



Burlington Fire Department



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| Section: 03 - Safety | |
| SOG Number: 03.08 | Effective Date: August 19, 2022 |
| Subject: Extreme Weather | |
| By Order of Acting Fire Chief Derek R. Libby | |

I. Purpose:

The purpose of this policy is to establish a standardized guideline for extreme weather/temperature conditions and the well-being of all Burlington Fire Department Personal. This guideline regulates non-emergent activities. However, it should be used during Emergency Incidents as soon as possible.

II. Scope:

This guideline applies to all Burlington Fire Department personnel when in a non-emergent activity during extreme weather. The authority to deviate from this guideline rests with the Incident Commander, Chief Engineer, or his designee,

III. Definitions:

Actual Air Temperature: Current outside temperature after factoring in wind-chill or WBGT

Current Conditions: Upper **air** observations from radiosonde stations in North America. (NWS)

Heat Index: The Heat Index, sometimes referred to as the apparent temperature, is a **measure of how hot it really feels when relative humidity is factored with the actual air temperature.**

National Weather Service (NWS): The National Weather Service Office is located in Burlington, Vermont.

Red Flag: Term to describe extreme heat weather when all normal daily activities such as training/inspections are reduced or canceled.

Wet Bulb Globe Temperature: A measure of the heat stress in direct sunlight, which takes into account: temperature, humidity, wind speed, sun angle, and cloud cover (solar radiation) (NWS) WBGT requires a measuring instrument.

White Flag: Term to describe extreme cold weather when all normal daily activities such as training/inspections are reduced or canceled.

Wind Chill: A still-air temperature that would have the same cooling effect on exposed human skin as a given combination of temperature and wind speed.

Temperature: Temperature is measured in degrees on the Fahrenheit, Celsius, and Kelvin scales. (NWS)

Wet Bulb Globe Temperature: A measure of the heat stress in direct sunlight, which takes into account: temperature, humidity, wind speed, sun angle, and cloud cover (solar radiation). (NWS) WBGT requires a measuring instrument.

White Flag: Term to describe extreme cold weather when all normal daily activities such as training/inspections are reduced or canceled.

Wind Chill: A still-air temperature that would have the same cooling effect on exposed human skin as a given combination of temperature and wind speed.

IV. Guidelines:

A. Extreme Heat (Red Flag) Refer to Table 1 or 2

1. When the *Heat Index reaches 89°F degrees or the WBGT reaches 85°F, an extreme operation level will be advised.* All personnel are advised to reduce their workload to 50% and 50% rest in a shaded or cool environment. Common sense should be used if variance from this guideline is required.
2. When personnel must work in direct sunlight, a factor of 10°F of temperature shall be added in calculating heat index or WBGT. An additional 10-15°F of temperature shall be added to the heat index or WBGT when a member is working in direct sunlight in full protective clothing.
(Example: The outside temperature is 90°F with 75 % humidity; the heat index chart would indicate that the heat index would be appx. 109° F. Now add 10° F for turnout gear and 10-15° F for direct sunlight would bring the temperature to 129°F – 134°F.)
3. An adequate supply of drinking water should be available for members during emergency response.
4. Extra Alarms are recommended and a rehabilitation area should be established for rest and rehydration. This area should be cool and shady.

5. Uniforms adjustment when a Red Flag Day has been determined it is allowable for all personnel to dress down one level to assist with cooling. (Example: Class C polo shirts down to BFD official T-shirts, Command Staff from Class B to Class C uniforms.) Shorts should already be permitted during this time.

B). High risk operations. (Black Flag) Refer to Table 1 or 2

1. When the *Heat Index reaches 91°F degrees or the WBGT reaches 87°F* high risk operations, Black Flag, 25% work, 75% rest each hour, carefully monitored, rotational Squads used, limited work operations. Common sense should be used if variance from this guideline is required.
2. An adequate supply of drinking water should be available for members during emergency response.
3. Extra Alarms are recommended, and a rehabilitation area should be established for rest and rehydration. This area should be cool and shade
4. Uniforms adjustment; same standard at Red Flag Day.

