

THE CAB WEATHER WARNING PROTOCOLS FOR PRIVATE RADIO STATIONS

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Prepared by:



**The Canadian Association of Broadcasters
in Consultation with the Meteorological Services of Canada
a division of Environment Canada**

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VISION

Private radio, with its intensely local focus, is an essential service in the everyday lives of Canadians. As a result, it is most often the first medium Canadian listeners turn to in times of weather uncertainties. As such, the Canadian Association of Broadcasters (CAB), through the development of The CAB Weather Warning Protocols for Radio is committed to helping its members ensure that Environment Canada (EC) weather warning information is communicated in a timely and consistent manner to Canadians.

INTRODUCTION

About \$140 billion of Canada's economy is weather sensitive. When sudden weather changes lead to injuries or property damage, (e.g. tornado at Pine Lake Alberta in 2000), questions are raised regarding the timeliness of the weather warnings that local residents received. Invariably, broadcasters are drawn into the debate because of the role they are expected to play in delivering weather warning messages generated by Environment Canada. Clearly, reliable and consistent weather information is important to Canadians, our listeners.

To address this important issue, the Canadian Association of Broadcasters (CAB) and its Weather Warning Committee have developed the CAB Weather Warning Protocols to help private radio prioritize and disseminate, in a more timely and consistent basis, weather warnings issued from Environment Canada.

The CAB Weather Warning Protocols feature two separate tools to help radio improve weather dissemination. The first, *Part A*, consists of a newly developed priority rating system that categorizes the different types of Environment Canada warnings into three levels of priority-to-air status. The second, *Part B*, provides step-by-step instructions on 'how to' develop internal station guidelines and procedures on dealing with weather warnings.

Throughout its development, the CAB Weather Warning Protocols included on-going consultations with officials at Environment Canada to ensure that the coded protocols were complementary to existing Environment Canada programs.

The CAB encourages all its members to familiarize themselves with the CAB Weather Warning Protocols and put them into practice. We also encourage stations to develop and implement their own internal 'weather breaking' station protocols and technical procedures to ensure consistency in delivery of weather warnings to the public. This is particularly important for automated stations, to ensure that messages can be relayed to the public at all hours.

PART A: CAB WEATHER WARNING PROTOCOLS

For the safety of Canada's population, Environment Canada issues severe weather warnings, watches and advisories to the public via the media, weather outlets and WeatherRadio Canada¹. It is important to note at the outset that the CAB Weather Warning Protocols include coded response times for Environment Canada weather warning, alerts and advisory broadcasts only. These types of weather messages can be defined as having an imminent or unexpected threat to life and property caused by a severe weather disturbance. The Protocols do not contain instructions for regular weather forecasts.

Given the very large number of weather bulletins that originate from Environment Canada, the CAB is of the view that Environment Canada's mechanisms of delivery and radio's receipt of weather messages needed to be simplified.

The CAB has therefore developed and secured Environment Canada's commitment to adopt and implement a new 3-point coded system that re-classifies the existing types of weather warnings, watches and advisory alerts into three separate categories of urgency - each with its own individual 'priority-to-air' designation. This coded system is intended to help accelerate the on-air delivery of these warnings to the public by eliminating some of the guesswork associated with determining the urgency of the weather warning messages.

The Three Coded Priority System of the CAB Weather Warning Protocols can be defined as follows:

Code 1: Urgent Priority – Severe Weather Warning

Code 2: High Priority – Weather Watch

Code 3: Low Priority – Weather Advisory

All three levels of messages are important to listeners and all need to be treated as a priority. However, for the purposes of meeting the objectives of the CAB Protocols, it was deemed important to categorize Environment Canada warnings according to specific designated 'to-air' broadcast priority.

As such, when stations receive a 'coded' message, whether it be a code 1, 2 or code 3 from Environment Canada, they can move quickly in determining the priority-to-air by using the CAB coded system, outlined below.

