

WINTER STORMS – Hazard Description

What are winter storms?

Winter storms in Sangamon County consist of snow and ice and at times result in blizzard conditions. Winter storms can result in flooding, storm surge, closed highways, blocked roads, downed power lines and hypothermia.

Snowfalls are generally measured in inches but have reached over one foot. Blowing snow reduces visibility and is the cause of many vehicle accidents.

- A heavy snowstorm is one that produces at least 6” of snow within 48 hours.
- A blizzard is a winter storm with sustained winds or frequent gusts of 35 mph or greater and considerable falling or blowing snow reducing visibility to less than ¼ mile for 3 hours or longer. Drifting is a major concern with roadways being blocked and buildings and driveways becoming inaccessible.

Freezing rain and sleet create slippery roadways and sidewalks causing dangerous conditions and can weigh down tree limbs and power lines causing damage and power outages.

- Freezing rain is rain that freezes when it hits the ground, trees, power lines and buildings, creating a coating of ice.
- Sleet is rain that turns to ice pellets before reaching the ground and creates slippery conditions.

The information in the following tables was provided by Chris Miller of the National Weather Service in Lincoln, Il and shows historical snow data for Springfield (the only NOAA observing site in Sangamon County).

Figure 2-1 Snow Data for Springfield (1893-2006)

Normal Snowfall	
January	5.6”
February	5.5”
March	3.6”
April	0.5”
May	0
June	0
July	0
August	0
September	0
October	0.1”
November	1.3”
December	4.5”
Annual	21.1”

Frequency of Snowfall Occurrence	
0.1 – 1”	12 days per year
1 – 2”	3 days per year
2 – 4”	2 days per year
4 – 6”	1 day per year
6”	once every 2 years
TOTAL	about 18 days per year

Biggest Snowstorms	
February 28, 1900	17.5”
December 19, 1973	14.6”
January 2, 1999	13.3”
February 24, 1965	13.0”
February 19, 1908	12.8”
January 31, 1914	12.6”

February 13, 2007	11.8”
December 25, 1915	10.8”
February 13, 1894	10.7”
January 12, 1964	10.3”
February 23, 1914	10.1”

The Springfield area can expect about 18 days of snowfall per winter with the largest amount coming in January and February. Of the 11 biggest snowstorms cited 6 (55%) occurred in February, 3 (27 %) occurred in January, and 2 (18%) occurred in December.

The extent of previous occurrences of winter storms in Sangamon County.

Figure 2-2 presents data on winter storms in the Central Illinois area, including Sangamon County, over the 12 year period from January 1, 1995 through March 31, 2007. During each of the 1995-96, 1996-97, and 1997-98 winter seasons four severe storms were documented. During 2 winter seasons 2 snowstorms were recorded. During 3 winter seasons 1 snowstorm hit the area. During 3 winter seasons there were no winter storms.

The amount of snow that falls can vary throughout the County for any one winter storm event. (See Figure 2-3). Of the snowstorms cited the amount of snow ranged from 2” to 12”. In the historical snow storms shown in Table 2-1 however, 17.5” fell in February 1900. Along with the snow, heavy winds can create whiteout conditions and drifting. Wind speeds of between 20 and 50 mph have been recorded during snowstorms in Sangamon County.

Eight of these storms included ice or freezing rain.

The locations affected by winter storms.

Winter storms generally occur throughout central Illinois during any single event and the entire County is affected.

Previous occurrences of winter storms in Sangamon County.

Winter storms create treacherous conditions for travel and dangerous situations when power outages also occur. Figure 2-2 shows data on winter storms in the central Illinois area. All these storms hit Sangamon County although the statistics shown are for a many county area. In this larger area during the 12 year period 11 people died and 47 people suffered injuries in relation to winter storms.

In March 1978 an ice storm hit Sangamon County accompanied by strong winds and rainfall bringing the area to a halt for many days. Just venturing outdoors was dangerous with power lines and trees falling due to the weight of the ice. The utility line damage was so overwhelming on a large scale with transmission lines down and localized with lines down to individual homes and businesses that getting everyone back on line took two weeks.

