

Extreme Cold Protocol

November 2017



PublicHealth
WELLINGTON-DUFFERIN-GUELPH
Stay Well.

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Extreme Cold Weather Protocol

Mandate

Health Hazard Prevention and Management Standard

The Health Hazard Prevention and Management Standard of the Ontario Public Health Standards (2008), pursuant to the legislative authority of Section 7 of the Health Protection and Promotion Act, R.S.O. 1990, c. H.7., outlines the boards of health roles and responsibilities with respect to preventing or reducing the burden of illness from health hazards in the physical environment, such as Extreme Weather.

Goal: To prevent or reduce the burden of illness from health hazards in the physical environment.

Specifically, the board of health shall increase public awareness of health risk factors associated with [. . .] extreme weather. These efforts shall include:

- Adapting and/or supplementing national and provincial health communications strategies; and/or
- Developing and implementing regional/local communications strategies

The board of health [for Wellington-Dufferin-Guelph Public Health] shall assist community partners to develop healthy policies related to reducing exposure to health hazards. Topics may include [. . .] extreme weather.

Health Effects

Exposure to Extreme Cold

Extreme cold events occur when winter temperatures drop significantly below average for that time of the year. According to Health Canada, risks from exposure to extreme cold, including frostbite, frostnip, and hypothermia, increase at wind chill values below -27°C.

For additional information visit: <https://www.canada.ca/en/health-canada/services/healthy-living/your-health/environment/extreme-cold.html>

Frostnip

- A mild form of frostbite, where only the skin freezes.
- Skin appears yellowish or white, but feels soft to the touch.
- Painful tingling or burning sensation.

Frostbite

- A more severe condition, where both the skin and the underlying tissue are frozen.
- Skin appears white and waxy and is hard to the touch.
- No sensation - the area is numb.

Hypothermia

- Being cold over a prolonged period of time can cause a drop in body temperature.
- Shivering, confusion and loss of muscular control (e.g., difficulty walking) can occur.
- Can progress to a life-threatening condition where shivering stops or the person loses consciousness. Cardiac arrest may occur.

Who is most at risk?

- Infants and young children.
- The elderly.
- Outdoor workers.
- People with chronic medical conditions or underlying infections.
- People taking certain medications (including beta blockers).
- Winter sport enthusiasts.
- Homeless persons and those lacking shelter or proper clothing.

Threshold for Issuing Extreme Cold Warning

Environment Canada (EC) will issue an alert with an Extreme Cold Warning for the Wellington-Dufferin-Guelph region when the **temperature or wind chill is expected to reach -30°C for at least two (2) hours.**

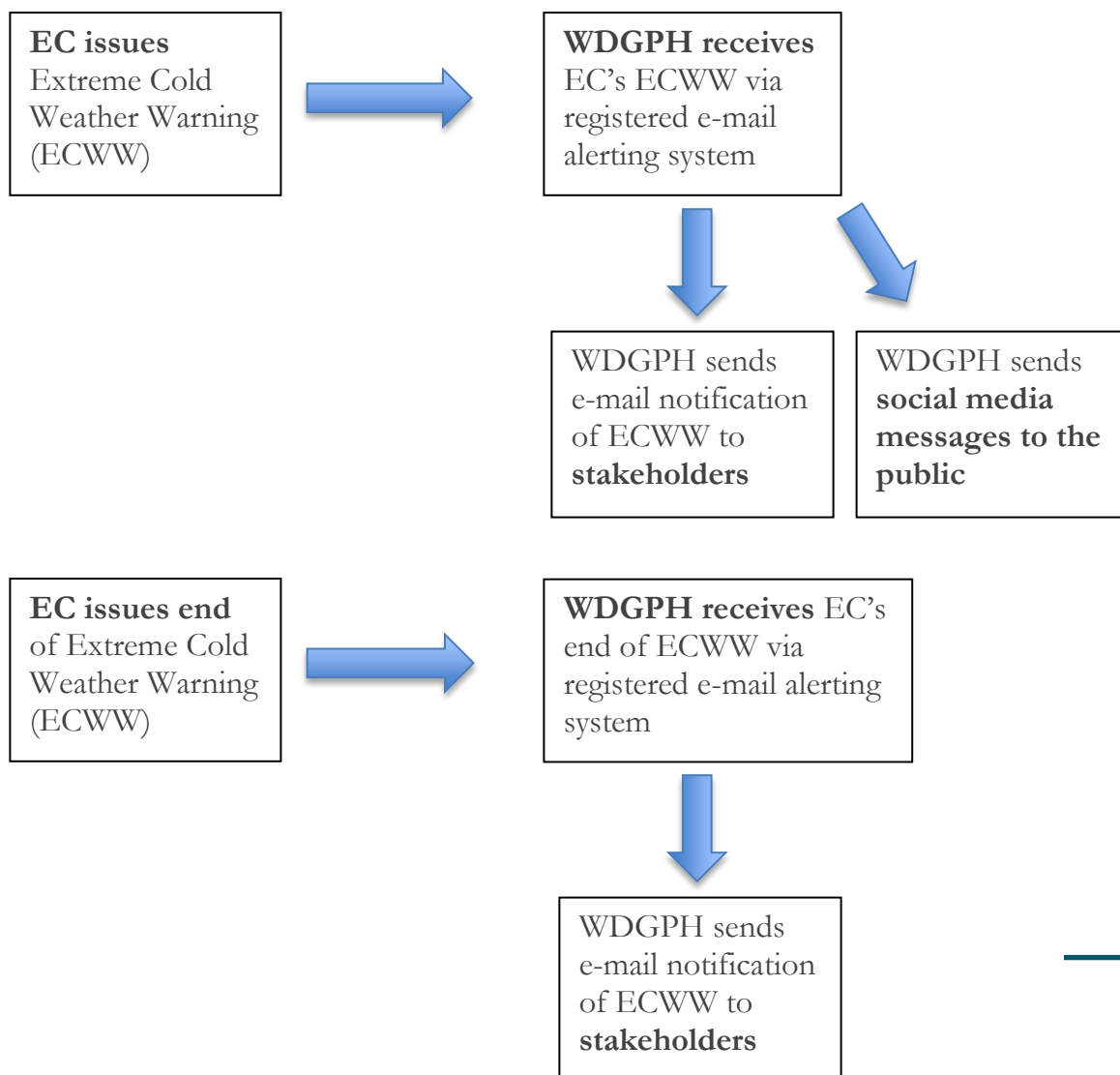
Alert type	Location	Threshold Criteria
Warning	South-central and southwestern Ontario	Issued when the temperature or wind chill is expected to reach minus 30°C for at least two hours.

