



Public Health Vulnerability to Climate Change in the Region of Peel

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Overview

Background

- Region of Peel Climate Change Strategy
- Assessing public health vulnerability
- Data used
- Lessons learned



Background – Peel Region

- 1.3 million residents – second largest in Ontario
- Growing rapidly
- Highly diverse – large newcomer to Canada population
- Ageing population
- Mixture - urban and rural land uses
- Significant natural features – Niagara Escarpment, Oak Ridges Moraine, Lake Ontario
- Significant economic base
- Busiest airport in Canada

Background- Climate Change Strategy

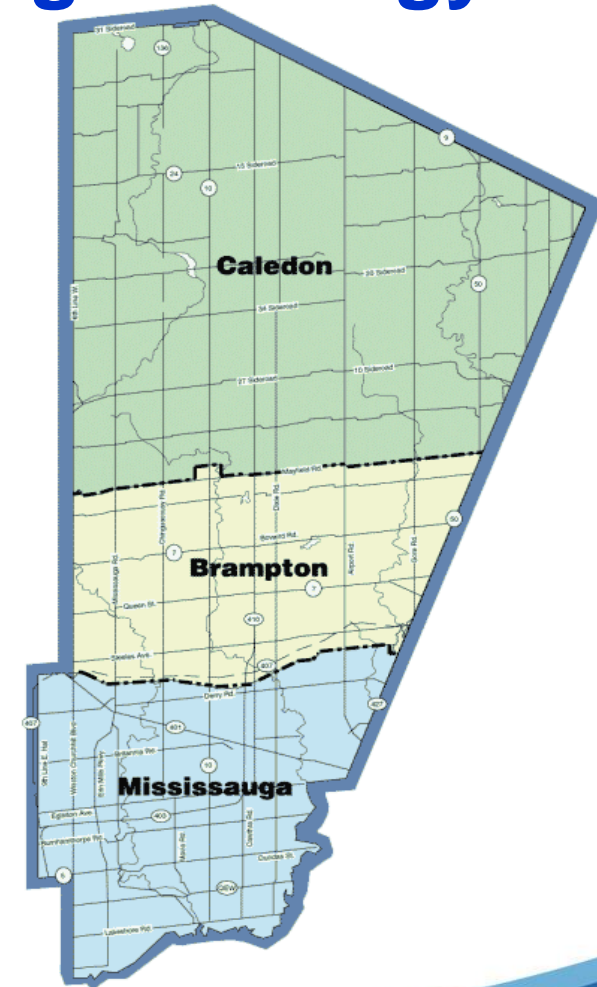
Partnership between:

- Brampton
- Mississauga
- Caledon
- Region of Peel
- Credit Valley Conservation
- Toronto and Region Conservation Authority

Peel Climate Change Strategy

Term of Council Priority

Peel Regional Council (2011-2014 / 2014-2018)



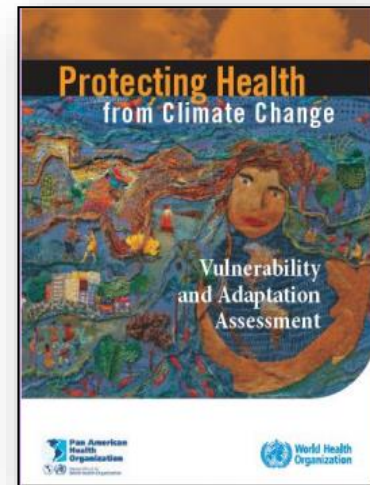
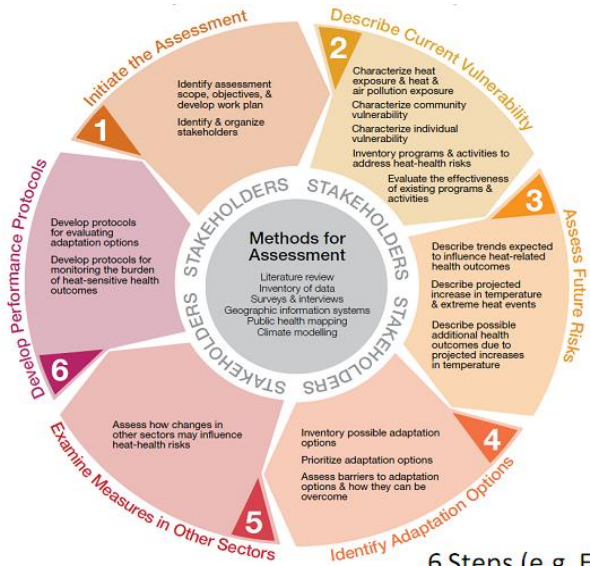
Objectives of the Public Health Vulnerability Assessment