Figure 2-2 Winter Storm Events in Central Illinois from January 1, 1995 – March 31, 2007
(from: National Climatic Data Center)

Winter Season	Date	Time	Extent	Death	Injuries	Property Damage
1995-1996	12/08/95	7:00 AM	≤ 5" snow, low temperatures, 20-30 mph winds, wind chill -45°, blowing snow	1	0	0
	12/18/95	7:00 PM	freezing rain, ≤ 6" snow, 20-30 mph winds, blowing snow	1	0	0
	01/04/96	3:00 AM	2"-7" snow	0	0	0
	01/18/96	10:00 AM	low temperatures, ice, 25-35 mph, wind chill -40°	0	2	0
1996-1997	01/08/97	9:00 PM	3"-11" snow	0	6	0
	01/15/97	3:00 AM	4"-6" snow, 20-30 mph winds, blowing snow, low temperatures, wind chill -40°	1	7	0
	01/24/97	7:00 AM	freezing rain, sleet, ≤ 2" snow	0	0	0
	01/26/97	5:00 AM	1"-9" snow	0	9	0
1997-1998	12/09/97	3:00 PM	≤ 6" snow	1	0	0
	12/30/97	8:00 AM	3"-6" snow	3	0	0
	01/14/98	6:00 AM	freezing rain, sleet, snow	0	0	0
	03/08/98	10:00 PM	freezing rain, snow, 50 mph winds	2	0	0
1998-1999	01/01/99	12:00 PM	≤ 6" snow, low temperatures, dangerous wind chills, blowing snow	1	1	0
	03/08/99	12:00 PM	freezing rain, 2"-6" snow	0	5	0
1999-2000	03/11/00	4:00 AM	6"-8" snow, blowing snow	1	9	0
2001-2002	02/26/02	1:00 AM	5.5"-7" snow, 15-40 mph winds, blowing snow	0	0	0
	03/25/02	9:00 PM	freezing rain, sleet, 4"-7" snow, blowing snow	0	0	0
2002-2003	02/14/03	11:00 PM	4"-8" snow, blowing snow	0	0	0
2004-2005	11/24/04	3:00 PM	4"-6" snow, 20-50 mph winds, blowing snow	0	4	0
2006-2007	11/29/06	10:00 PM	8"-12" snow	0	0	0
	12/01/06	12:00 AM	8"-12" snow	0	4	\$ 10.0M
	01/12/07	2:00 PM	ice storm	0	0	0
	02/13/07	12:00AM	freezing rain, sleet, 9"-12" snow, 25-50 mph winds	0	0	0
TOTALS				11	47	\$10.0M

Probability of future events.

Winter storms are expected in Sangamon County. During the 12 year period from 1995 – 2007 twenty-three winter storms occurred during 9 winter seasons. (There were no winter storms recorded during 3 winter seasons.) This indicates a 75% probability that in any given year at least one winter storm will occur. During 5 winter seasons more than one snowstorm occurred. This indicates a 42% probability that in any given year more than one winter storm will hit Sangamon County.

WINTER STORMS-Assessing Vulnerability

Winter storms are very disruptive to a community. Roads can become impassable or extremely dangerous. Buses, trains, and airplanes can be cancelled or delayed. With transportation networks disrupted emergency response can become delayed or non-existent, mail is not delivered, and shipments of food and other consumer items can be delayed. Schools close, businesses close, and some (or all) government services are not available.

There is a toll that can be taken on people related to treacherous road conditions, exertion from snow shoveling, and extremely low temperatures. About 70% of injuries caused by winter storms are the result of vehicle accidents while 25% occur to people caught out in the storm. Of the 11 deaths shown in Figure 2-2 that occurred in the larger central Illinois region from 1995-2007 nine, or 82%, were due to vehicle accidents, one was due to exposure, and one occurred when a garage overhang collapsed.

Generally buildings are not damaged on a large scale during a winter storm although a heavy snow could cause roof damage and the accumulation of ice in gutters can cause building damage. The roof snow load for structures in Sangamon County is 30 pounds per square foot. Any building constructed in a community that has adopted building codes will meet this standard.

There is a large cost to road departments for the removal of snow. During the _____ snowstorm the Sangamon County Highway Department spent \$ _____ on snow removal.

The damage caused to power and communication lines can be extensive with the ability to bring them back on line delayed because of the adverse conditions. The cost of repair can be high and the consequences can range from being inconvenient to life-threatening.

Presidential Disaster Declaration 1681 included Sangamon County and was issued on February 9, 2007 after the massive snow storm that hit a large area of central Illinois.