



Public Health
Santé publique
SUDBURY & DISTRICTS



CITY OF GREATER SUDBURY

HOT WEATHER RESPONSE PLAN

This document is available in accessible formats upon request.

Version 1.6

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Emergency Preparedness Préparation aux situations d'urgence
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Reviewed: November 2023

Revision History

Revision Number	Description of Revision	Effective Date
1.2		August 2007
1.3		May 2010
1.4	Plan revised to align with Environment and Climate Change Canada Extreme Heat Event Guidelines and Ministry of Health and Long-Term Care Harmonized Heat Warning and Information System for Ontario	July 2016
1.5	Plan revised to reflect new name of organization – Public Health Sudbury & Districts	June 2018
1.6	Plan revised to update introduction to reflect climate change trends, remove specific community partner/organization names (Red Cross and Salvation Army) noted with potable water distribution to vulnerable populations, updated level two municipal offerings, general housekeeping updates	November 2023

Reference Document/Legislation

Document Title		Legislation	
Title	Source	Name	Section
A Harmonized Heat Warning and Information System for Ontario (HWIS) Standard Operating Practice, Ministry of Health and Long-Term Care, June 2023			
Ontario Provincial Climate Change Impact Assessment Technical Report January 2023			
Canada's Climate Changing Report, released as part of Canada in a Changing Climate: Advancing our Knowledge for Action	https://changingclimate.ca/CCCR2019/		

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Introduction

Canada continues to experience climate warming, with the frequency, severity and duration of extreme weather events expected to continue to increase. In the last 70 years, annual temperatures have increased 1.9 °C in Canada and 1.2 °C globally. The number of +30 °C days over the next 30 years is anticipated to triple those dating back 30-40 years.

In 2023, Greater Sudbury experienced seven days under a heat warning. The Ontario Provincial Climate Change Impact Assessment Technical Report anticipates Northeast and Northwest Ontario will see temperatures from 3.8 and 4.1 days now rise to over 35 days per year, on average, with impacts felt in the far North, Northwest and Northeastern Ontario despite the absolute numbers being lower compared to Southern Ontario. The report goes on to predict that by the 2080s, major cities like Sudbury could see as many as 55 days a year with temperatures over 30 degrees, in comparison to the 10 days being experienced now.

There is strong consensus in the scientific community that climate change is occurring and that average global temperatures will rise substantially during this century. Global warming is anticipated to increase the number of air pollution and heat-related deaths worldwide. Cities around the world are moving to develop heat-health warning systems and public health response plans.

Extreme heat impacts different people in different ways, depending on their age, underlying medical conditions and how well they are acclimatized to hot conditions. Exposure to extreme heat over prolonged periods of time without access to cooling intervals (such as typically occur at night) makes it hard for the human body to maintain a consistent internal temperature. This stress can result in a rise of internal temperature, and/or increased stress on respiratory and circulatory systems. Either circumstance can result in related health problems or death. Even a short break from the extreme heat helps to reduce this stress.

Research studies show that socially isolated seniors are at highest risk of heat-related morbidity and mortality. Other at-risk groups include infants and young children, pregnant women, people who work or exercise in the heat, people who use alcohol or illicit drugs, and people with chronic illness. As well, people who are homeless and low-income earners have less ability to protect themselves from the heat.

The City of Greater Sudbury (CGS) and Public Health Sudbury & Districts (PHSD) have collaborated to develop a Hot Weather Response Plan (HWRP) for Greater Sudbury.

The HWRP is intended to alert those most at risk of heat-related illness that hot weather conditions are either imminent or currently exist and to take appropriate precautions.

The best defense against heat-related illness is prevention: staying cool, drinking fluids, moderating physical activities and wearing loose, light-coloured clothing.

PHSD annually reviews and revises a number of educational materials that outline general precautions to take during hot weather. These bilingual materials are widely distributed to the public, and to community organizations including clinics, daycares, long-term care facilities, seniors' residences, health care professionals, religious institutions, sports and recreational facilities, food banks, playground associations, school boards and Indigenous groups. Moreover, this information is also available electronically on the CGS and PHSD websites.

