

Severe Weather (Lightning, Hail, Heavy Rain)

HAIL is solid precipitation that falls from thunderstorms or beefy showers as round or irregular balls of ice or ice-pellets, generally taken to be 5mm in diameter or larger. Hail originates as a frozen rain drop or graupel that is kept from falling by updraft currents within a cumulonimbus cloud, triggering heavy showers or thunderstorms. Each time the ice pellets or small hail stones are pushed into the cold upper layers, they collide with super-cooled water droplets which freeze to the growing hailstones.

LIGHTNING is a form of electrical discharge between clouds or between a cloud and the ground. The discharge may take place between two parts of the same cloud, between two clouds, or between a cloud and the ground. Lightning may appear as a jagged streak, a flash in the sky, or in the rarer form of a brilliant ball. Thunder is the sound waves produced by the explosive heating of the air in the lightning channel during the return.

Lightning Specifics

- Most lightning strikes occur either at the beginning or end of a storm.
- The average lightning strike is six miles long.
- Lightning reaches 50,000 degrees Fahrenheit, four times as hot as the sun's surface.
- A cloud-to-ground lightning channel can be 2 to 10 miles long.
- Voltage in a cloud-to-ground strike is 100 million to 1 billion volts.
- Lightning is the most dangerous and frequently encountered weather hazard people experience each year.
- Lightning affects all regions. Florida, Michigan, Pennsylvania, North Carolina, New York, Ohio, Texas, Tennessee, Georgia, and Colorado have the most lightning deaths and injuries.
- Lightning is the number-one cause of storm-related deaths.
- Damage costs from lightning are estimated at \$4-5 billion each year in the U.S.
- Around the earth there are 100 lightning strikes per second, or 8,640,000 times a day.
- What is commonly referred to as heat lightning is actually lightning too far away to be heard. However, the storm may be moving in your direction.
- There are approximately 100,000 thunderstorms in the U.S. each year.

Lightning Strike Statistics

- Americans are twice as likely to die from lightning as from a hurricane, tornado, or flood.
- The Federal Emergency Management Agency (FEMA) estimates there are 200 deaths and 750 severe injuries from lightning each year in the U.S.
- 20% of all lightning victims die from the strike.
- 70% of survivors will suffer serious long-term effects.
- Annually, there are more than 10,000 forest fires caused by lightning.

HEAVY RAIN is liquid precipitation in the form of water drops. Drops with a diameter of less than half a millimeter are known as drizzle.

There are three general types of rain: orographic, frontal, and convective. Convective rain is referred to as showers. Showers generally last for less than one hour. Rainfall intensity can be 'light', 'moderate', or 'heavy'. Heavy rain falls at a rate greater than four millimeters per hour.

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Source

Federal Emergency Management Agency

Michigan State Police - Emergency Management & Homeland Security Division

National Weather Service Weather Forecast Office

More Information

<http://www.fema.gov/>

<http://www.ready.gov/>

http://www.michigan.gov/msp/0,1607,7-123-1593_3507---,00.html

<http://www.crh.noaa.gov/dtx/>

Prevention / Mitigation / Preparedness - Severe Weather

Work with the University of Michigan Office of Emergency Preparedness (734) 647-1143 and request guidance as needed.

During severe weather monitor local weather via a battery operated radio, a NOAA Weather Alert radio, the Internet, or television.

Develop a disaster supplies kit as listed on www.ready.gov

Dress appropriately for the weather.

Be aware that several UM locations and some Ann Arbor city parks and golf courses have a lightening detection system that sounds an audible alarm when danger exists. Take immediate action to leave the area or seek appropriate shelter if the alarm is heard.

Designate shelter-in-place areas and train building occupants of their locations.

Hold a shelter-in-place drill at least once per year.

Develop provisions for persons who may be outside of your building when severe weather occurs and the efforts needed to get those persons into a safe shelter. This is especially true if your building is hosting an outdoor event such as a BBQ, etc.

Review the protective actions section of this EOP regarding persons with disabilities.

Response - Severe Weather

Use caution during and after severe weather to avoid any unnecessary accidents.

Unless it is an emergency do not call 911 to receive weather information.

Persons outside should immediately return to a building and shelter in predetermined safe areas.

Stay away from glass windows.

Continue to monitor National Weather Service advisories via radio/television for information on the status of the storm and what action to take.

Once the storm has cleared, a quick assessment should be done to identify persons in need of medical assistance, downed power lines, and other hazards that may exist.

Render first aid to those who need assistance.

Recovery - Severe Weather

If the building has sustained damage, contact Plant Operations (734) 647-2056 for assistance.

Be careful of downed power lines, broken glass, or other debris that may cause a hazard.

Do not touch any downed wires or objects in contact with downed wires, due to electrical hazards.

Contact Plant Operations (734) 647-2059 at once.

Contact the University Risk Management department (734) 764-2200 so claims management and other insurance matters can be handled.