

**Report to
Rapport au:**

**Ottawa Board of Health
Conseil de santé d'Ottawa
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**Submitted by
Soumis par:**

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Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE File Number: ACS2019-OPH-HPS-0002

SUBJECT: OTTAWA PUBLIC HEALTH WORK ON CLIMATE CHANGE

OBJET: TRAVAIL DE SANTÉ PUBLIQUE OTTAWA SUR LE CHANGEMENT CLIMATIQUE

REPORT RECOMMENDATION

That the Board of Health for the City of Ottawa Health Unit receive, for information, an overview of Ottawa Public Health's activities in support of climate action, as outlined in this report.

RECOMMANDATION DU RAPPORT

Que le Conseil de santé de la circonscription sanitaire de la ville d'Ottawa prenne connaissance de la présentation générale des activités de Santé publique Ottawa en matière de changements climatiques figurant dans le présent rapport.

BACKGROUND

Climate change is resulting in impacts across the globe, including in Canada. Environment and Climate Change Canada stated that Canada's rate of warming is about twice the global rate, and Canada's north is warming at more than double the global rate. Ontario has experienced warming and more frequent extreme heat waves, droughts, windstorms, torrential rain events, and flooding.^{i,ii,iii,iv} Some recent examples of such impacts in Ottawa include:

- a **prolonged extreme heat event** that lasted six-days in July 2018 that impacted vulnerable residents, especially people who do not have access to air conditioning, outdoor workers and people with pre-existing chronic health conditions;
- **flooding events** in the spring of 2017 and 2019 that resulted in extensive property damage impacting over 200 and 350 homes, respectively^v;
- a storm with 2 **tornadoes** in September 2018 that touched down in the Dunrobin area (EF-3 class) and in the Arlington Woods / Craig Henry and Greenboro neighbourhoods (EF-2) resulting in considerable damage. A hydro transformer station was destroyed, leading to power outages that impacted 171,000 customers. There was significant damage to homes and property;^{vi,vii} and
- increased rates of **vector borne diseases due to the** expanded range of the blacklegged tick and Culex mosquito populations, leading to an [increased number of human infections](#) of Borrelia burgdorferi (Lyme disease) and West Nile virus respectively. Ottawa has become an endemic area for ticks that carry Lyme disease.

The health impacts from climate change in Ontario and Ottawa are anticipated to be significant and include^{viii}:

- more heat-related illness and respiratory and cardiovascular disorders due to rising temperatures and reduced air quality;
- increased risk of vector-borne diseases transmitted by mosquitoes and ticks due to rising summer temperatures, shorter winters, ecological changes, and increased human exposure;
- increased risk of food and waterborne illnesses;
- injury, illness or loss of life due to damage and weakening of infrastructure from extreme weather events such as flooding, ice and windstorms;

- displaced people due to flooding and forest fires^{ix,x,xi}; and
- mental health impacts from climate change^{xii}.

In 2016, 186 countries, including Canada, became party to the United Nation's (UN) Paris Agreement with the goals of fighting climate change, limiting global temperature increases to less than 2°C above pre-industrial levels, and striving to limit the increase even further to 1.5°C.^{xiii} In 2018, the UN's Intergovernmental Panel on Climate Change acknowledged that to limit global warming to 1.5°C and avoid catastrophic impacts, the world has 11 years to reduce its greenhouse gases (GHGs)^{xiv}. This urgency was echoed by the World Health Organization (WHO), which stated that "Climate change is the greatest threat to global health in the 21st Century"^{xv}. The WHO recognized that the public health sector's work is key to protecting people from climate impacts. In April 2019, the City of Ottawa declared a Climate Emergency for the purposes of naming, framing, and deepening its commitment to protecting its economy, its ecosystems, and its community from climate change.

Mitigating and adapting to climate change will require unprecedented action, both globally and locally. The City of Ottawa will provide an integrated plan to address climate change that will span both the corporation and the community-at-large and will describe the cumulative actions required to achieve the City's greenhouse gas emissions reduction targets. As Ottawa Public Health (OPH) relies on the City for facilities, fleet, etc., and seeks to contribute to City-wide efforts, OPH will contribute to the City's work on mitigation and adaptation.

Additionally, the City of Ottawa and the National Capital Commission (NCC) are working together on the development of local climate projections to obtain a finer analysis of the climate changes and impacts occurring locally, and to understand the impacts on different sectors, with the intent of informing vulnerability assessments. This includes working with OPH to assess vulnerability with respect to health impacts. This work will lead to a local Climate Resiliency Strategy.