- To identify key health indicators of current and future vulnerabilities
- To identify vulnerable populations and adaptive capacities
 - Demographics (age, education, SES)
 - Behaviour (i.e., air quality and outdoor exercise)
 - Housing
 - Access to services
 - Current programs
 - Regulations

Methods

Research Question

What are the key health indicators of current and future public health vulnerabilities to climate change in the Region of Peel?



Data Used

- Health Unit data
 - Surveillance data
 - Health status data
- Census data
 - Demographics
 - Population/dwelling counts
 - Canadian Community Health Survey



2008
A Picture of Health
A Comprehensive Report
on Health in Peel

Region of Peel
Working for you
make it better

Data Used

- Municipal data
 - Planning documents
 - Changing demographics
 - Growth
 - Shelter use
 - Long-term care centres
 - Infrastructure
 - Transit/transit for those with disabilities
 - Emergency preparedness
- Local Health Integration Network data

Data Used

- Conservation Authorities
 - Flooding
 - Number of dwellings in flood zones
 - Weather data
- Government of Canada data
 - PHAC – Lyme disease
 - Environment and Climate Change Canada
 - Health Canada
 - Natural Resources Canada

Findings

Potential to affect human health by:

- Increasing temperature related morbidity and mortality
- Exacerbating air quality and worsening of respiratory and cardiovascular conditions
- Increasing the risk of injuries and mortality from extreme weather and natural disasters/hazards
- Increasing food- and water-borne contamination
- Increasing the incidence of vector-borne disease

Key Findings:

- Most vulnerable:
 - seniors;
 - children;
 - those experiencing social isolation;
 - individuals with chronic conditions, disabilities or both;
 - socially or economically marginalized individuals.
- May worsen existing health inequalities by increasing the health burden on already vulnerable groups
- Peel's existing programs and services alone will not be able to address future health impacts from climate change

