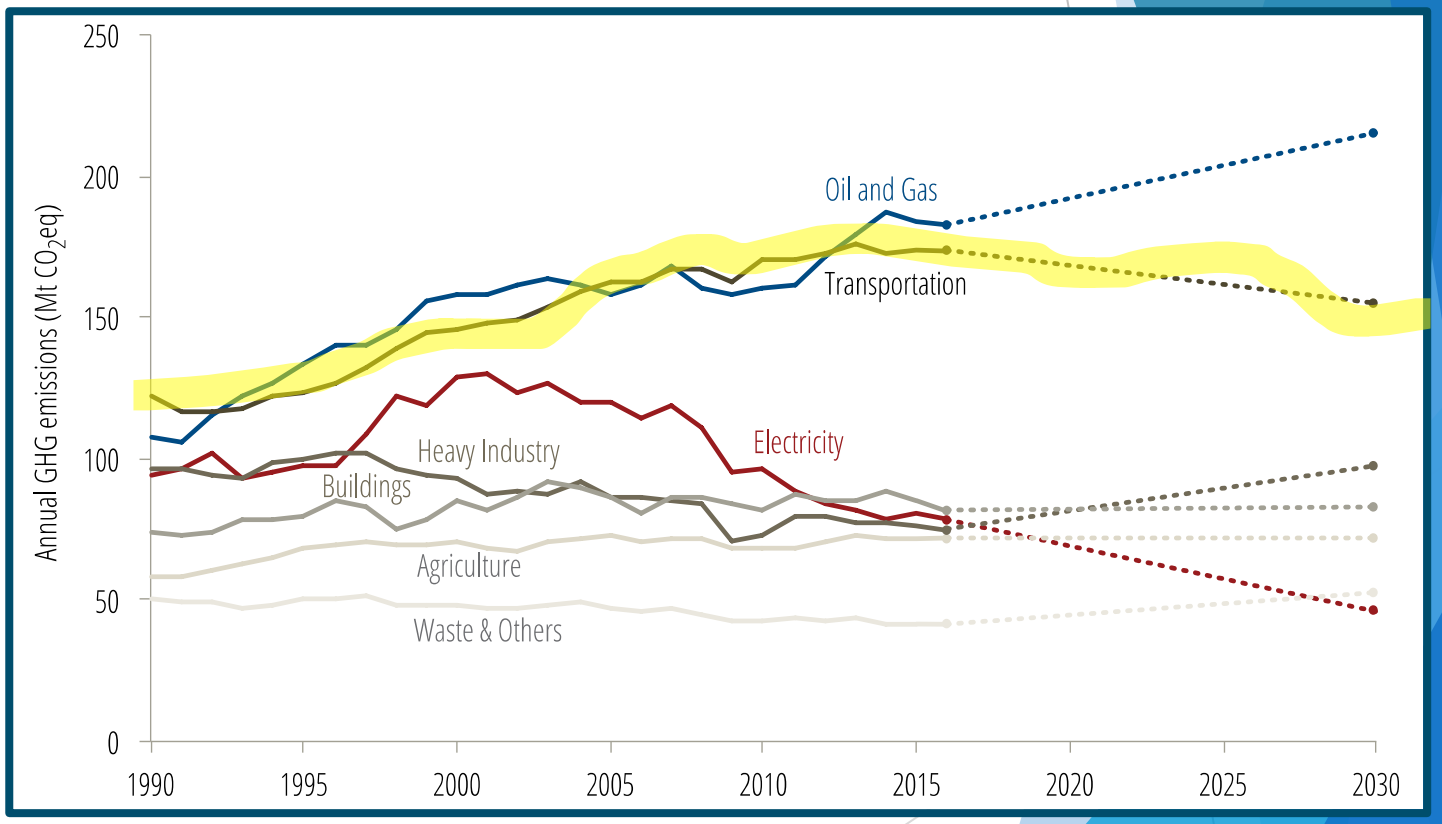
Climate Change Health Risks in Canada: Amplifies Health Inequities & Vulnerabilities

- **Older people, young children & people with chronic diseases** – more sensitive
- **People living in the North** – food security
- **People on low incomes & others who experience health inequities** - at greater risk for adverse health impacts because of social disadvantages
- **Low-income populations** – may not have the resources to protect themselves, or to recover from, extreme events

References: Module 3, CAPE Climate Change Toolkit for Health Professionals

Canadian GHGs by Economic Sector, 1990-2016 with Federal Projections to 2030

- **Electricity Emissions** red line; 11% today
- **Transportation Sector** brown line; 25% today
- **Oil & Gas Sector** blue line; 26% today
- **Buildings:** grey line; 13%