¹ *For a full list of Environment Canada dissemination technologies, see Appendix 1.*

The effectiveness of the CAB Weather Warning Protocols will be dependent on station staff familiarity with the coded classification system. In addition, it will be important that stations implement their own station specific voluntary ‘weather breaking’ guidelines and procedures to ensure that all Environment Canada weather warnings, whether received during prime time or in the early hours of the morning, receive the same level of “priority-to-air” attention. (see Part B)

When airing Environment Canada weather warnings under the CAB Weather Warnings Protocols, the source of the warnings will be identified as Environment Canada.

Code Definitions And Broadcast Priority To Air

Code 1: Severe Weather Warning – Air Immediately

Definition: A ‘**Severe Weather Warning**’ alert message represents occurring severe weather, or that hazardous weather is highly probable, where imminent threat to life and property is possible.

Broadcast Priority: **Air immediately**, and repeatedly every few minutes until the threat is realized or has passed.

Includes:

- *Tornado Warning* This is a severe weather emergency. It means that a tornado has been spotted visually or on radar and is therefore "touching down" or occurring in the area specified.
- *Severe Thunderstorm Warning* (can involve high winds, damaging hail, and flood conditions and possibly produce tornadoes). A severe storm has developed, producing one or more of the following conditions: heavy rain, damaging winds, hail of at least 20 mm in diameter or intense lightning. Severe thunderstorms may also produce tornadoes.

Code 2 – High Priority - Weather Watch

Definition: A ‘**Weather Watch**’ alert represents weather conditions that are favourable for the development of severe weather and/or when severe weather conditions are expected within four hours. It may also include any major change to a previous forecast that could be a threat to life and property.

Broadcast Priority: **Air immediately or at the next program break**, and in subsequent weathercasts, and as often as is practical within the broadcast period, i.e. music stations, twice per hour; talk stations at least four times per hour.

Includes:

- *Severe thunderstorm watch:* Conditions are favorable for the development of severe thunderstorms with large hail, heavy rain, intense lightning or damaging winds within the areas and times specified in the watch.
- *Tornado watch:* Conditions are favorable for the development of tornadoes within the areas and times specified in the watch.
- *Freezing rain warning:* Expect slippery walking and driving conditions, and possible damage to trees and overhead wires due to rain freezing on contact to form a coating of ice.
- *Heavy rain warning:* Issued when heavy or prolonged rainfall is sufficient to cause local/widespread flooding. Expect 50 mm of rain over 12 hours or less, or 80 mm of rain in less than 24 hours.
- *Wind warning:* Expect winds blowing steadily at 60 km/h or more, or winds gusting to 90 km/h or more, for at least one hour.
- *Marine wind warning:*
 - Small craft Warning: Issue if winds of 20 to 33 knots are forecast.
 - Gale Warning: Issued if winds of 34 to 47 knots are forecast.
 - Storm Warning: Issued if winds of 48 to 63 knots are forecast.
 - Hurricane Force Wind Warnings: Issued for winds of 64 knots or greater
- *Blizzard warning:* Expect snow or blowing snow, with a severe windchill and visibility reduced to less than one kilometre, for four hours or more.
- *Winter storm warning:* Issued in Ontario when two or more winter conditions reach warning proportions (e.g. Wind and snow, or freezing rain followed by heavy snowfall).
- *Windchill Warning:* Expect very cold temperatures combining with wind to create outdoor conditions hazardous to human activity.

Code 3 – Low Priority - Weather Advisory

Definition: A '**Weather Advisory**' alert message means that actual or expected weather conditions may cause general concern or inconvenience – but do not pose a serious immediate threat. An advisory should be issued when conditions indicate severe weather may occur. E.g. severe weather or conditions expected within 12 hours (heavy snowfall/rainfall/wind warnings)

Broadcast Priority: **Air on next weathercast**, and as often as practical within the broadcast period

Includes:

- *Frost Warning:* A frost warning is issued when air temperatures are expected to fall to near freezing or below during the growing season, approximately May 15 to October 15.
- *Cold wave advisory:* Temperatures are expected to drop by 20 Celsius or more within 18 hours.
- *Dust storm advisory:* Issued in the prairie provinces when blowing dust caused by high winds has reduced visibility to one kilometre or less. Under extreme conditions of widespread zero visibility, this bulletin may be issued as a warning.