Outcomes of Vulnerability Assessment

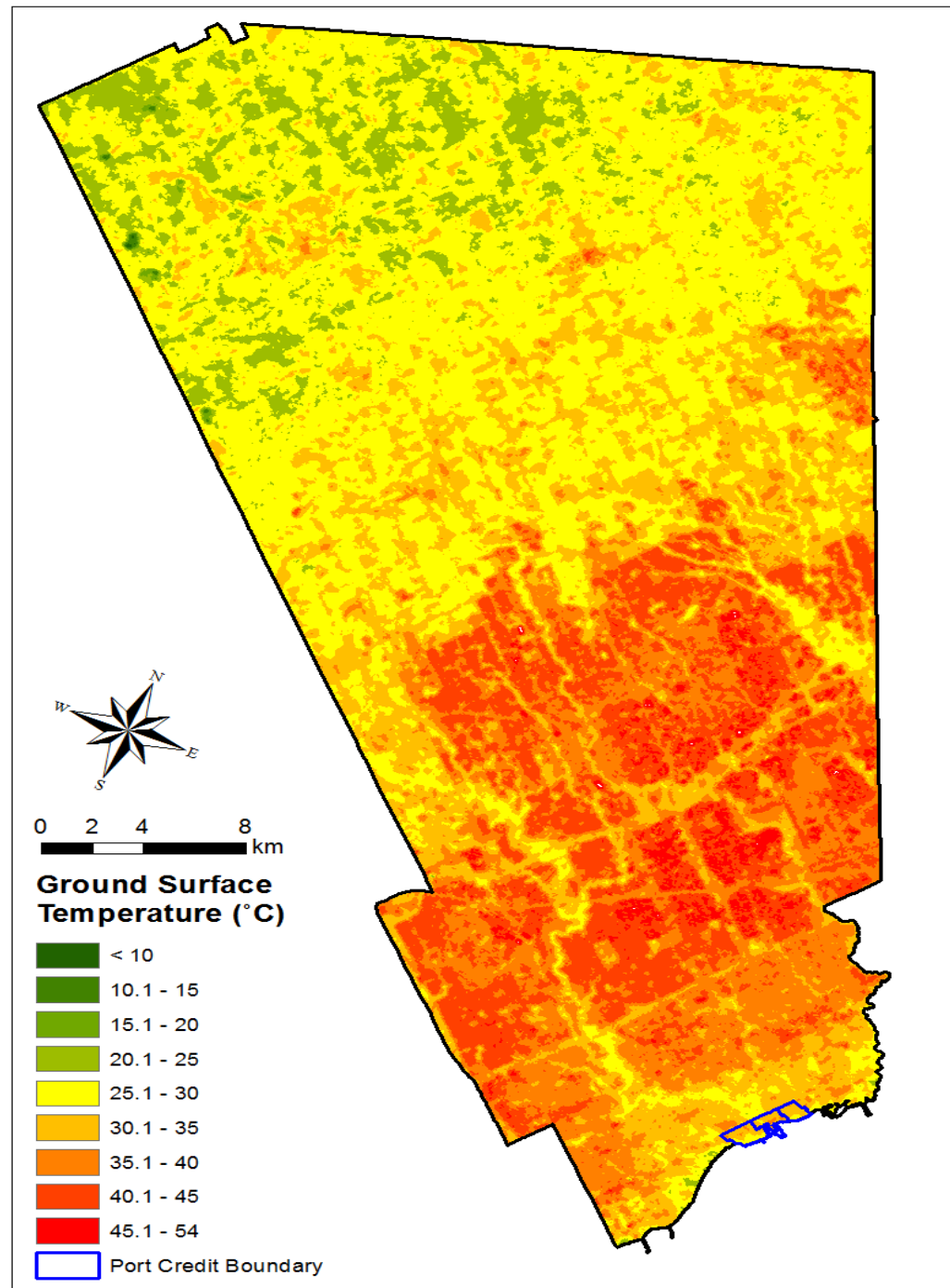
- Assessed our capacities
 - Response to Heat
 - Heat Response
 - Land use
 - Emergency Management

Key Findings - Heat

- Elderly people
 - 133,340 seniors in Peel (2011 Census)
 - 15,520 seniors live alone (2006 Census data)
 - 2031 – projected to have 294 880 seniors (over 20% of the population)
- Chronic Illness and Disability –
 - 47% of Peel residents report having at least one chronic illness
- Shelter use (2010)
 - Individuals (11, 920)
 - Youth (696)