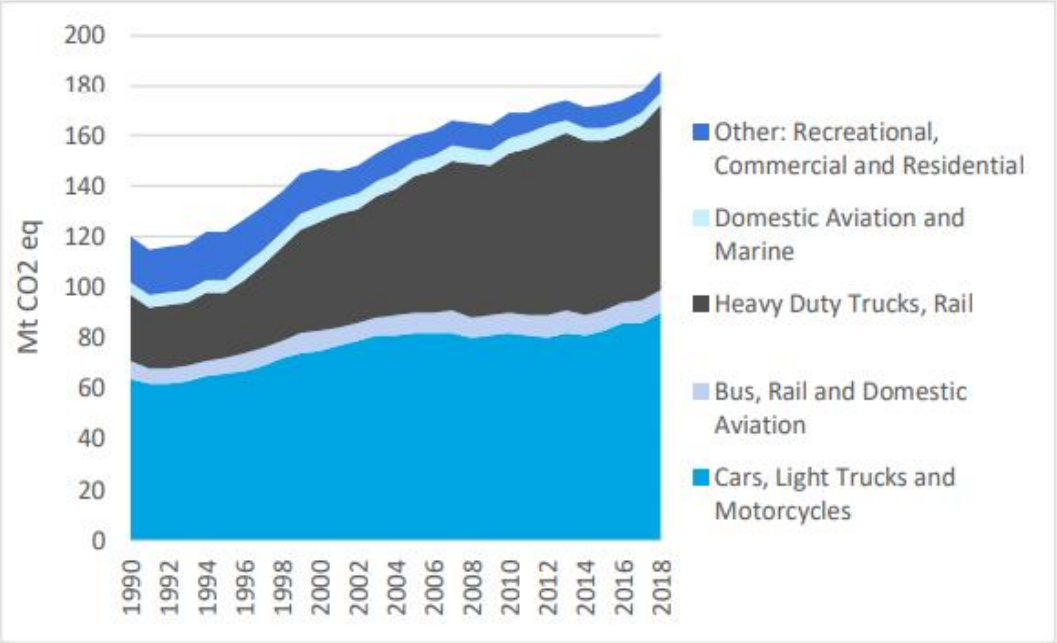


References: Module 4, CAPE Climate Change Toolkit for Health Professionals

Transportation Sector in Canada - 1990-2016

- Transportation GHG emissions increased by 54%
- **Most of these emissions - Road Traffic**
  - Cars/Lt trucks – bright blue
  - Trucks – black
- Population grew by 20%
- Vehicle registration grew by 48%
- Shift from cars to SUVs & Mini-vans
- Rise in Freight Traffic

FIGURE 3: GHG EMISSIONS FROM THE TRANSPORTATION SECTOR, 1990-2018



Source: ECCC (2020)

Reference: Environment and Climate Change Canada (2020). National Inventory Report 1990- 2018: Greenhouse Gas Sources and Sinks in Canada. Part 3.& University of Calgary School of Public Policy https://www.policyschool.ca/wp-content/uploads/2021/08/EEPT-August-2021-FINAL.pdf

Two Types of Health Arguments for Climate Action

- Avoid Climate-Related Health Risks
- Produce Immediate Health & Health Equity Benefits

Health Benefits from Climate Action
Air Pollution

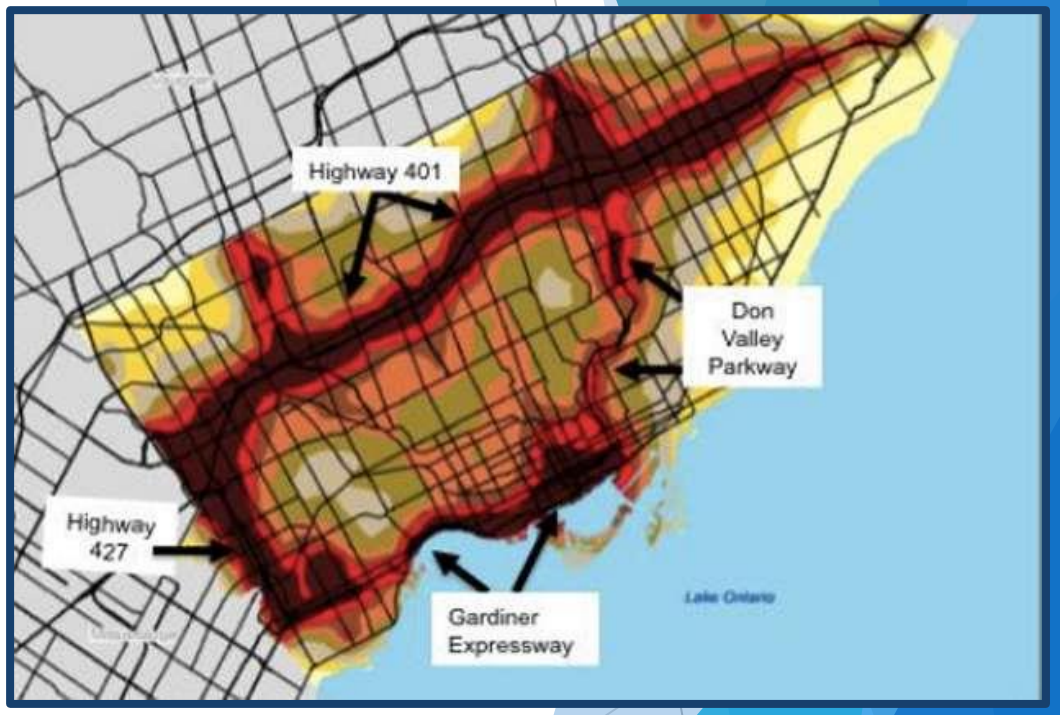
- **Health Canada in 2021** - air pollution from all sources in Canada is responsible for:
  - **15,300 premature deaths**
  - 2.7M asthma symptom days &
  - 15M acute respiratory symptom days each year
  - **Valued at $120 billion per year.**