OPH's work to address climate change is based on surveillance of health impacts on Ottawa's population, including information gained from partnering service providers, about populations at greatest risk of harm. Information gathered as part of this surveillance system informs OPH activities to help the population mitigate and adapt to climate change.

DISCUSSION

For a number of years, OPH has contributed a health lens to the City of Ottawa's plans, policies and activities as they relate to climate change.

More recently, through the Ontario Public Health Standards (OPHS), the province mandated public health units to work on climate change. The Healthy Environments Program Standard aims to reduce exposure to health hazards and promote the development of healthy built and natural environments. The standard also requires OPH to work with others to mitigate and help with adaptation to existing and emerging risks, including the impacts of a changing climate. Provincial requirements include:

- identifying risk factors through environmental surveillance and epidemiological analysis, priority health needs, and health impacts associated with climate change to inform activities and programs;
- collaborating with community partners to develop effective strategies to reduce exposure to health hazards associated with climate change and promote healthy natural and built environments;
- implementing public health interventions to reduce exposures to health hazards, including climate change mitigation and adaptation actions;
- developing communication strategies to address local needs about climate change to ensure the public and stakeholders are aware of the links between their actions and climate change; and
- engaging in community and multi-sectoral collaboration with municipal and other relevant partners to promote healthy built and natural environments.

OPH's latest Board-approved strategic plan "[Protecting our Community's Health](#)" reinforces this work as a priority in Ottawa. One of OPH's strategic directions is to influence the social and physical environments that support health and well-being, including a goal to support healthy communities by design. This direction addresses the leading causes of death in Canada, such as diabetes, heart disease and cancer. These diseases are linked to physical inactivity, unhealthy eating, and obesity, which are all influenced by the built environment. Additionally, mental health challenges (social isolation, loneliness) are rising, extreme weather impacts are increasingly being felt (hospitalizations, deaths), and motor vehicle-related issues are more significant (traffic-related air pollution, injuries, deaths). The work to promote healthy land use and transportation systems that help reduce driving and promote sustainable transportation are key^{xvi} not only to directly promote health, but also to promote health by mitigating climate change.

As health care is one of the biggest provincial expenditures and the built and natural environment are two key determinants of a person's health; applying a health lens to community building and planning is also a critical approach for sustainability of the health care system.

An important policy lever to achieve healthier built and natural environments is the Official Plan. The City of Ottawa is creating a new Official Plan, which is a strategic document that describes how the city will grow over time, guiding land use and transportation development and the evolution of communities. One of the [Preliminary Policy Directions](#) for the Plan focuses on resiliency and suggests that a climate, energy and public health lens be embedded. This would be an integrated approach to planning that recognizes the adverse health impacts of climate change and the role of the built environment as an important mechanism for mitigating and adapting to emerging health challenges.

In addition to City land use and transportation plans, there are many other public health areas of work that contribute to mitigating and adapting to climate change. To demonstrate the breadth of activities on climate change that OPH engages in, below presents an adapted framework from the [WHO on building climate resilient health systems](#) and corresponding OPH activities.

Leadership and governance

- The Board of Health approved the [2019-2022 Strategy](#) "Protecting our Community's Health", which includes a strategic direction to influence the social and physical environments that support health and wellbeing and an annual goal to support healthy communities by design. This work includes identifying approaches and strategies to reduce greenhouse gas emissions (GHGs) generated by OPH work.
- The Board of Health is overseeing compliance with the [Healthy Environments and Climate Change Guideline](#), Ontario Public Health Standard.
- A Board of Health Member brings a health perspective to City Council's Sponsor Group advancing the [City of Ottawa climate emergency declaration](#) (April 2019).

Public health communication strategies to create awareness of climate change impacts on public health

- OPH will continue to develop and implement public health communication strategies to help residents understand the local risks associated with climate change and support public actions to reduce GHG emissions and advance mitigation and

adaptation strategies to climate change. This includes messages related to [outdoor air quality](#), [extreme heat](#) and [cold](#), [vector-borne diseases](#), severe weather, water and food quality and quantity, increasing allergens, environmental degradation, and mental health.

- OPH will enhance its existing web-based resources, including on [Health and the Built Environment](#), and develop and development of strategies that engage the public, such as has been done with OPH's [healthy communities' videos](#).