Urban Heat Island Effect

Data from LandSat8
June 2015

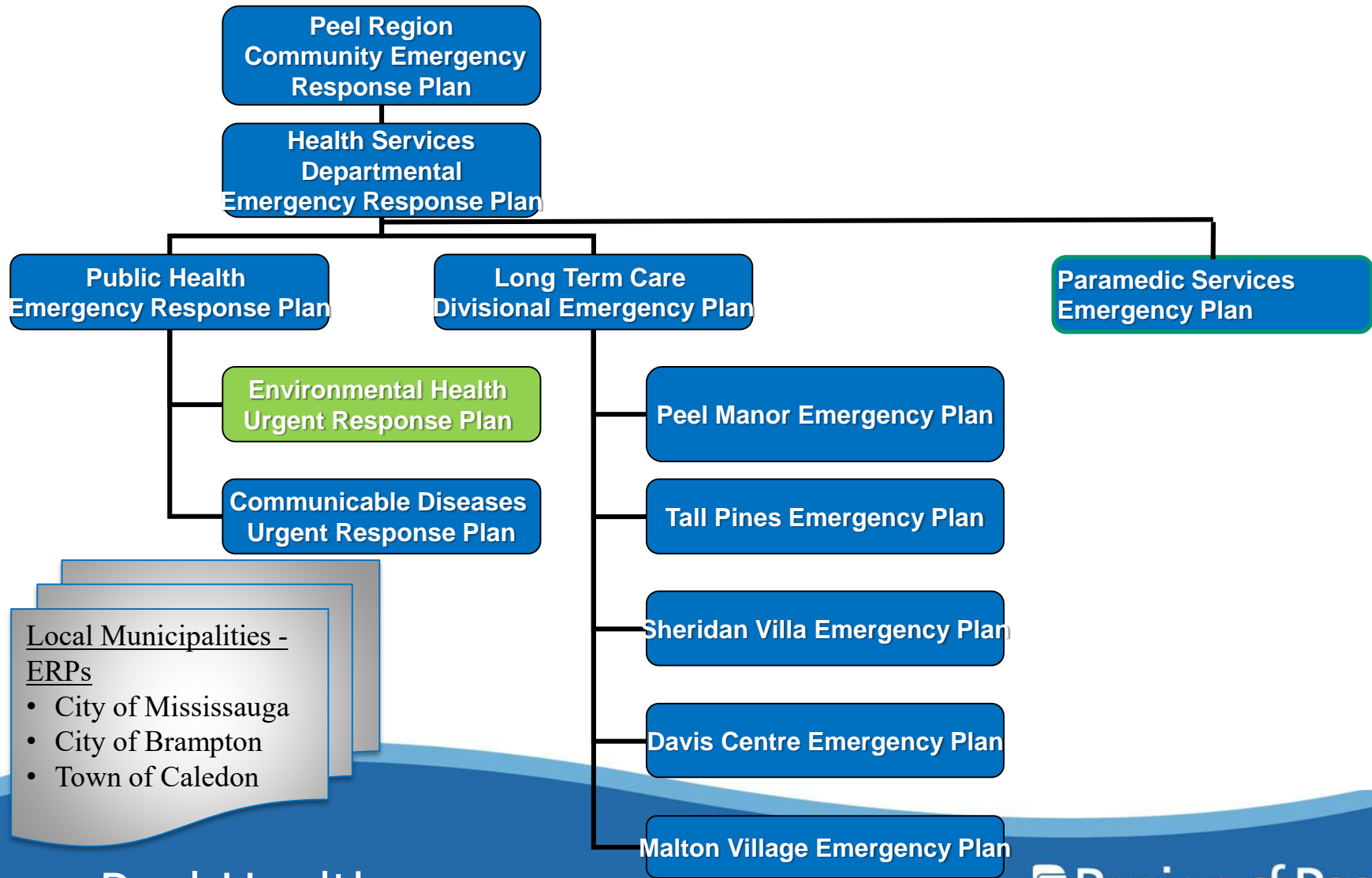


Peel Health

Priority Planting Areas to Grow Peel's Urban Forest

- Partnership between Region of Peel (Planning, Public Health), Conservation Authorities, Health Canada, area municipalities and York University
- Developed a GIS-based tool to identify and prioritize opportunities for planting in urban areas
- Interactive tool
- Allows users to combine up to 12 identified benefits including environmental, social and economic benefits
 - Urban Heat Island; air pollution; surface water quality and quantity; natural heritage; social equity; improved physical health

Peel Region Emergency Response Plans



Local Municipalities - ERPs

- City of Mississauga
- City of Brampton
- Town of Caledon

Peel Health

Urgent Response Planning

- Respond effectively, efficiently and in a timely manner
- To ensure appropriate resources to respond to an incident that **exceeds normal business hours, processes, capacity and/or resources**
- Facilitate communication with key stakeholders



Vulnerability Assessment Limitations

- Not all outcomes assessed:
 - Mental health; UV-related cancer; food security; occupational health and primary health services
- Data gaps (census data/identification of future risks)
- Rural/Urban distinctions
- Limited stakeholder engagement

Summary

- Extreme weather events will increase
- Link between extreme weather, planning and emergency management
- Natural systems have a unique role to play in both amplifying and dampening impacts
- Existing land use practices present challenges for water flow and increase the risk
- Community consultation needed to capture social/cultural aspects to inform programming and planning

Summary

- Existing programs alone may not be able to address future public health impacts from climate change.
- Further research is needed – documents need to be living documents
- Multi-disciplinary input necessary – planners/emergency management/engineers/public health/1st responders...
- Collaboration, partnerships critical
- The work to-date is being used to help spark dialogue and awareness of vulnerability

Next Steps

- Evaluation of the 2017 heat seasons completed;
- 2016 Census data will be released by November 19 2017
- Progress report to be drafted
- Re-run the VA with 2016 Census data and update other data
- Develop workplan
- Work with partner agencies on the Peel Climate Change Strategy implementation