- **New study by Vohra et al estimates that:**
  - **PM2.5 from fossil fuels alone in Canada**
  - **responsible for 34,000 premature deaths/year**

References: Health Canada, 2021; Vohra et al. Environmental Research. April 2021

Health Benefits from Climate Action: Public Transit #1

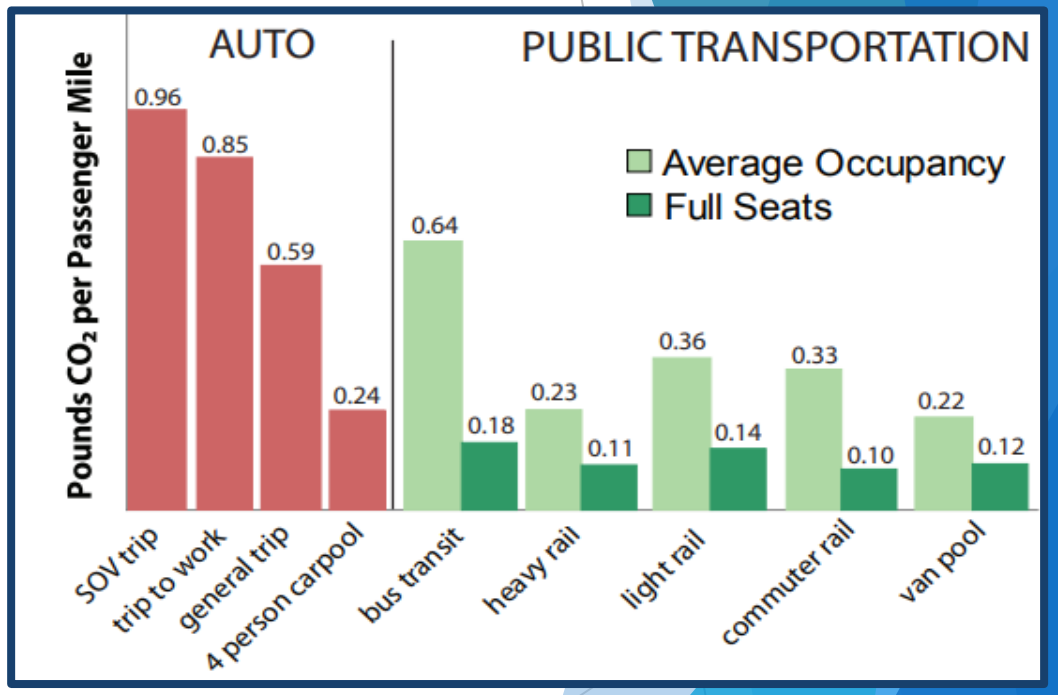
- **Transportation** - major source of air pollution
- **Traffic-Related Air Pollution (TRAP)**
  - Significantly higher levels of pollution within 50-1500 metres of major roads & highways
  - Significantly higher rates of many health risks near traffic corridors
- **In the GTHA alone:**
  - 700 premature deaths
  - 2800 hospital admissions/year
  - $4.6 billion/year in health-related costs



References: CHASE/CPHA/OPHA, Backgrounder & Factsheet, Transit, 2021; TPH, May 2014

Health Benefits from Climate Action: Public Transit #2

- **Transit Reduce GHGs**
  - Graph – US DOT – 2010
  - Pounds of CO2/Passenger Mile Travelled
  - Red – cars & Green – transit
- **Transit reduces air pollution – reduces VKT**
- **Transit increases physical activity**
  - Round-trip provides 25% of daily physical activity
- **E.g. GTHA MOHs - new transit plan** - could reduce health-related costs by $2 billion/year - air pollution & physical activity



References: CHASE/CPHA/OPHA, Backgrounder & Factsheet, Transit, 2021; US DOT 2010
https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/PublicTransportationsRoleInRespondingToClimateChange2010.pdf-

Health & Health Equity Benefits from Climate Action: Public Transit #3

- **Transit reduces deaths from vehicle collisions**
  - 20 x fewer deaths per VKT
- **Transit reduces social inequities**
  - Many people can not drive due to age, income or ability
  - Provides greater access to jobs, services & recreation
  - More Affordable - save $6000 -$13000/year – if you don't need a car
  - Leaves more money for essentials