Trigger and Flow of Information

Towards the beginning of the winter season (mid-December), Wellington-Dufferin-Guelph Public Health (WDGPH) will issue a media release reminding the general public to take precautions in the winter against extreme cold weather conditions (communication templates in subsequent sections). This will be issued mid-December or in response to the first extreme cold warning of the season. Throughout the cold weather season, the outline below will guide the flow of information.

During regular business hours, upon receipt of an Extreme Cold Warning from EC, WDGPH will forward EC notification to stakeholders (listed in a subsequent section) via e-mail. WDGPH will notify the entire Wellington-Dufferin-Guelph region, even if the EC Extreme Cold Warning is only for one area.

During regular business hours, WDGPH will communicate the EC alert to the general public via social media (key messages and communication templates in subsequent sections). At the end of the cold alert, WDGPH will communicate the end of the warning to stakeholders via e-mail.



Actual Temperature vs. Wind Chill Index

As shown in the chart below, an EC Extreme Cold Warning would be issued beginning in the **yellow zone** where there is an **increasing risk of frostbite for most people within 30 minutes** of exposure, when wind chill index reaches -30°C .

The **orange zone** reflects a high risk for most people with **5–10 minutes of exposure**; the **red zone** a high risk for most people **with 2–5 minutes of exposure**; and the **bright red** a high risk zone for most people **under 2 minutes or less**.

Environment Canada Wind Chill Chart

Actual Air Temperature T_{air} ($^{\circ}\text{C}$)												
Wind Speed $V_{10\text{ m}}$ (km/h)	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50
5	4	-2	-7	-13	-19	-24	-30	-36	-41	-47	-53	-58
10	3	-3	-9	-15	-21	-27	-33	-39	-45	-51	-57	-63
15	2	-4	-11	-17	-23	-29	-35	-41	-48	-54	-60	-66
20	1	-5	-12	-18	-24	-30	-37	-43	-49	-56	-62	-68
25	1	-6	-12	-19	-25	-32	-38	-44	-51	-57	-64	-70
30	0	-6	-13	-20	-26	-33	-39	-46	-52	-59	-65	-72
35	0	-7	-14	-20	-27	-33	-40	-47	-53	-60	-66	-73
40	-1	-7	-14	-21	-27	-34	-41	-48	-54	-61	-68	-74
45	-1	-8	-15	-21	-28	-35	-42	-48	-55	-62	-69	-75
50	-1	-8	-15	-22	-29	-35	-42	-49	-56	-63	-69	-76
55	-2	-8	-15	-22	-29	-36	-43	-50	-57	-63	-70	-77
60	-2	-9	-16	-23	-30	-36	-43	-50	-57	-64	-71	-78
65	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79
70	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-80
75	-3	-10	-17	-24	-31	-38	-45	-52	-59	-66	-73	-80
80	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81

where

T_{air} = Actual Air Temperature in $^{\circ}\text{C}$

$V_{10\text{ m}}$ = Wind Speed at 10 metres in km/h (as reported in weather observations)