Sources:

Temperature Change in Canada –
<https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/temperature-change.html>

Canada's top 10 weather stories of 2022 –
<https://www.canada.ca/en/environment-climate-change/services/top-ten-weather-stories/2022.html>

Essential Components

The essential components of such initiatives include public education and preparedness, public warnings and response action plans.

Public Education:

- Beat the Heat Campaign
- Website – CGS and PHSD
- Social Media – CGS and PHSD
- Brochures and publications
- Public media messaging

Monitoring:

- Monitoring of weather forecasts
- Identifying weather situations that adversely affect human health

Response:

- Implementing mechanisms for issuing warnings when a weather situation is forecasted which could adversely affect health
- Promoting public health activities to prevent heat-related illness and death
- Increased community outreach
- Increased surveillance
- Dissemination of educational material
- Distribution of potable water to high-risk populations
- Identify potentially dangerous situations
- Opening of cooling centres when appropriate
- Provision of bus transportation to cooling centres

Objectives

The objectives of the HWRP are:

- To ensure that all agencies working with vulnerable groups are provided with information on what precautions to take when temperatures reach extreme levels
- To coordinate a community response when temperatures reach extreme levels
- To ensure that high-risk populations are cared for when temperatures reach extreme levels
- To provide cooling centres when appropriate
- To activate the City's Emergency Response Plan when appropriate

Roles and Responsibilities

Public Health Sudbury & Districts will:

- Provide public education
- Determine activation of HWRP
- Notify CGS for dissemination of the activation through the CGS communication network
- Determine deactivation of the HWRP at level 2 and level 3, in conjunction with the CGS

Every day between May 15 and October 15, PHSD monitors weather data from Environment and Climate Change Canada, including temperature and humidex for the City of Greater Sudbury. Additionally, PHSD receives notification from Environment and Climate Change Canada when Heat Warnings will be issued based on forecasted temperatures.

Forecasted daily temperatures and humidex values are compared to the following thresholds to determine the appropriate heat warning level under which the city should be placed.

Level	Advisory Status	Threshold
1	Heat Warning*	Forecasted humidex of ≥ 36 for at least 2 consecutive days (48 hrs) OR $T_{max}^{**} \geq 29^{\circ}\text{C}$ and $T_{min}^{**} \geq 18^{\circ}\text{C}$ for at least 2 consecutive days (48 hrs)
2	Extended Heat Warning*	Forecasted humidex of ≥ 36 for 3+ consecutive days (72+ hrs) OR $T_{max}^{**} \geq 29^{\circ}\text{C}$ and $T_{min}^{**} \geq 18^{\circ}\text{C}$ for 3+ consecutive days (72+ hrs)
	Heat Alert	Forecasted humidex of 40 for at least 2 consecutive days (48 hrs)
3	Extreme Heat Alert	Forecasted humidex of 40 for 3+ consecutive days (72+ hrs) OR Forecasted humidex of 45 for at least 2 consecutive days (48 hrs)

*Environment and Climate Change Canada Guidelines

** T_{max} represents maximum daily temperature. T_{min} represents minimum nighttime temperature.

Procedure

Following confirmation by the Medical Officer of Health, the advisory status is declared, and the activation procedures set forth in this response plan are followed.

The City of Greater Sudbury will:

- Notify its community partners and health care agencies by email through its communication network that the plan has been activated
- Open cooling centres when appropriate
- Extend hours of supervision at public beaches

Activation of the Hot Weather Response Plan

The following actions are taken following declaration of a heat warning or heat alert:

Level 1 – Heat Warning

- PHSD notifies CGS Emergency Management (EM) of the declaration
- CGS EM notifies all community heat response partners, CGS stakeholders, and the Community Control Group
- PHSD issues a news release that includes the following information:
 - Heat warning issued
 - The criteria upon which the warning is based
 - General information on heat-related health effects
 - Recommended protective measures for the public
 - Recommended preventive measures for the public where applicable
 - Means by which to obtain additional information
 - Emphasis on the need for citizens to check in on friends, family and neighbours who may be vulnerable to the heat, and may need assistance in implementing recommended protective actions
- PHSD responds to health-related media requests and posts news release on the PHSD website
- CGS posts news release on the city's website and shares on social media platforms