References: CHASE/CPHA/OPHA, Backgrounder & Factsheet, Transit, 2021

Health & Health Equity Benefits from Climate Action: Active Transportation

- **Modelling studies – Cycling reduces Air Pollutants & GHGs**
- **Physical inactivity in Canada** - costs $6.8 billion/year
- **Risk of Premature Deaths from all causes decreased:**
  - by 28% - people who cycled 3 hours/week
  - by 22% - people who walked 29 minutes/day
- **Low-income populations:**
  - Greater risk from chronic diseases – social disadvantages
  - More dependent on local services
  - Greater chance of living in a poorly serviced neighbourhoods

References: CHASE/CPHA/OPHA Backgrounder & Fact Sheet – Active Travel, 2021

Health Benefits from Climate Action: Zero Emission Vehicles (ZEVs)

- **UofT & Environmental Defence & OPHA Study** on impacts of ZEVs in the GHTA:
  - **Replacing 100% of cars & SUVs**
  - Avoid 313 premature deaths/year
  - **Replace 100% of public transit buses**
  - Avoid 143 premature deaths/year
- **Low income populations:**
  - More likely to live near highways
  - More vulnerable to air pollution because of social disadvantages

CHASE/CPHA/OPHA, Backgrounder & Factsheet, Zero Emission Vehicles, 2021

Role of Health Professionals on Climate Change: Educate Patients & the Public

Public is concerned about Climate Change BUT does not recognize policies that fight climate change.

- Health Professionals are influential; trustworthy & independent
- Health message re: Climate Change resonates with the public
- People more willing to take action when they know that climate change can impact their health & that of their families.
- Help them understand the policies needed

A Healthy, Green and Just Recovery

Public Transit FACTSHEET 1

Invest in public transit

TRANSIT AGENCIES ACROSS CANADA HAVE BEEN STRUGGLING FINANCIALLY AS RIDERSHIP HAS DROPPED AS A RESULT OF THE COVID-19 PANDEMIC. MANY HAVE BEEN FORCED TO CUT SERVICES. A PRELIMINARY ANALYSIS OF CITIES IN USA AND CANADA HAS FOUND THAT IN MANY CASES, LOWER-INCOME NEIGHBOURHOODS, THAT DEPEND MORE HEAVILY ON PUBLIC TRANSIT, HAVE BEEN HARDER HIT BY SERVICE CUTS THAN HIGHER-INCOME NEIGHBOURHOODS. IT IS TIME TO RECOGNIZE PUBLIC TRANSIT AS AN ESSENTIAL SERVICE THAT PROVIDES MANY HEALTH, SOCIAL AND ENVIRONMENTAL BENEFITS, THAT SHOULD RECEIVE PERMANENT FUNDING FOR OPERATING COSTS FROM CANADIAN GOVERNMENTS.

Public transit is good for us, our communities and our planet.

PUBLIC TRANSIT IS MORE AFFORDABLE

In Canada, it typically costs between $6,000 and $13,000 per year to own and operate a car. Public transit is a more affordable option. Households can save, on average, $10,000 per year by using public transit. An efficient public transit system improves access to jobs, schools, essential services and recreational opportunities for people of all ages and circumstances at a lower cost.

PUBLIC TRANSIT INCREASES SOCIAL EQUITY

Public transit can reduce social inequities that contribute to poor health. About 20-40% of the people in our communities do not drive because of their age, income or ability, or choose not to drive. In Canada, newcomers and women who commute to work rely more heavily on public transit. An efficient and reliable public transit system provides a more independent and affordable way to get around. By eliminating the need to own a car (or a second car), public transit also allows people living on low incomes to direct more of their income to other essentials such as food, clothing and rent. Public transit can also be designed to meet the needs of rural or remote communities, senior populations, and those who are physically or otherwise unable to drive.

PUBLIC TRANSIT REDUCES AIR POLLUTION

Public transit can reduce hospital visits, chronic diseases and early deaths by reducing air pollution. Air pollution causes about 14,600 early deaths each year in Canada. While air pollution is harmful to everyone, it is a greater risk for young children, older people, and those with pre-existing health conditions. Traffic-related air pollution is a serious concern in Canada because nearly one third of the population – about 10 million people – live in close proximity to high-volume traffic corridors that produce higher levels of air pollution.

Role of Public Health on Climate Change: Work for Change

How to Get Involved?

- Participate in Workplace Committees
- Participate in demonstrations & sign petitions
- Engage in social media campaigns
- Write letters to decision-makers & to papers
- Meet with local councilors or MPPs/MLAs
- Give deputations at BOH & City Council meetings
- Collaborate with community or environmental groups that share your concerns

What to Ask for re: Transportation?