Notes:

1. For a given combination of temperature and wind speed, the wind chill index corresponds roughly to the temperature that one would feel in a very light wind. For example, a temperature of -25°C and a wind speed of 20 km/h give a wind chill index of -37 . This means that, with a wind of 20 km/h and a temperature of -25°C , one would feel as if it were -37°C in a very light wind.
2. Wind chill does *not* affect objects and does *not* lower the actual temperature. It only describes how a human being would feel in the wind at the ambient temperature.
3. The wind chill index does *not* take into account the effect of sunshine. Bright sunshine may reduce the effect of wind chill (make it feel warmer) by 6 to 10 units.

Frostbite Guide
Low risk of frostbite for most people
Increasing risk of frostbite for most people within 30 minutes of exposure
High risk for most people in 5 to 10 minutes of exposure
High risk for most people in 2 to 5 minutes of exposure
High risk for most people in 2 minutes of exposure or less

Public Health Messages

Key Messages

- Hypothermia and frostbite are preventable.
- There are specific steps everyone can take to reduce risk.
- Some people are more vulnerable to extreme cold weather.

Health Canada recommends protecting from extreme cold conditions by following the tips below. For more detailed information, visit:

<http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/enviro/cold-extreme-froid-eng.php#a6>

Wear appropriate clothing

- Dress in layers with a wind resistant outer layer.
- If you get wet, change into dry clothing as soon as possible. You lose heat faster when you're wet

Protect yourself

- Keep moving (especially your hands and feet) to keep your blood flowing and maintain your body heat.

Know the weather conditions

- Pay attention to the weather forecasts in your area. Special weather alerts are issued when extreme weather is possible in your area.

Find shelter and keep moving

- If you are caught in extreme cold conditions, look for shelter. Even if you find shelter, keep moving to maintain your body heat.

Winterize your home

- Prepare your home for cold winter temperatures by doing regular maintenance. Make sure your heating system is working efficiently and seal all cracks and drafts to keep the heat in.

Avoid alcohol

- Consuming alcohol before you go out in the cold may increase your risk of hypothermia because it increases blood flow to the extremities of the body. You may actually feel warm even though you are losing heat.

Know your health risks

- Talk to your health care professional to see if you are at an increased risk from extreme cold due to a medical condition.
- If you have health problems such as a heart condition you may wish to avoid strenuous activities like shoveling snow.

Communication Templates

The following templates are samples only and may be changed by WDGPB as appropriate.

Sample media release to be issued by WDGPB around mid-December (or in conjunction with the first Extreme Cold Warning of the season):

Public Health is reminding residents to prepare for extreme cold weather days this winter

December XX, 2017: With the first official day of winter almost here, Wellington-Dufferin-Guelph Public Health is reminding residents to be aware of the forecast and to take precautions to stay safe during periods of extreme cold weather. Whenever temperatures are expected to be dangerously low, Environment Canada will issue an extreme cold weather warning for the region.

Exposure to extreme cold weather can cause serious health problems and can even be life-threatening. Frostbite occurs when blood flow to your extremities is restricted, particularly your fingers and toes. Exposed skin can become frostbitten in minutes. In severe cases frostbite can result in amputation. Prolonged exposure to extreme cold can result in hypothermia. Hypothermia occurs when your body temperature drops too low, and it can lead to organ failure and death.

Public Health recommends taking a number of important precautions for extreme cold weather. Make a daily habit of checking the weather and limit your time outside when the temperature drops. Cover exposed skin by dressing in layers with a wind-resistant and waterproof outer layer. Also wear waterproof boots, a hat, as well as mittens and gloves.

Remember to check in with vulnerable family members and neighbours when it's very cold to make sure they are safe. For more information about extreme cold weather precautions visit www.wdgphealth.ca.

Contact:

Chuck Ferguson, Communications Manager

1-800-265-7293 ext. 4374

chuck.ferguson@wdgphealth.ca

Sample e-mail for distribution to inform stakeholders of an Environment Canada Extreme Cold Warning:

Sample Extreme Cold Weather Email

To be sent to stakeholders in the event of an extreme cold weather warning issued by Environment Canada.

You are receiving this message because Environment Canada has issued an Extreme Cold Warning (see below [forward original message sent by EC]). This type of warning is issued when the temperature including wind chill is expected to reach minus 30°C for at least two hours.