Climate-informed health policies

- OPH is participating in the development of the City's [new Official Plan](#) and Master Plans to address climate change and embed healthy public policy in these plans to mitigate health impacts such as through active transportation and shade policies.
- Two (2) OPH employees are co-locating with the Planning, Infrastructure, and Economic Development Department to enhance and influence healthy public policy and pursue healthy built and natural environments that include mitigation and adaptation to climate change.
- OPH is working to influence healthy built environment through policies, programs and activities such as providing input into the [Urban Forest Management Plan](#) and commenting on development review applications.
- OPH supports climate-related action by community stakeholders (i.e. school boards, daycares and City departments) through assisting with reviewing their extreme weather policies.
- OPH works with service providers for residents vulnerable to climate change impacts to develop plans, policies and contingency plans. This includes leading the City of Ottawa Interagency Extreme Weather Committee and Plan and the Ottawa Public Health Emergency Plan.

Vulnerability, capacity & adaptation assessment

- OPH contributed to the [2014 City of Ottawa Air Quality and Climate Change Management Plan](#) with a chapter on the [public health implications of climate change](#) and is supporting its upcoming review and update.
- OPH reported on reducing the health risks from extreme heat events: Assessing vulnerability in the City of Ottawa (2013).

- OPH conducted “Ottawa Hotspot 2015” - a Tabletop exercise for responding to extreme heat events in Ottawa with community stakeholders and put on capacity building workshops and information sessions for OPH staff and community stakeholders for responding to extreme heat events (2013 and 2016).
- OPH will conduct a climate change and health vulnerability assessment based on Ottawa-specific climate projections data developed in partnership with the City and the National Capital Commission. This will culminate in climate change adaptation strategies and measures to help track progress towards implementation of a Climate Resiliency Strategy for the City of Ottawa.

Integrated risk monitoring & early warning

- OPH monitors environmental conditions (i.e. extreme heat and cold events, air quality, hazardous algal blooms, drinking water quality).
- OPH conducts syndromic surveillance of climate-related health conditions (heat-related illnesses, vector-borne diseases, injuries associated with extreme weather events) to ensure preventive actions are in place to protect human health.
- OPH developed, maintains and evaluates the City of Ottawa Interagency Extreme Weather Plan that is a coordinated response to extreme heat, cold and poor air quality events in Ottawa. The plan ensures integration of prevention, mitigation and preparedness via risk monitoring and early warning to inform local service providers and partners in health and emergency management to guide their actions as an early intervention.

Health and climate research / Evidence generation

- OPH helped integrate health information into the City’s [Beyond 2036 Report](#), which explores scenarios describing the plausible impacts from forces that will influence the city over the coming decades.
- OPH is supporting the development of [Energy Evolution](#), a corporate and community strategy to reduce GHG emissions by 80% by 2050, as directed by Council.
- OPH supported comments on the draft 2019 Provincial Policy Statement on land use planning, which provides provincial planning policy direction on the efficient use and management of land and infrastructure.
- OPH is preparing to conduct a survey of Ottawa residents to better understand their knowledge and perceptions on climate change and its impacts in Ottawa (Rapid Risk

Factor Surveillance System Survey, April 2020), to inform public education and other OPH actions.

- Ottawa was a pilot city in the Commission for Environmental Cooperation 2016 pilot project “[Helping North American Communities Adapt to Climate Change: A pilot syndromic surveillance system for extreme heat events](#)” that enhanced our ability to see early impacts of extreme heat events through enhanced urban heat island mapping and monitoring of Telehealth Ontario call data to existing emergency room visits.
- OPH is collaborating with the Canadian Health Adaptations, Innovations & Mobilization (CHAIM) Centre at Carleton University on healthy built environment, air quality and climate change issues.

Climate resilient, sustainable technologies and infrastructure

- OPH is encouraging a high efficiency building performance standard that includes use of technologies such as green and white roofs, and other low impact development initiatives.

Emergency preparedness & management

- The OPH Emergency Plan, Continuity of Operations Plan, Drinking Water Advisory Plan and Emergency Priority Populations Plans are renewed annually to ensure OPH is prepared to respond to emergencies.
- OPH provides resources, expertise and staff to City-wide severe weather events such as flooding and wind storms. In 2018 and 2019, OPH staff conducted over 3,000 wellness visits following windstorms, flooding and subsequent power outage events.
- OPH continues to work with community and City partners to support an enhanced network of partners capable of responding to climate emergencies.
- OPH contributes to climate change mitigation, adaptation, and resiliency strategies that include a health equity lens to ensure populations with less resiliency/resources are supported.

