



# Minnesota Severe Weather Awareness Week

# What is Severe Weather Awareness Week?

- Statewide information campaign to inform and refresh knowledge about severe weather threats
- Aim is to enable citizens to be better prepared and take appropriate action when necessary



## April 13 – 17, 2015

- Each day of the week focuses on a different topic:
  - **Monday** – Weather Alerts and Warnings
  - **Tuesday** – Severe Storms, Lightning and Hail
  - **Wednesday** – Floods and Flash Floods
  - **Thursday** – Statewide Tornado Drill Day
  - **Friday** – Heat Waves
- Information and topics will continue throughout spring and summer on the [HSEM website under “Weather Safety”](#)

# Severe Weather Hazards Are Real

In the past 10 years, more than 40 people have died and dozens more injured as a result of weather-related events in Minnesota (not including motor vehicles.)

The top severe weather hazards in Minnesota are:

- Severe storms, hail and lightning
- Floods
- Tornadoes
- Extreme heat

# Weather Alerts and Warnings

- **Severe weather warnings** are issued by the National Weather Service
  - *Know the terms and what they mean*
- **Warning sirens** are operated **by each county**
- **Personal weather alerts** – The National Weather Service along with many local media outlets and internet sites offer free local personal weather alerting services
- **Wireless Emergency Alerts** – sent by authorities to all cell phones in specific area to warn of a dangerous situation or critical information.

# Types of Warnings

- **Weather Warning**
  - A dangerous weather or event is occurring or imminent
  - Likely significant threat to life or property
  - Take protective action immediately
- **Weather Watch**
  - Weather conditions are favorable for a hazardous weather event
  - Stay alert to changing conditions
  - Make alternate plans
  - Be aware of possible shelter or evacuation routes
- **Weather Advisory**
  - Less hazardous weather conditions or less specific locations
  - Weather may still pose significant inconvenience, damage or injury
  - Situations are possible that could threaten life or property

# Personal Weather Alerts

Personal and localized electronic weather alerts are available across Minnesota from the National Weather Service or local media outlets in a variety of formats

- Email
- RSS feeds
- Text messages
- Cell phones
- Computers
- Tablets
- Social media

Sample of sources:

- [National Weather Service](#)
- [Weather.com](#)
- [Accuweather.com](#)
- [Emergency Email & Wireless Network](#)
- [WCCO](#)
- [KARE11](#)
- [KSTP](#)
- [KMSP](#)
- [KAAL –TV](#)
- [KBJR6/Range 11](#)
- [WDAY – Fargo/Moorhead](#)
- [KELO – SW Minnesota](#)



# Siren Activation Information

- Counties and cities in Minnesota own and operate all warning sirens in their jurisdictions
- Check with your local public safety officials to learn when and why warning sirens are sounded in your community
- Sirens normally sound for about two to three minutes and then go silent
- There is no such thing as an "all-clear" siren



## Severe Thunderstorms, Lightning and Hail

- Thunderstorms affect relatively small areas
- A typical thunderstorm is 15 miles in diameter and lasts for about 30 minutes
- Severe thunderstorms can produce large hail or have winds of at least 58 mph
- Some wind gusts can exceed 100 mph and produce tornado-like damage

## Facts About Thunderstorms

- Storms may occur singly, in clusters, or in lines
- Ten percent of storms are severe - high winds and hail
- Storms typically produce heavy rain for a brief period
- Warm, humid conditions are favorable for storm development

# Facts About Hail

- Hail is larger than sleet and forms in thunderstorms
- Updrafts are strong rising currents of air within a storm that carry water droplets to a height where they freeze and become hail
- Hail can range from pea-sized (most common) to baseball sized
- Large hail stones fall faster than 100 mph and can injure or even kill people

# Facts About Lightning

- All thunderstorms produce lightning
- A bolt of lightning can be over five miles in length
- Lightning can strike up to 10 miles away from the center of a storm
- Your chance of being struck by lightning once in your lifetime: 1 in 10,000 (*NWS Data*)
- Lightning strike victims carry no electrical charge and should be attended to immediately
- “Heat” lightning doesn’t exist - it is flashes from a far-away storm that can’t be heard



## Know the Warning Terms

- **Severe Thunderstorm Watch** — weather conditions are favorable for producing severe thunderstorms. Remain alert and stay informed
- **Severe Thunderstorm Warning** — severe weather has been reported. Seek shelter immediately



## Before Storms and Lightning Strike

- Secure outdoor objects
- Close/shutter windows and secure outside doors
- Consider postponing outdoor activities
- Know where nearby shelters are
- Get inside a home, building, or hard top automobile
- Rubber-soled shoes and rubber tires provide no protection



## During Thunderstorms with Lightning Tips

If you are outside:

- Avoid natural lightning rods: trees, hilltops, open fields, beaches, or a boat on the water
- Avoid isolated sheds or small structures in open areas and trees
- Avoid anything metal
- Seek shelter or get to a lower area