PART B: VOLUNTARY STEP-BY-STEP GUIDELINES AND PROCEDURES FOR RADIO STATIONS

Importance of Developing Internal Station ‘Weather Breaking’ Guidelines and Procedures

As noted earlier, in order to ensure consistent, timely and effective response to breaking weather conditions, the CAB encourages stations to develop their own internal ‘weather breaking’ station procedures, according to their individual circumstances. Internal ‘Weather Breaking’ procedures are even more important for stations that have automated periods when there is no staff at the station. For automated stations, additional technical planning may be necessary to establish measures to access the station’s transmitter on a remote basis in order to ensure that all weather warning messages get to air.

To help facilitate the preparation of station weather breaking procedures, the CAB has set-out step-by-step procedures that stations can use as a blueprint to develop their own internal weather breaking procedures. It is a guideline only and may require customization at the station level to ensure the best response to breaking weather conditions. For your convenience, an electronic copy of the CAB Weather Warning Protocol is available for download from the CAB member web site at www.cab-acr.ca.

How To Develop Internal Weather Breaking Guidelines And Procedures

SAMPLE:

Step 1: Establish Contact with Environment Canada

Establishing a point of contact or relationship with the local or regional Environment Canada weather office that is relevant to your station is the first step in ensuring effective two-way communication for weather crisis. This information (details follow) should be reviewed and updated every 6 months.

Your Environment Canada (EC) local weather office address:

National Contacts

Barry Green
4905 Dufferin Street
Downsview, Ontario
M3H 5T4
Tel 416 739 4580
e-mail: barry.green@ec.gc.ca

Tony Chir
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Step 2: Designate Staff Responsibilities

Assign responsibilities to station staff. If your station is automated during evening or weekends, assign 2-3 staff persons on rotation to be on call and receive messages from Environment Canada. Consider purchasing additional WeatherRadios or other systems to alert 'on-call' staff to weather warning messages while they are away from the station.

Issues to consider if station has automated programming:

- ensure on-call staff have access to weather warning messages, via pager, WeatherRadio or another suitable electronic means.
- Ensure Environment Canada has coordinates of designated on-call staff
- Train authorized station staff to access the transmitter's audio feed in order to break into programming when required
- Or, undertake negotiations with Environment Canada office to set up a system that would allow Environment Canada to cut into stations' programming for Code 1 messages only.

Step 3: Develop an Action Plan to Respond to Weather Warnings Scenarios (Code 1, 2 or 3)

In the event of "Breaking Weather" the following '*sample*' plan should be put into action:

In the event the WeatherRadio alert sounds or a weather watch and/or a Code 1 warning is issued by Environment Canada, notify the On-air staff, News Director/Producer immediately. If they are off-site, place calls immediately, or if you are short staffed then designate someone to call personnel and prepare to gather weather information for news updates.

If station is automated, implement station's technical back-up plan.

To assess and monitor the warning and it's scope use only the web page at ..., (some options follow, or insert your own weather web address).

- ***Environment Canada Weather on the Web at...***
<http://www.weatheroffice.ec.gc.ca>

- *La météo d'Environnement Canada sur le Web à...*

<http://www.meteo.ec.gc.ca>

This page is updated every minute...bookmark it and refresh the page for the most up to date information.

Step 4: Broadcast Weather Warnings according to CAB Protocol

The on-air news personality and/or other designated on-air staff will evaluate the alarm based on the CAB Weather Warning Protocols and proceed accordingly with a number of choices in the event of severe weather in the station's broadcast area.

Those choices are as follows....

- The frequency of live-to-air updates will be based on the threat and severity of the watch or warning
- Include the nature of the warning and the areas that are affected including the time the warning expires
- For Code 2 and 3 weather watches and advisories, air according to protocol and monitor subsequent weather reports closely
- If station is automated, initiate action according to your own internal 'weather breaking' station protocol.

CONCLUSION

Severe thunderstorms are more frequent in the Spring and Summer months, but also occur into the Fall. Most tornadoes occur between the hours of 4:00 and 9:00 p.m. and are spawned during severe thunderstorms; flash floods can also result from thunderstorms. Blizzards, freezing rain, and severe snowstorms can also be deadly and must be treated accordingly.