Level 2 – Extended Heat Warning or Heat Alert

- All actions listed in Level 1 continue
- News release regarding Extended Heat Warning or Heat Alert released by PHSD
- News release may be released by CGS regarding CGS response
- Meeting of CGS stakeholders to occur to discuss implementation of any or all of the following additional actions:

- Distribution of potable water to vulnerable populations in conjunction with community partners
- Expanding location and hours of operation of public swims at city pools
- Requesting that local utilities halt all service cancellations until after heat warning has passed
- Extending hours of operation and supervision at municipal beaches
- Promoting hours and locations of local splash pads
- Opening cooling centers may be available at the following municipal community centres/arenas, libraries and Citizen Service Centres:
 - Capreol Community Centre and Arena
 - Centennial Community Centre and Arena in Hanmer
 - Chelmsford Community Centre and Arena
 - Dr. Edgar Leclair Community Centre and Arena in Azilda
 - Garson Community Centre and Arena
 - Gerry McCrory Countryside Sports Complex
 - McClelland Community Centre and Arena in Copper Cliff
 - T.M. Davies Community Centre and Arena in Lively
 - Azilda Gilles Pelland Public Library
 - Capreol Public Library and Citizen Service Centre
 - Chelmsford Public Library and Citizen Service Centre
 - Coniston Public Library
 - Copper Cliff Public Library
 - Dowling Public Library
 - Garson Public Library and Citizen Service Centres
 - Levack / Onaping Public Library
 - Lively Public Library and Citizen Service Centre
 - Main Public Library
 - New Sudbury Public Library
 - South End Public Library
 - Valley East Public Library and Citizen Service Centre

Level 3 – Extreme Heat Alert

- All actions listed in Level 1 and Level 2 continue
- News release regarding Extreme Heat Alert released by PHSD
- News release may be released by CGS regarding CGS response
- CGS may implement any or all of the following additional actions if appropriate:
 - Activation of CGS Municipal Emergency Response Plan
 - Notification of the Community Control Group
 - Consideration of extending hours at cooling centres to 24 hours a day
 - The City may offer free bus service by GOVA to cooling centres
- Increase public outreach using additional resources such as:
 - Police
 - Postal workers on rounds

- Utility staff
- Broader distribution of water

Deactivation of the Hot Weather Response Plan

There is no deactivation of a Level 1 Heat Warning.

PHSD, in consultation with CGS, is responsible for declaring the end of a Level 2 Extended Heat Warning/Heat Alert, and a Level 3 Extreme Heat Alert.

Deactivation of the HWRP occurs only following confirmation by the Medical Officer of Health that the Extended Heat Warning/Heat Alert/Extreme Heat Alert has ended.

Upon PHSD confirmation that the Extended Heat Warning/Heat Alert/Extreme Heat Alert has ended, CGS EM communicates this information to community partners through the CGS EM communication network.

A Level 2 or Level 3 response should only be deactivated on a day on which Environment and Climate Change Canada's two-day forecast (i.e. today and tomorrow) does not exceed the thresholds of temperature or humidex.

The Medical Officer of Health confirms that the extreme hot weather event has ended, however conservative deactivation thresholds are recommended and PHSD and CGS will jointly plan the timely, safe withdrawal of services. Prematurely halting municipal and public health responses to extreme heat has been shown to be associated with additional deaths.

Following confirmation, a news release may be issued jointly by the CGS and the PHSD.

In the event a news release is issued, information to be shared will include:

- Announce the end of the extended heat warning/ heat alert and/or extreme heat alert
- Specify the criteria upon which the deactivation is based
- Specify the need for continued vigilance against heat-related health effects within vulnerable populations as there can be a lag period between exposure to heat and ill health effects
- Provide directions on where the public may obtain additional information
- Announce the closure of cooling centres

Evaluation of the Hot Weather Response Plan

The CGS and the PHSD will review the Hot Weather Response Plan biannually and/or following any activation of the plan to update or improve effectiveness.

Extreme hot weather data is provided by Environment and Climate Change Canada and incorporated into the CGS Hazard Identification and Risk Assessment document for planning purposes.