



## STAFF REPORT ACTION REQUIRED

### Climate Change and Health Strategy for Toronto

<b>Date:</b>	June 12, 2015
<b>To:</b>	Board of Health
<b>From:</b>	Medical Officer of Health
<b>Wards:</b>	
<b>Reference Number:</b>	

#### **SUMMARY**

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Climate change represents an important health issue of current and future concern. Potential health impacts of climate change include increased incidence of heat/cold-related illness and premature death; severe weather resulting in direct impacts such as injury and indirect impacts such as water-borne diseases; increases in vector-borne diseases; food system impacts including food insecurity and food-borne illness, and degraded air quality increasing cardiovascular and respiratory illness.

Toronto Public Health's new *Climate Change and Health Strategy for Toronto* (see Attachment 1) identifies specific actions and sets out a direction to better understand and respond to the health effects of climate change. These actions will be further developed together with existing climate mitigation, adaptation and resilience activities already underway at the City.

The strategy recognizes that while the approach to addressing climate change health risks is broad, different assessment, analysis and engagement techniques need to be applied to specific health risks to address each one effectively. This report provides an overview of the Climate Change and Health Strategy as part of efforts to address the health impacts of climate change in Toronto.

#### **RECOMMENDATIONS**

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**The Medical Officer of Health recommends that:**

1. The Medical Officer of Health report by December 2016 on progress in implementing the Climate Change and Health Strategy;

2. The Board of Health forward this report to:
  - a) the Parks and Environment Sub-Committee on Climate Change Mitigation and Adaptation for their information;
  - b) the Ontario Minister of Environment and Climate Change and the Minister of Health and Long-Term Care and;
  - c) the Association of Local Public Health Agencies, Ontario Public Health Association, Ontario Registered Nurses Association, Ontario Medical Association, Toronto Atmospheric Fund, Toronto Environmental Alliance and the Toronto Central Local Health Integration Network.

### **Financial Impact**

There are no financial impacts arising from this report.

### **DECISION HISTORY**

On February 20, 2013, the report, *Toronto's Future Climate: Study Outcomes* was presented to Toronto City Council by the Environment and Energy Division. This report detailed projected changes in climatic conditions in Toronto for the period 2040-2049 including extreme weather events, notably rainfall and heat waves. It was intended to increase understanding of how a changing climate and extreme weather may impact public infrastructure and service provision. As a result of the findings, City Council requested that several City Divisions and agencies, including Toronto Public Health (TPH) identify key adaptations in their plans relating to core services moving forward. <http://www.toronto.ca/legdocs/mmis/2013/pe/bgrd/backgroundfile-55150.pdf>

On October 21, 2013, the Board of Health considered the report *Exploring Health and Social Impacts of Climate Change in Toronto* which highlighted the results of ongoing research to understand the wide ranging health impacts of climate change. <http://www.toronto.ca/legdocs/mmis/2013/hl/bgrd/backgroundfile-62786.pdf>

In November 2014, the Board of Health adopted *Toronto Public Health's Strategic Plan 2015- 2019, A Healthy City for All*. The plan articulates the priority directions and actions that will guide TPH's service delivery, policy and advocacy initiatives for the next five years. Actions include those that increase resilience to climate change impacts on health. <http://www.toronto.ca/legdocs/mmis/2014/hl/bgrd/backgroundfile-73622.pdf>

### **ISSUE BACKGROUND**

Climate change has been scientifically established as a global challenge with regional and local implications, including for the City of Toronto. Numerous research studies and reports completed by City staff and external experts have established the impacts the City is likely to face as a result of a changing climate. While the broad ranging impacts of climate change and extreme weather are expected to affect infrastructure and service provision, a wide range of specific health impacts exist as well.

A 2009 expert panel on climate change adaptation in Ontario concluded that in general, extreme weather events including rain, snow, drought, wind and ice storms are likely to increase, and noted that weather is also likely to be more variable and less predictable from one year to the next. Events like the July 8, 2013, record breaking rain storm which caused extensive flooding in parts of Toronto, as well the December 2013 ice storm are associated with both acute and chronic health effects. For example, heavy rainfall events can result in direct injury, but also have potentially negative health effects due to contaminated water, food safety and growth of harmful moulds.

Extreme rainfall increases the chance of flooding, which can affect beach water quality. Many parts of Toronto still have combined sewers, which collect sanitary sewage and stormwater runoff in a single pipe system. If the combined sewers are overwhelmed by large volumes of water flowing in, sewage can be released into the lake. Harmful bacteria in the sewage can make it more likely that swimmers or recreational lake users acquire infections or illnesses. Many Toronto beaches were unsuitable for swimming for up to a week after the July 8, 2013 storm.