C) Extreme Cold (White Flag)

1. Extreme Cold, all outside activities shall be reduced other than emergency responses when the actual outside temperature falls below 20°F
2. During extremely cold weather or in the event of winter weather, all members should follow guidelines set forth by SOG. 00.13 Staffing during winter storms
3. When possible, all fire department apparatus that have a storage supply of water should remain inside as much as possible. Members are reminded to dress in layers of warm clothing to maintain a body temperature that does not impede on the protection of firefighting turnout gear.

D). Daily Activity Adjustment.

1. The above guideline shall not cause all non-emergent activities to cease, only those affected by outside weather elements.
2. It is the responsibility of the Company Officer or RTS to ensure a productive day continues via station projects or company-level training.
3. Company Officers or RTS shall enter maintenance or training in the departments RMS.

V. Responsibility:

It is the responsibility of all members to read, understand and follow this Standard Operating Guideline

| Revision History | | | |
|------------------|---------|---------|------------------|
| Revision Date | Section | Summary | Principal Author |
| August 19, 2022 | All | All | BC Webster |

Table 1:

| Suggested Actions and Impact Prevention | | |
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| WBGT(F) | Effects | Precautionary Actions |
| < 80 | | |
| 80-85 | Working or exercising in direct sunlight will stress your body after 45 minutes. | Take at least 15 minutes of breaks each hour if working or exercising in direct sunlight |
| 85-88 | Working or exercising in direct sunlight will stress your body after 30 minutes. | Take at least 30 minutes of breaks each hour if working or exercising in direct sunlight |
| 88-90 | Working or exercising in direct sunlight will stress your body after 20 minutes. | Take at least 40 minutes of breaks each hour if working or exercising in direct sunlight |
| >90 | Working or exercising in direct sunlight will stress your body after 15 minutes. | Take at least 45 minutes of breaks each hour if working or exercising in direct sunlight |

Table 2:

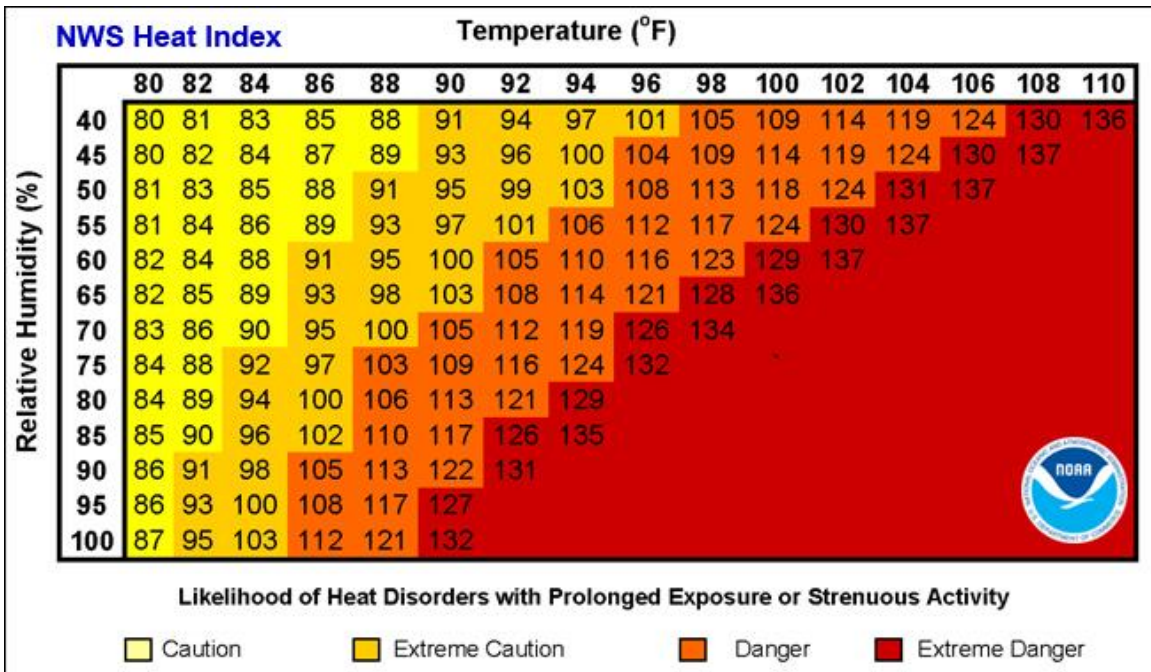


Table 3:



Wind Chill Chart