- Ask for bike racks & benches at work
- Speak out for bike lanes, sidewalks & better transit service, particularly for low-income neighbourhoods
- Press for planning policies that discourage urban sprawl; support walkable, bike-able & transit supportive communities
- Press for investments in Transit, Cycling & ZEV infrastructure

Health & Health Equity Benefits of Climate Actions

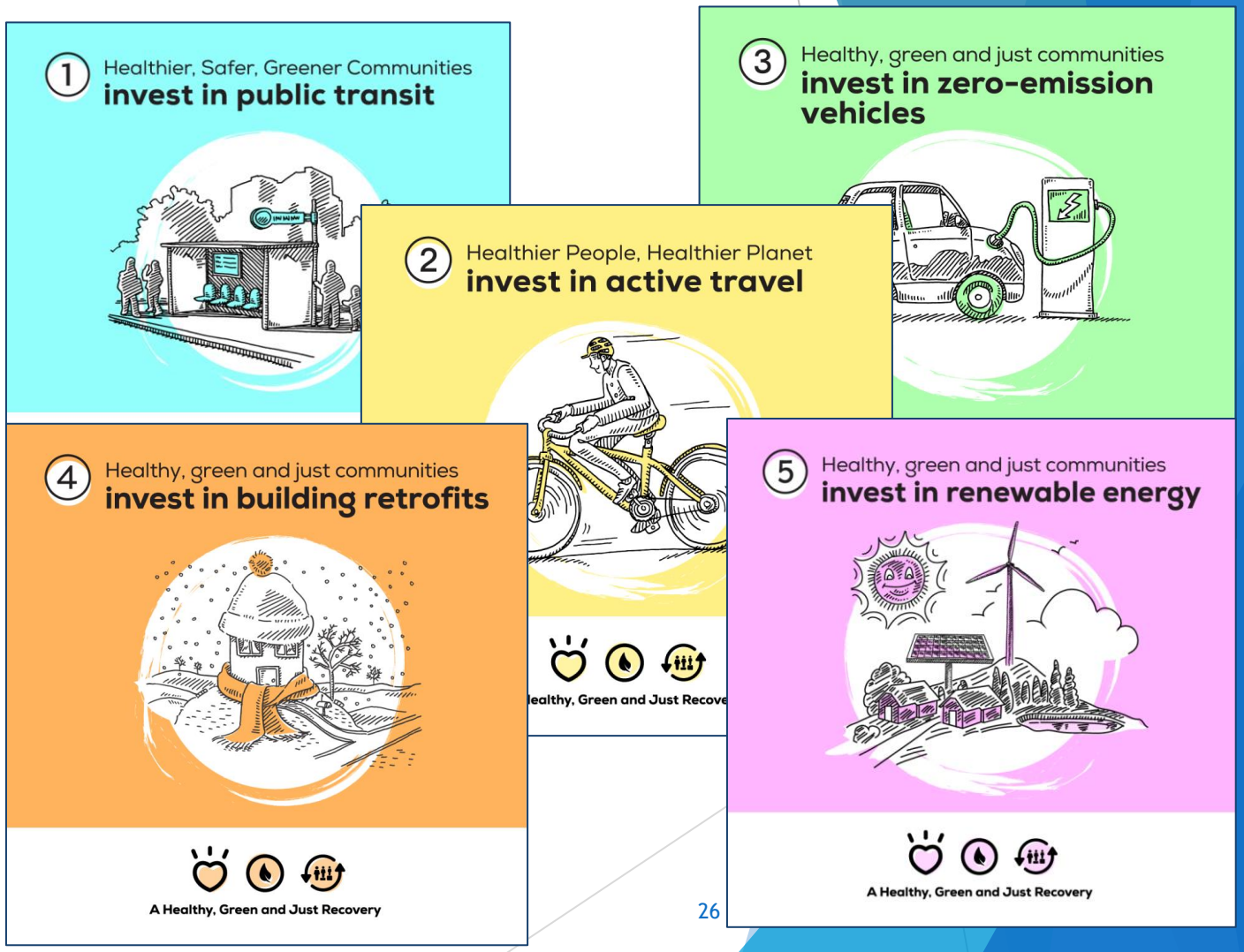
Public Transit - Climate, Health & Health Equity Benefits
Factsheet-En & Fr & Backgrounder - En & Fr

Active Transportation - Climate, Health & Health Equity Benefits
Factsheet-En & Backgrounder-En & Fr

Zero Emission Vehicles - Climate, Health & Healthy Equity Benefits
Factsheet-En & Fr & Backgrounder-En & Fr