Due to the changing climate, Toronto can expect a fivefold increase in three-day heat waves and an increased likelihood of a heat emergency with high mortality such as has occurred in large cities in other developed countries. Climate models suggest that by 2049, the annual average temperature will have increased by 4.4°C and there will be more than triple the number of days (approximately 60) with temperatures that exceed 30°C compared to historical conditions (2000 to 2009). Toronto Public Health estimates that heat contributes to an average of 120 premature deaths in the city each year, and that mortality related to heat could double by 2050 and triple by 2080.

Cold weather can also adversely affect the health and wellbeing of many Toronto residents. In particular, exposure to extreme cold weather can harm the health of vulnerable populations including homeless populations, the elderly, those with pre-existing heart conditions, and children. Climate change is associated with volatile swings in weather and while cold may become less common overall, unusual cold spells may occur more frequently. The number of Extreme Cold Weather Alerts has been higher in recent years. For the 2014/2015 winter season there were 39 Extreme Cold Weather Alerts issued by the Medical Officer of Health.

Another area in which climate change is anticipated to impact health is on the production, processing, distribution, storage, and consumption of food. For example, climate change could affect agriculture, the cost and supply of key food items and consequently the health of the Toronto population, in particular vulnerable, low income communities. Others concerns associated with food include the potential impact of weather-related power disruptions on the ability to safely store food and prevent food-borne illness.

Warmer weather patterns may also result in degraded air quality, as the hot weather conditions associated with climate change are also linked to increased ozone formation, a key component of smog. As outlined in the October 2011 report, *Healthy Toronto by Design*, a good transportation system is an essential element of a healthy city. While air

quality has improved in the last decade, air pollution still gives rise to around 1,300 premature deaths and 3,550 hospitalizations each year in Toronto. The transportation sector is the most important local source of air pollutants contributing to this burden of illness. Warmer weather and increased carbon dioxide in the air associated with climate change is expected to increase the production of pollen and potentially extend the pollen season. This may result in an increase in asthma attacks and seasonal allergies.

Another health issue associated with climate change is vector-borne disease. Warmer weather and longer summers are anticipated to expand the geographic range of some animals and insects that carry diseases, and increase the chance that they will survive the winter. In Ontario, this is expected to impact the *culex* mosquito which carries West Nile Virus as well as the black-legged tick, which harbours Lyme disease.

## COMMENTS

The attached *Climate Change and Health Strategy for Toronto* report identifies specific actions to better understand and respond to the health effects of climate change. It builds on existing work undertaken by TPH. It will guide a comprehensive response to climate change health issues for TPH over the time period of *TPH's Strategic Plan - "A Healthy City for All" (2015-2019)*.

The strategy addresses the following issue areas:

- Cold Weather
- Hot Weather
- Severe Weather
- Air Quality
- Built Environment
- Vector-borne Disease
- Water
- Food

The strategy also outlines a cross-cutting focus to address promotion of low-carbon interventions in the following areas: energy use, transportation systems, food systems and the built environment. The focus on low-carbon interventions is based on understanding the health co-benefits that result from reducing greenhouse gas emissions. The strategy also recognizes the need to explore how emerging issues associated with climate change may need to be considered.

A specific range of actions are identified in the strategy, including:

- Conduct an analysis of the relationship between extreme cold weather and adverse health impacts with a focus on vulnerable populations, including the homeless
- Investigate new and emerging research on health-based evidence for maximum indoor temperature standards
- Assess the acute and chronic health impacts, including mental health impacts of severe weather

- Investigate the impact of climate change on the current and projected health burden of asthma and allergies associated with pollen
- Promote the implementation of the Active City Principles to improve health and increase resilience
- Enhance public and health care provider education on preventing or seeking timely treatment for Lyme Disease, WNV, as well as other emerging vector-borne diseases
- Assess climate change risk to water and waste-water treatment facilities and associated health impacts
- Assess the impact of climate change on food safety (e.g. changes in the burden of food-borne disease), food security and sustainability.

These actions will be further developed together with existing climate mitigation, adaptation and resilience activities already underway at the City. These include collaboration with the Energy and Environment Division and the Toronto Atmospheric Fund to quantify the local health benefits associated with carbon reduction scenarios. This is recognized as essential if Toronto is to meet its goal of reducing greenhouse gas emissions by 80% by 2050, as part of the Transformation Toronto 2050 initiative.

The strategy outlines key areas where TPH will work to engage key stakeholders and communities to address climate change health effects. This work will include efforts to develop or enhance partnerships with community agencies to better understand the impacts of climate change and extreme weather on the health of specific groups and populations. Toronto Public Health will continue to participate in ongoing City initiatives including the Resilient City Working Group to further develop partnerships on key programs focused on vulnerable populations.

## **CONTACT**

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## **SIGNATURE**

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Dr. David McKeown  
 Medical Officer of Health

## **ATTACHMENTS**

Attachment 1:  
 A Climate of Concern: Climate Change and Health Strategy for Toronto 2015