## During Thunderstorms with Lightning

- Remember the **30/30** lightning safety rule:
  - *If less than 30 seconds from flash to thunder – find shelter*
  - *If 30 minutes since last thunder – safe to be outside*
- If you feel your hair stand on end:
  - *Squat low to the ground; place hands over ears, head between knees*
  - *Make yourself the smallest target possible*



## Floods and Flash Floods

- One of the most common natural hazards in Minnesota
- Seasonal snowmelt floods tend to develop slowly
- Flash floods develop quickly leaving little time for preparation
- Risks are greater in low-lying areas, near existing water, behind a levee or downstream from a dam

# Know the Flood Warning Terms

- **Flood or flash flood watch** — conditions exist for possible flooding
- **Flood warning** — flooding is occurring or will occur soon
- **Flash flood warning** — a flash flood is occurring or will occur soon
  - Seek safety or higher ground immediately and avoid flooded roadways

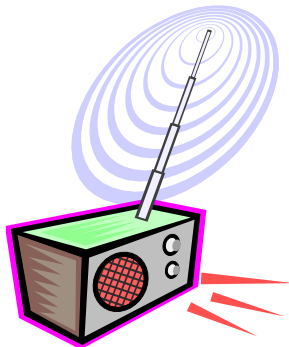
## Before a Flood

- Buy flood insurance (must be at least 30 days ahead)
- Elevate basement furnaces, water heaters, and electric panels
- Install check valves in sewer traps
- Construct barriers or dikes if possible
- Seal basement walls
- Prepare for evacuation if necessary
  - *Have a plan and inform family and neighbors*
  - *Have a “go kit” ready with valuables and important papers and enough supplies to last several days*



## During a Flood - Plan

- Listen to radio or TV for information
- Be aware of streams, drainage channels, and canyons
- Be aware of road and bridge closures; find alternate routes
- Move immediately to high ground if flood waters are near
- Be prepared to evacuate on short notice

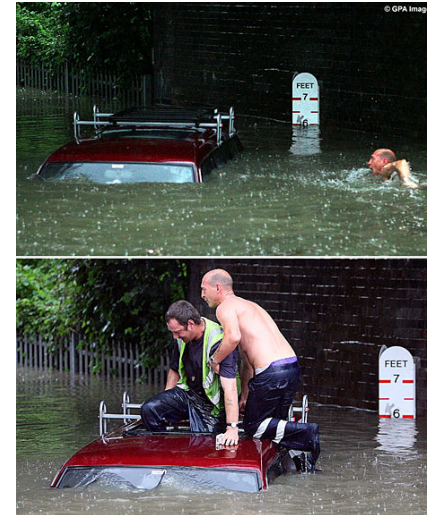


## During a Flood - Prepare

- If you have to evacuate, and time permits:
  - *Secure your home*
  - *Bring in outdoor furniture*
  - *Move essential items to an upper floor*
  - *Turn off utilities*
- Plan an evacuation route and inform family and neighbors of destination

## During a Flood – Don't Drive

- Do not walk or drive through moving water
- Do not drive on flooded roads
- Be aware of downed power lines



*Two feet of water can move a car  
So turn around, don't drown!*



## After a Flood

- Return home only when authorities indicate it is safe
- Use caution when entering buildings
- Service damaged septic tanks, cesspools, pits, and leaching systems
- Clean and disinfect damaged property
- Have alternate sewage/toilet capacity



# Tornado Drill Day

## Tornado Safety Information

- Nature's most intensely violent storm
- Minnesota averages 40 tornadoes per year – but in 2010 the state had most tornadoes of any state in the U.S. with 113.
- Tornadoes may strike quickly with little or no warning
- Tornadoes can occur any time of day or night but often occur in the late afternoon or evening



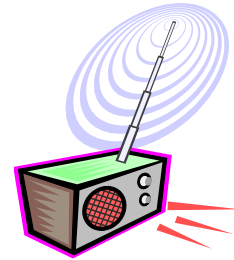
## Know the Tornado Warning Terms

- **Tornado watch** — weather conditions are favorable for tornadoes; remain alert for approaching storms
- **Tornado warning** — a tornado has been sighted or indicated by weather radar; take shelter immediately

# Before a Tornado

## During a Tornado Watch

- Be alert to changing weather conditions
- Know your surroundings and location
- Have a plan for severe weather
- Have a programmed NOAA Weather Radio operating
- Listen to radio or TV or check the internet frequently for up to date information



## During a Tornado Warning

- Find strong shelter immediately
- Seek a small interior room
- Get away from glass windows
- Leave mobile homes or trailers
- If outside, lie flat in a ditch or depression and cover your head
- Do not get under an overpass or bridge
- If in a vehicle – stop and find shelter in a strong building nearby immediately
- Watch out for flying debris