Please check Environment Canada's website for the most up to date information: https://weather.gc.ca/warnings/index_e.html?prov=son. Alternatively, you can sign up to receive customized alerts 24 hours a day/7 day a week directly from Environment Canada here: <https://ecalertme.weather.gc.ca/>.

Some people are more vulnerable to extreme cold than others, including infants, the elderly, outdoor workers, sports enthusiasts, the vulnerably housed and people with certain medical conditions.

Health Canada recommends protecting from extreme cold conditions by following these tips:

- Regularly monitor weather forecasts in your area
- Cover exposed skin by dressing in layers with a wind-resistant and waterproof outer layer
- If you get wet, change into dry clothes as soon as possible
- Keep moving (especially your hands and feet) to keep your blood flowing and maintain your body heat
- Avoid alcohol – it can make you feel warm even though you are losing heat
- Find shelter
- Prepare your home for cold winter temperatures by doing regular maintenance.
- Talk to your health care professional to find out if you are at an increased risk from extreme cold due to a medical condition.

For more detailed information, visit Health Canada's extreme cold webpages:

<https://www.canada.ca/en/health-canada/services/healthy-living/your-health/environment/extreme-cold.html>

http://www.hc-sc.gc.ca/hl-vs/alt_formats/pdf/iyh-vsv/envIRON/cold-extreme-froid-eng.pdf

If you no longer wish to receive messages like this one, email Teema.Saliba@wdgpublichealth.ca.

Sample social media messaging to the public when Environment Canada issues an Extreme Cold Warning:

Twitter (links to be replaced by shortened URLs):

Extreme cold weather warning issued. Details:

https://weather.gc.ca/warnings/index_e.html?prov=son Protect yourself:
<https://wdgpublichealth.ca/your-community/extreme-weather/extreme-cold>

Facebook:

An extreme cold weather warning has been issued. The temperature is about to drop. When it's -30° Celsius it's cold enough to cause frostbite in minutes. Protect yourself and your family from cold weather: <https://wdgpublichealth.ca/your-community/extreme-weather/extreme-cold>

See the latest weather alerts from Environment Canada:

https://weather.gc.ca/warnings/index_e.html?prov=son

Example of General awareness message – to be circulated periodically throughout the winter season

Weather junkies – DYK you can follow @EnvironmentCA accounts for weather alerts?

Find your city/town: https://weather.gc.ca/warnings/index_e.html?prov=son

@EnvironmentCA issues extreme cold warnings when wind chills drops to -30C and risks of frostbite are high. Keep an eye out for warnings throughout the season

https://weather.gc.ca/warnings/index_e.html?prov=son

Stakeholders

Internal & External

Once an Extreme Cold Warning has been issued by EC, the following people will be notified via e-mail:

WDGPH Staff

- bo.cheyne@wdgpublichealth.ca
- chris.beveridge@wdgpublichealth.ca
- chuck.ferguson@wdgpublichealth.ca
- jessica.morris@wdgpublichealth.ca
- shawn.zentner@wdgpublichealth.ca
- teema.saliba@wdgpublichealth.ca

Local CEMCs and Back-up Contacts

- andrear@wellington.ca
 - bridgette@wellington.ca
 - kaylaw@wellington.ca
 - lindad@wellington.ca
 - jenniem@wellington.ca
 - kmartin@centrewellington.ca
 - mgivens@wellington-north.com
 - bwhite@town.minto.on.ca
-
- emergency.management@dufferincounty.ca
 - shett@dufferincounty.ca
 - smurphy@dufferincounty.ca
-
- alison.springate@guelph.ca
 - andy.macdonald@guelph.ca
 - cemc.emergency@guelph.ca
 - dave.elloway@guelph.ca
 - michelle.rickard@guelph.ca

Day Cares

- Daycare enrollment list request (CID Team email list)

LTC/Retirement Homes

- Outbreak Bulletin LTRH (CID Team email list)

Cold Weather Emergency

Escalation to Cold Weather Emergency

Under circumstances where an emergency is declared, the WDGPH Emergency Management Team will assume responsibility for the implementation of the WDGPH Emergency Response Plan. Some factors that may lead to an emergency being declared during the cold weather season could include conditions that disrupt access to electricity or potable water for large segments of our populations for an extended period of time, for example (but not limited to) a widespread power outage or a severe ice storm.

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Guelph Offices

160 Chancellors Way
20 Shelldale Crescent

Mount Forest Office

311 Foster Street

Orangeville Office

180 Broadway

Shelburne Office

167 Centre Street,
(Mel Lloyd Centre)