

# Portage Prepares

Helping Portage County Citizens prepare for emergencies and disasters.



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## Wind Chill Index

The National Weather Service Wind Chill Temperature index is designed to accurately calculate how cold air feels on human skin. This index is based on heat loss from exposed skin.

The Wind Chill Chart (see below) includes a frostbite indicator that shows the points where temperature, wind speed and exposure time will produce frostbite on people. The chart includes three shaded areas of frostbite danger. Each shaded area shows how long (30, 10 and 5 minutes) a person can be exposed before frostbite develops.



## Wind Chill Chart



Wind (mph)	Temperature (°F)																			
	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63	-69	-75
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72	-78	-84
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77	-83	-89
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81	-87	-93
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84	-90	-96
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87	-93	-99
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89	-95	-101
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91	-97	-103
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-92	-98	-104
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-94	-100	-106
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-95	-101	-107
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-83	-90	-96	-102	-108

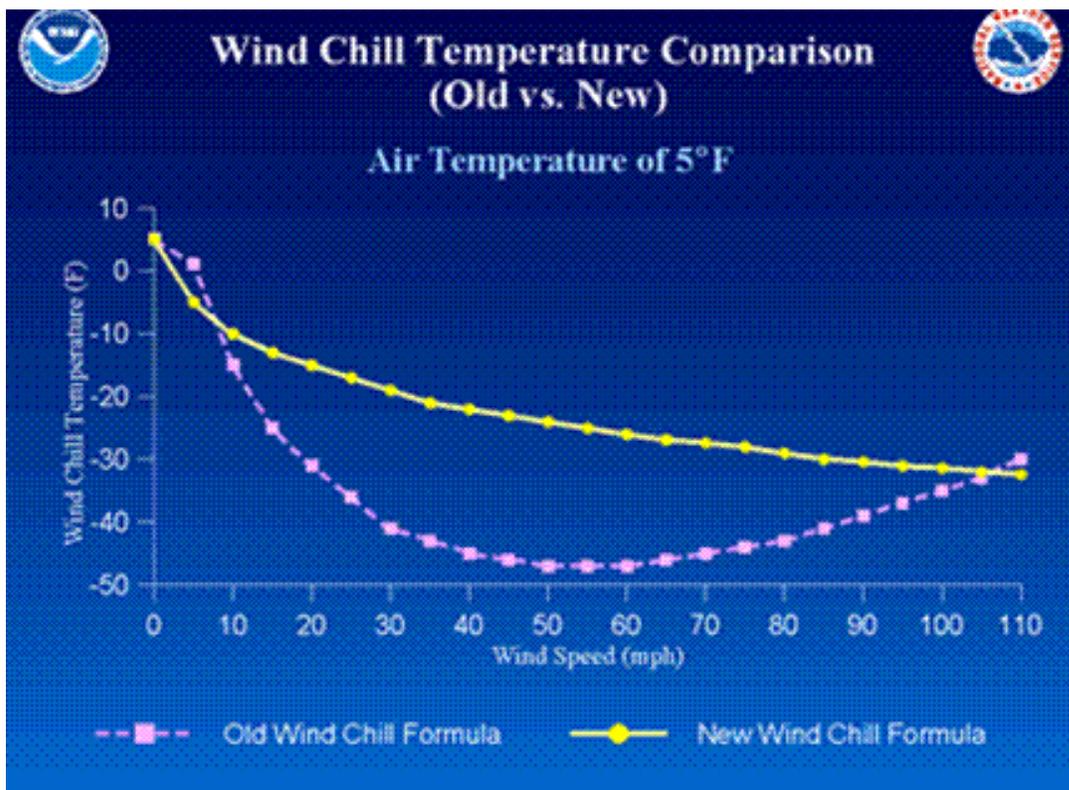
Frostbite Times:   30 minutes   10 minutes   5 minutes

**Wind Chill (°F) = 35.74 + 0.6215T - 35.75(V<sup>0.16</sup>) + 0.4275T(V<sup>0.16</sup>)**  
 Where, T= Air Temperature (°F) V= Wind Speed (mph) Effective 11/01/01

# Wind Chill Temperature Index

The wind chill temperature index:

- Uses wind speed calculated at the average height of the human body's face (five feet), instead of 33 feet (the standard anemometer height).
- Incorporates modern heat transfer theory (the **body** loses heat to its surroundings during cold and windy days).
- Lowers the calm wind threshold from 4 mph to 3 mph.
- Uses a consistent standard for skin tissue resistance.
- Assumes no impact from the sun (clear night sky).

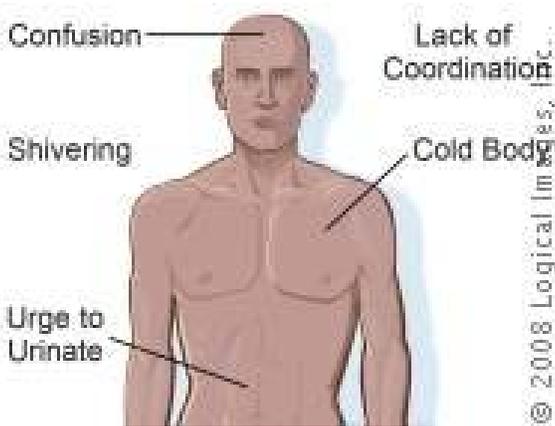
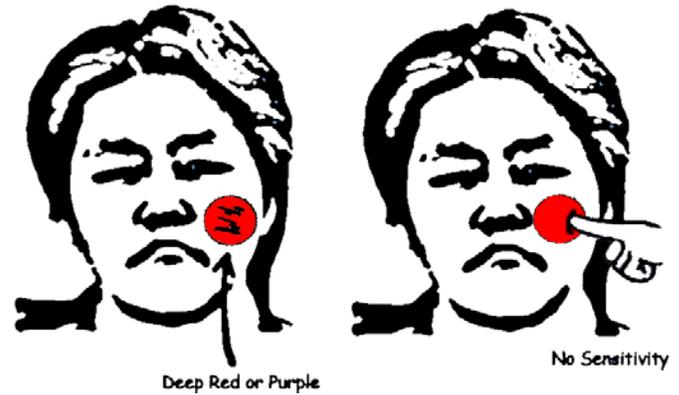


## What is Wind Chill Temperature?

The wind chill temperature is how cold people and animals feel when outside. Wind chill is based on the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, driving down skin temperatures and eventually the internal body temperature. Therefore, the wind makes it feel much colder.

## What is Frostbite?

Frostbite is an injury to the body when your body tissue freezes. The most susceptible parts of the body are the extremities such as fingers, toes, ear lobes, or the top of the nose. Symptoms include a loss of feeling in the extremity and a white or pale appearance. Medical attention is needed immediately for frostbite. The area should be slowly re-warmed.



## What is Hypothermia?

Hypothermia is abnormally low body temperature (below 95 degrees F). Warning signs include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness and apparent exhaustion. Medical attention is needed immediately. If it is not available, begin warming the body slowly.

## Tips on How to Dress during Cold Weather

- Wear layers of loose-fitting, lightweight, warm clothing. Trapped air between the layers will insulate the body. Outer garments should be tightly woven, water repellent and hooded.
- Wear a hat because 40 percent of your body heat can be lost from your head.
- Cover your mouth to protect your lungs from extreme cold.
- Mittens, snug at the wrist, are better than gloves.
- Try to stay dry and out of the wind.