Avoid trying to rationalize a watch or warning by thinking that "it doesn't look that bad outside". You can make a difference!

APPENDIX 1

GLOSSARY OF WEATHER TERMS

(Excerpt from Environment Canada Web site (www.weatheroffice.com))

Sky Condition

Clear: Less than 20 % of the sky will be concealed by cloud throughout the forecast period.

Sunny or A Few Clouds: Less than 50 % of the sky will be concealed by cloud throughout the forecast period.

Mainly Sunny: There will be less than 50 % cloud cover, but there may be brief periods of more cloud cover.

Mainly Cloudy: There will be more than 50 % cloud cover, but there may be brief periods of less cloud cover.

Cloudy: There will be more than 50 % cloud cover throughout the period.

Variable Cloudiness: Cloud cover oscillates between 20 % and 80 % throughout the period.

Overcast: 100 % cloud cover giving dull, grey conditions over a significant period.

Clearing: The cloud cover is expected to decrease over a period of several hours to less than 50 %.

Clouding Over_or Increasing Cloudiness: Cloud cover is expected to increase over a period of several hours to more than 50 %.

Precipitation (Type)

Rain: Water drops large enough to cause splashes and ripples in puddles.

Drizzle: Very small water drops that can appear to float in the air. They are too small to cause splashes but can be felt on the face as mist.

Snow: Mainly branched six sided ice crystals. At temperatures near 0 degrees, they will join together to form snowflakes.

Snow Grains: Opaque particles of ice about the size of a grain of salt or sugar. This is frozen drizzle.

Snow Pellets: Opaque particles of snow about the size of a grain of rice. They are brittle and easily crushed.

Ice Pellets: Transparent particles of ice. They look like ice chips and often confused with hail.

Hail: Opaque balls of ice, almost always spherical. Can range from BB to softball size.

Ice Crystals: Un-branched ice crystals that fall as needles or plates. They only occur at cold temperatures (less than -20 degrees Celsius) and can fall from a cloudless sky.

Precipitation (Duration)

Showers: Short duration (less than 1 hour) precipitation, can start, stop or change intensity very rapidly.

Periods of (Rain, Snow, etc.): Moderate duration (a few hours). Changes in intensity are much slower than showers.

Rain, Snow, etc.: Long duration (several hours to a day). Changes in intensity are not noticeable.

Note: Hail and Snow pellets always fall as showers while drizzle and snow grains never fall as showers.

Precipitation (Form)

Liquid: Water drops of any size. The liquid precipitations are rain and drizzle.

Freezing: Water drops in the atmosphere but will freeze as ice when they make contact with any object. The freezing precipitations are freezing rain and freezing drizzle.

Frozen: Ice or ice crystals of any shape. The frozen precipitations are snow, snow grains, ice pellets, snow pellets, hail and ice crystals.

General Meteorological Terms

Dew Point: The temperature at which the air would be totally saturated with water vapour if the air was cooled and no more water vapour was added. When the air temperature and dew point temperature are equal, fog forms.

Humidex: A so called "comfort index" the Humidex reading provides a value based on a combination of temperature and humidity which represents what the temperature would be expected to be if the air were dry. If you consider the effect of evaporative cooling... then in dry air at any given temperature you would not feel so warm as in moist air at the same temperature simply because your body could not cool down as quickly due to the reduced evaporative cooling.... Extremes of temperature and high humidity can cause health concerns in some people as a result. In Canada the area most affected by this combination of very high temperature and high humidity is southern Ontario and Quebec as moist tropical air pushes up from the Gulf of Mexico in the summer. The temperature of the air is not affected..... rather it is a combination of temperature with other meteorological parameters which causes the effects above.

Relative Humidity: The ratio between how much water vapour is in the air and how much water vapour the air could hold at that temperature if the air was saturated. It is expressed as a percentage.