# Tornado Drill Day

- **Afternoon Tornado Drill Thursday, April 16 - 1:45 p.m.**
  - NWS will send simulated warnings to NOAA Weather Radios
  - All counties across Minnesota sound their outdoor warning sirens
  - Schools, businesses, and organizations are encouraged to conduct a tornado drill at this time to practice their own tornado sheltering plans
- **Evening Tornado Drill Thursday April 16 - 6:55 p.m.**
  - Severe weather and tornadoes occur most often between 3 and 8 p.m.
  - Second drill allows 2<sup>nd</sup>-shift workers and families at home to practice their sheltering plans
  - County participation is voluntary (check map)



# Tornado Drill Day – How to Participate

## Prepare Your Home

- Create or update emergency plans with your entire family
- Practice your family plan during the evening tornado drill at 6:55 p.m.
- Check emergency plans at places your family spends time, such as schools, workplaces, churches, markets, or sports facilities
- Share the plans for these areas with your entire family

## Prepare Your Neighborhood

- Involve your neighbors. Find out who has special needs and might need help in an emergency
- Plan with your neighborhood. Ask your Home Owners Association, your Tenants Group or Neighborhood Civic Association to make emergency preparedness an agenda item during your next meeting
- Help neighbors get informed. Host a neighborhood preparedness meeting. Invite your local emergency manager or responders to help lead the discussions



# Tornado Drill Day – Participate

## Prepare Your Community

- Include preparedness activities at community events
- Host a Local Preparedness Fair
- Create or participate in a Citizen Corps - Community Emergency Response Team (CERT)

## Prepare Your Workplace

- Designate critical function or emergency personnel.
- Organize an emergency preparedness procedures review
- Host a disaster preparedness brown bag lunch for employees.
- Get a NOAA Weather Radio
- Distribute a facility emergency plan
- Conduct business continuity training
- Schedule an emergency exercise or drill



# Extreme Heat

- Heat-related fatalities outpace deaths in several other weather categories
- Based on a national average from 1992-2001, excessive heat claimed 219 lives each year
- By contrast, floods killed 88, tornadoes 57, lightning 52 and hurricanes 15

# Heat Problems

- **Heat cramps** are muscular pains and spasms that usually occur in the legs or abdomen caused by exposure to high heat and humidity, and loss of fluids and electrolytes.
  - Find a cool location to rest and take fluids (water or sports drinks)
- **Heat exhaustion** typically involves the loss of body fluids through heavy sweating during strenuous exercise or physical labor in high heat and humidity
  - Signs of heat exhaustion include cool, moist, pale or flushed skin; heavy sweating; headache; nausea; dizziness; weakness; and exhaustion
- **Heat stroke** (also known as sunstroke) is a life-threatening condition in which a person's temperature control system stops working and the body is unable to cool itself
  - Signs of heat stroke include hot, red skin which may be dry or moist; changes in consciousness; vomiting; and high body temperature.
  - Heat stroke is life-threatening. **Call 9-1-1** immediately



## During a Heat Wave

- **Drink more fluids** – avoid alcohol and high-sugared drinks
- Stay in an air-conditioned place during the hottest parts of the day.
- If air conditioning is not available, be in a location with adequate shade, air-flow and ventilation
- Make use of public venues or cooling centers if necessary
- Wear lightweight, light-colored, loose-fitting clothing
- NEVER leave any person or animal in a closed, parked vehicle

# Heat Index

- The Heat Index is a measure of how hot it feels when relative humidity is added to the air temperature
- Heat Index values are based on shady conditions with a light wind; exposure to full sunshine can increase values by up to 15 degrees

**HEAT INDEX CHARTS**

Locate the heat index by comparing the temperature across the top row with the humidity or dewpoint

Relative Humidity (Percentage)	Temperature (Degrees Fahrenheit)									
	80	82	84	86	88	90	92	94	96	98
20	79	80	81	83	85	86	88	90	93	95
25	79	80	82	83	85	87	89	91	94	97
30	79	80	82	84	86	89	92	95	98	101
35	80	81	83	85	87	91	94	97	100	104
40	80	81	83	85	88	92	96	99	103	107
45	80	82	84	87	89	94	98	102	106	110
50	81	83	85	88	91	96	100	104	109	114

## Know the Heat Warning Terms

- **Excessive Heat Warning** - issued within 12 hours of the heat index reaching one of two levels. A warning will be issued if
  - There is a heat index of at least 105°F for more than 3 hours per day for 2 consecutive days, or
  - If the heat index is greater than 115°F for any period of time.
- **Excessive Heat Watch** - is issued when the heat index is expected to be greater than 105°F and nighttime low temperature will be at least 75°F or higher for two consecutive days



# Sources For More Information on Severe Weather and Safety

- [Severe Weather Awareness Week](#)
- [Severe Storms, Lightning and Hail](#)
- [Floods and Flash Floods](#)
- [Tornadoes](#)
- [Alerts and Warnings](#)
- [Extreme Heat](#)

# How to prepare for any emergency

Four simple preparedness steps:

- Have a Family Emergency Plan
- Make a Emergency Supply Kit
- Stay Informed
- Get Involved