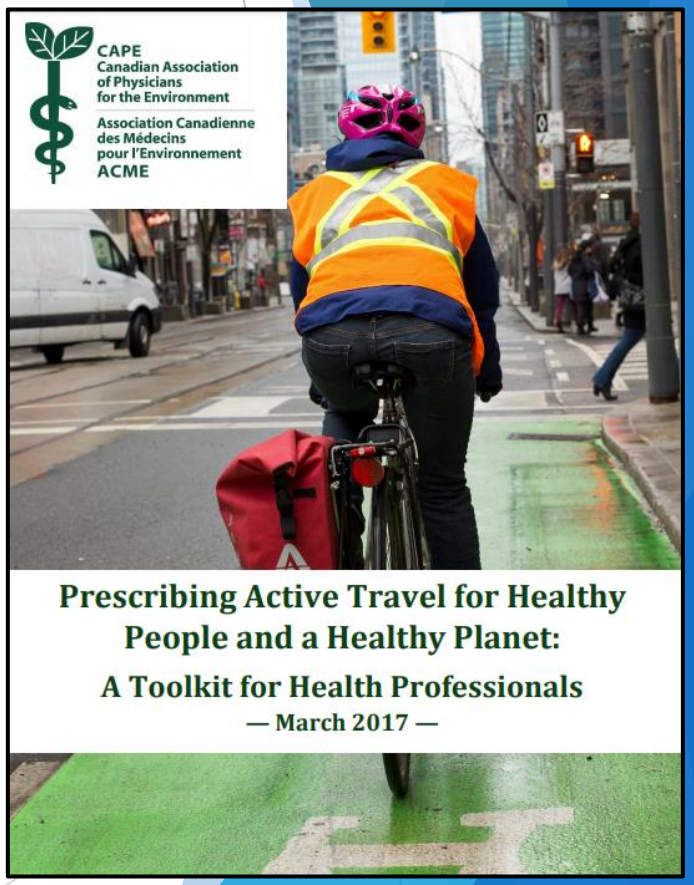
Renewable Energy - Climate, Health & Health Equity Benefits
Factsheet-En & Fr & Backgrounder-En &Fr

Building Retrofits - Climate, Health & Health Equity Benefits
Factsheet-En & Fr & Backgrounder-En & Fr.



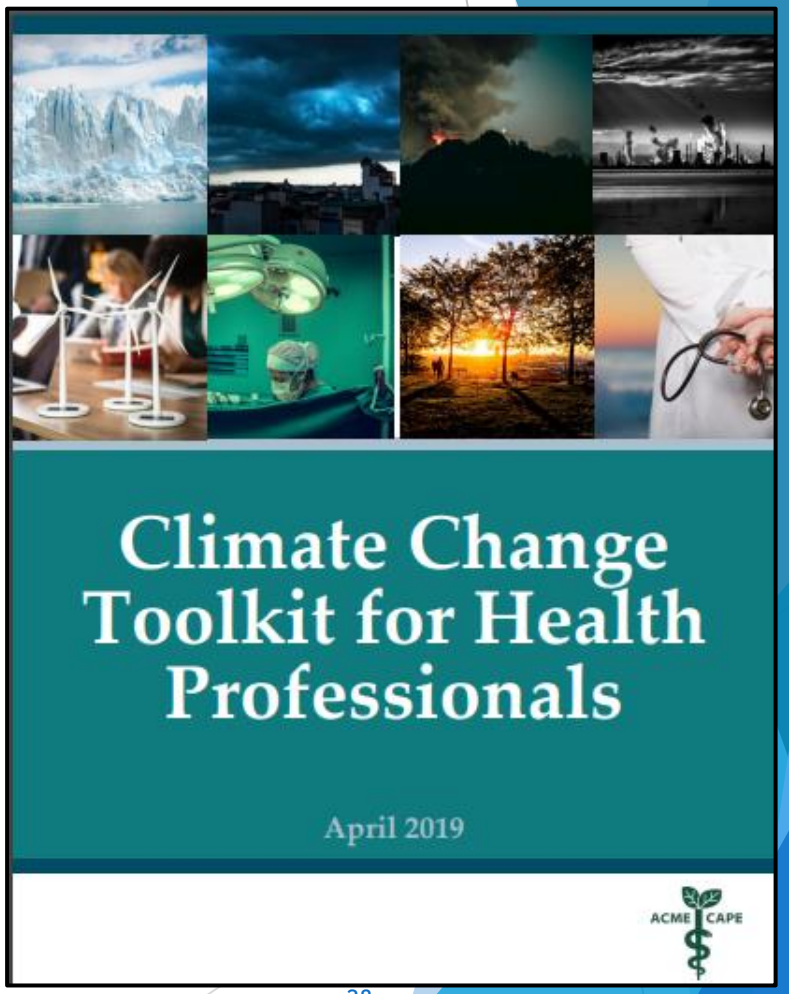
Prescribing Active Travel for Healthy People and Health Planet - Toolkit