Wind Chill: The rate at which a body will cool depending on temperature, wind and humidity differences. Expressed as units of energy lost over a given area (e.g. watts per square metre). In still air one's body releases heat... which stays close to the body and in cold air it takes a little time for the body to cool down..... with wind the warm air around one's body is blown away and one cools down more quickly. At cold temperature and high wind the threat of problems due to exposure to cold become more severe

Burn Factor: A scale to indicate the strength of the sun's ultra-violet rays and their effects on skin. Environment Canada's UV Index* provides a simple scale between 0 and 10 to represent the intensity of ultraviolet radiation in the skin burning wavelengths.

Probability of Precipitation: The likelihood of measurable precipitation occurring at a designated location within the forecast region. The number is expressed as a percentage and is based on the occurrences of precipitation in similar situations in the past.

Visibility: The distance one can see horizontally based on seeing and recognizing objects (i.e. buildings, bridges, landmarks, etc.). The reported visibility is the greatest distance the observer can see in sectors which make up at least one half of the horizon circle.

Jet Stream: Bands or rivers of fast moving air that circle the globe. They mark the boundaries between air masses and are normally about 10 km (6 miles) above the earth's surface.

Radar: Radar reflects back off raindrop sized water drops. Calculating the difference in location of the same area of precipitation between radar sweeps, radar can also estimate the wind in that area. From the density of the raindrops radar can estimate the amount of precipitation that is likely to fall.

Satellite: Satellites take pictures of the earth using a variety of cameras. Visual pictures show what we would see from the satellite (only useful during daylight hours, white snow looks the same as white cloud tops). Infrared pictures show different temperatures as different colors (-35 degree ground looks the same as -35 degree cloud tops). By combining the different types of images, forecasters can distinguish cloud systems from terrain and ocean.

APPENDIX 2

ENVIRONMENT CANADA SERVICES

The Meteorological Service of Canada (MSC) is the division of Environment Canada (EC) which is responsible for delivering the Department's Weather and Environmental Predictions (WEP) program. The WEP activities generate the most visible and sought after communications product of the Department – the weather forecasts and the warnings of weather hazards.

ENVIRONMENT CANADA Dissemination Systems

There are a number of mechanisms used by Environment Canada to deliver weather warning information. CAB's research indicates that each radio station uses differing systems to monitor weather disturbances. What is important is that the stations' designated staff responsible for monitoring weather disturbances are familiar with the system used by the station.

WeatherRadio: Environment Canada's WeatherRadio, located on the VHF-FM radio band broadcasts information about the weather 24 hours each day, including current conditions, severe weather watches and warnings. 168 transmitters are located across Canada. Frequencies used are 162.400, 162.425, 162.450, 162.475, 162.500, 162.525 and 162.550 MHz. (Usually only one of these can be received in any given market.)

Many models have an alert feature which will chime, beep or flash just prior to the announcement of a severe weather warning.

Automatic Answering Devices (ATAD or Weather Line): This includes pre-recorded weather information, including local forecasts, current conditions, probability of precipitation, temperature highs and lows and the ultra-violet index during the summer and wind chill value during the winter. All of this information is kept current and news of weather warnings and weather watches is updated immediately. These telephone access recordings are located in 176 urban centers across Canada.

Autofax: A service where weather information of your choice is delivered directly and automatically by fax to clients.

News wire services: News wire services such as BN, provide broadcasters a complete suite of MSC weather information including weather observation, forecasts and of course weather warnings. The MSC provides this information to the news wire suppliers via dedicated electronic feeds.

FTP: using the File Transfer Protocol, weather information files are delivered to clients. The files transferred can be text or images

e-Weather: is a free service from Environment Canada delivering 5-day weather forecasts for the city of your choice delivered on your schedule to your e-mail account. Subscription information can be obtained at www.weatheroffice.com.

Internet: Environment Canada posts weather forecasts and extended weather forecasts coast to coast to coast every day on the Green Lane, our Web site –www.weather.ec.gc.ca Climatological information is available at www.cmc.ec.gc.ca/climate and information on sea ice conditions at www.cis.ec.gc.ca.

Wireless devices: through the intermediate of private sector providers, the MSC feeds weather information to service providers so that weather information is available on wireless devices such as cell phones and pagers.

For more information about Environment Canada Meteorological Services, contact:

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APPENDIX 3

CAB WEATHER WARNING COMMITTEE

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