Changes to vector ecology

- OPH continues to implementation prevention programs related to vector borne diseases including arranging for the application of larvicide in catch basins and other mosquito breeding reservoirs in the City.

Water and food quality and supply impacts

- OPH works to enhance individuals' food literacy, promotion of strategies and exploration of opportunities to reduce food and packaging waste, in both households and City buildings, to help reduce greenhouse gases.
- OPH works to enhance awareness with respect to food and water borne illnesses and the impacts climate change will have on food and water quality.

Next Steps

OPH will provide regular updates on its strategic direction to influence the social and physical environments that support health and well-being, including actions related to addressing climate change.

RURAL IMPLICATIONS

There are no rural implications associated with this report. OPH's activities in support of climate action are aimed at the City as a whole.

CONSULTATION

The Climate Change Resiliency Unit from the Planning, Infrastructure and Economic Development Department of the City of Ottawa was consulted in the development and writing of the report.

LEGAL IMPLICATIONS

There are no legal impediments to receiving this report for information.

RISK MANAGEMENT IMPLICATIONS

There are no risk management implications associated with this report.

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

ACCESSIBILITY IMPACTS

There are no direct accessibility impacts associated with this report.

ENVIRONMENTAL IMPLICATIONS

As described in the report, OPH will continue to work with partners to identify and reduce the health impacts from climate change. For further information regarding environmental implications see report.

DISPOSITION

This is provided for the Board of Health's information.

ⁱ Bush E, Lemmen DS, eds. *Canada's Changing Climate Report*. Ottawa, ON: Government of Canada; 2019. <https://changingclimate.ca/CCCR2019/>

ⁱⁱ Gough W, Anderson V, Herod K. *Ontario Climate Change and Health Modelling Study—Report*. Toronto, ON, Canada: Ministry of Health and Long-Term Care Public Health Policy and Programs Branch;2016.

ⁱⁱⁱ Ministry of the Environment Conservation and Parks. *Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan*: Government of Ontario; 2019.

^{iv} Ontario Climate Change and Health Modelling Study Report
http://www.health.gov.on.ca/en/common/ministry/publications/reports/climate_change_toolkit/climate_change_health_modelling_study.pdf

^v Personal communication from Steve Kanellakos to City of Ottawa staff in 2017 and 2019 on lifting state of Emergency.

^{vi} CTV News. Environment Canada: 6 tornadoes hit Ottawa area last Friday. CTV News. September 25, 2018. <https://www.ctvnews.ca/canada/environment-canada-6-tornadoes-hit-ottawa-area-last-friday-1.4108217>

^{vii} City of Ottawa. 2018. Security and Emergency Management Report to Community Protective Services Committee.

^{viii} Ontario Climate Change and Health Modelling Study Report.
http://www.health.gov.on.ca/en/common/ministry/publications/reports/climate_change_toolkit/climate_change_health_modelling_study.pdf

^{ix} CBC News. Worrisome flood forecast has Kashechewan preparing for annual evacuation. CBC News. April 9, 2019, 2019.

^x The Canadian Press. Wildfire threat prompts evacuations in northern Ontario. CBC News. July 21, 2018, 2018.

^{xi} CBC News. Smoke from forest fire near Kenora, Ont., prompts evacuation of Wabaseemoong F.N. CBC News. July 20, 2018, 2018.

^{xii} Hayes, K, Blashki, G, Wiseman, J, Burke, S, and L. Reifels. Climate change and mental health: risks, impacts and priority actions. *Journal of Mental Health Systems*. 2018; 12: 28.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5984805/>

^{xiii} UNFCCC. The Paris Agreement. <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

^{xiv} IPCC, 2018: Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. In Press. <https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/>

^{xv} World Health Organization (COP24 special report: health and climate change. Geneva: World Health Organization; 2018. License: CC BY-NC-SA 3.0 IGO. <https://www.who.int/globalchange/global-campaign/cop21/en/>

^{xvi} Planning, Infrastructure and Economic Development. New Official Plan – High Level Policy Directions. Joint Planning Committee and Agriculture and Rural Affairs Committee. Available from: <https://app05.ottawa.ca/sirepub/cache/2/5j0bxzhisxfud05lqxi304kg/59722109032019041942249.PDF>