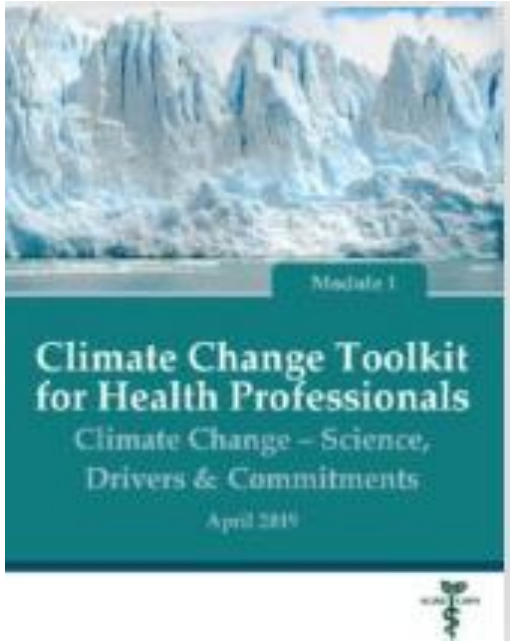
- Produced for CAPE in 2017
- Five stand-alone but complementary modules in the toolkit – **English** (49 pages)
  - **Backgrounder** - Active Travel Needs a Healthy Community Design
  - **Backgrounder** - Active Travel, Climate & Public Health
  - **Patient Brochure** - Get Healthy and Fit with Transit
  - **Patient Brochure** - Get Healthy and Fit with Active Transportation

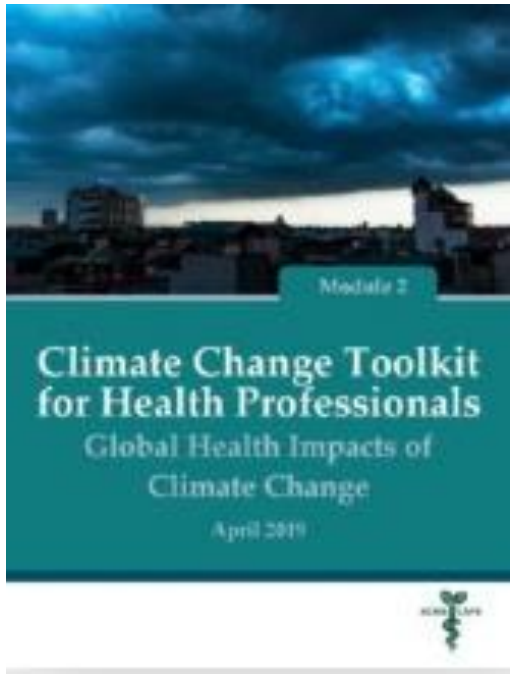


Climate Change Toolkit for Health Professionals

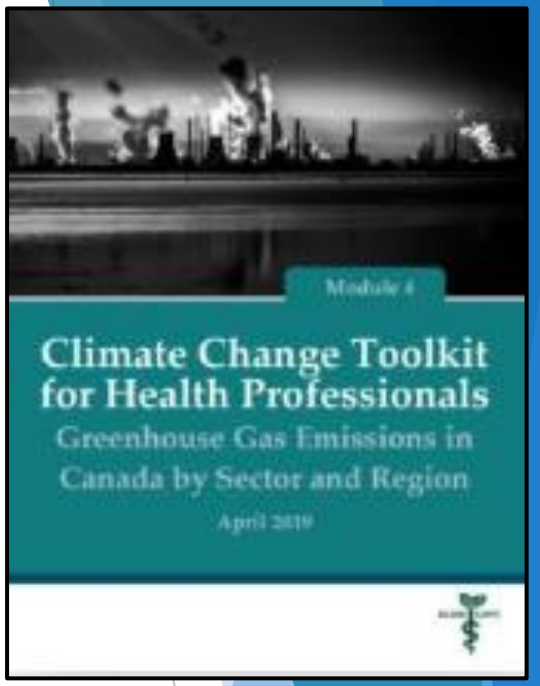
- 8 Stand-Alone but complementary modules
- Prepared by professionals with requisite expertise
- Reviewed by CAPE Board members/Volunteers
- Available English & French
- Open access
- https://chasecanada.org/climate-change-toolkit-for-health-professionals/

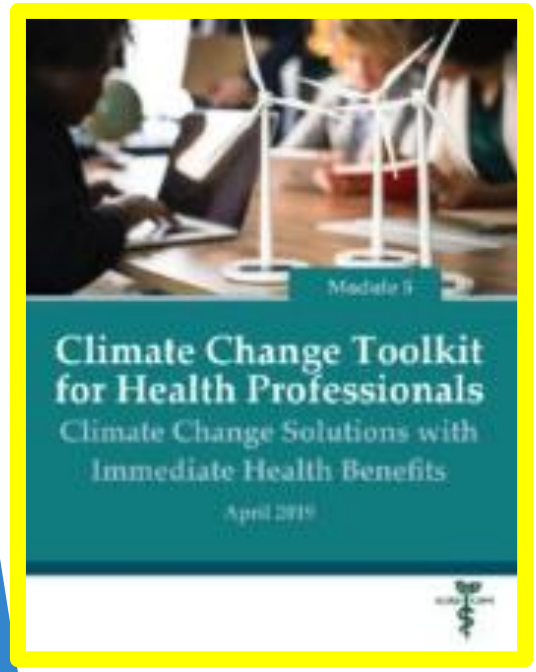


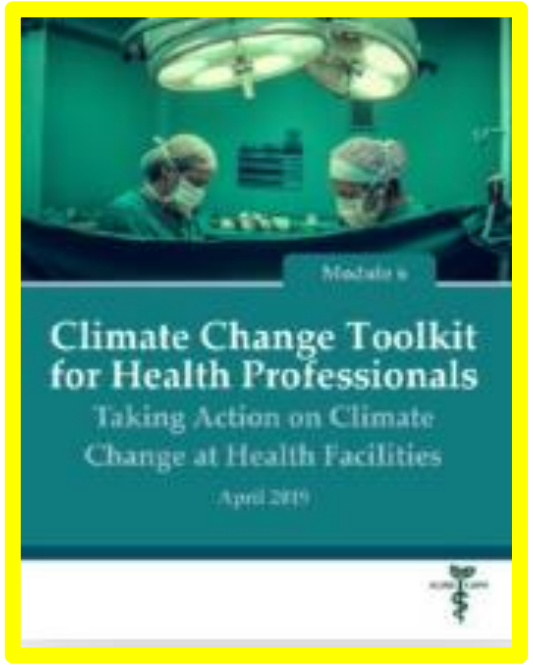

Module 1
Climate Change Toolkit for Health Professionals
Climate Change – Science, Drivers & Commitments
April 2019

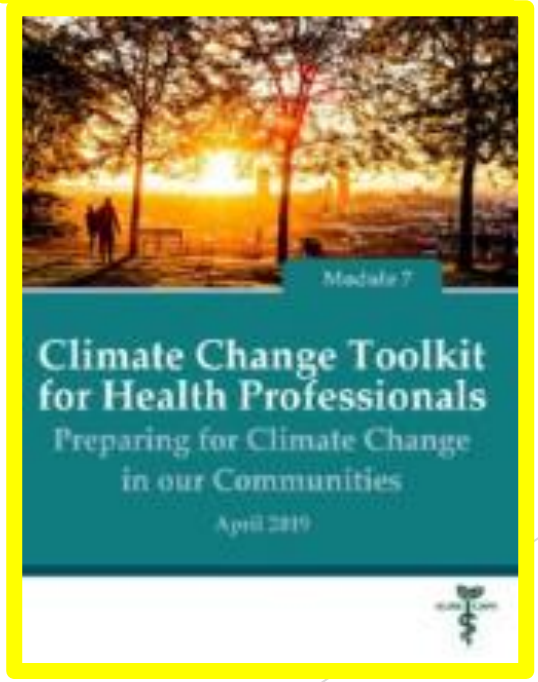

Module 2
Climate Change Toolkit for Health Professionals
Global Health Impacts of Climate Change
April 2019

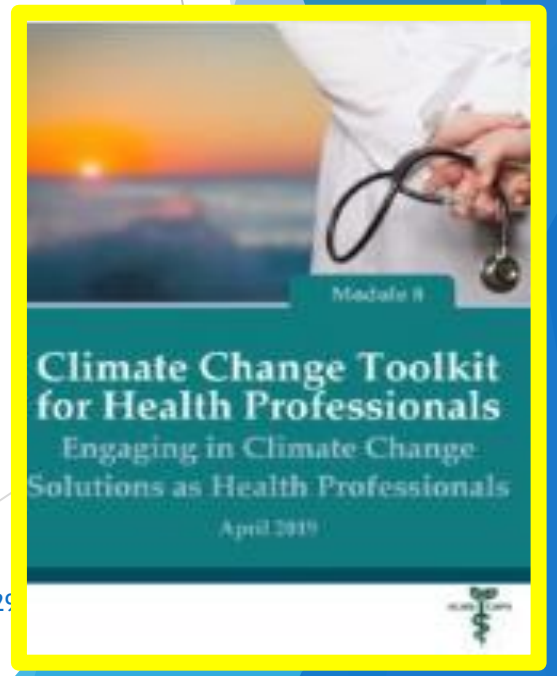

Module 3
Climate Change Toolkit for Health Professionals
Climate Change Health Impacts Across Canada
April 2019


Module 4
Climate Change Toolkit for Health Professionals
Greenhouse Gas Emissions in Canada by Sector and Region
April 2019


Module 5
Climate Change Toolkit for Health Professionals
Climate Change Solutions with Immediate Health Benefits
April 2019


Climate Change Toolkit for Health Professionals
Taking Action on Climate Change at Health Facilities
April 2019


Module 7
Climate Change Toolkit for Health Professionals
Preparing for Climate Change in our Communities
April 2019


Climate Change Toolkit for Health Professionals
Engaging in Climate Change Solutions as Health Professionals
April 2019

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