

**The Lutheran University Association, Inc.
d/b/a Valparaiso University**

Outdoor Event Lightning/Severe Storm Safety Policy

PURPOSE AND SCOPE

Lightning is one of the most common and dangerous weather conditions that impacts outdoor events. According to the National Weather Service, during the past 30 years (1979-2008) lightning causes an average of 55-60 fatalities and 400 injuries each year. Most casualties result from inappropriate behavior during thunderstorms, particularly when people are caught outdoors during recreation events or organized sports. Being aware of, and following, proven lightning safety guidelines can greatly reduce the risk of injury or death.

An important step in preventing a lightning strike accident is to adhere to a set of policies and procedures governing what steps are to be taken in the event lightning/severe weather is present. All University sponsored outdoor events must have a lightning/severe weather plan as part of the pre-plan for that event. Individual departments that work outdoors must also plan for lightning/severe weather and establish plans that comply with this policy. The lightning/severe weather pre-plan should include, at a minimum, the following points which are addressed in more detail below:

- Establish a **chain of command** that identifies the individual(s) who have the authority to remove individuals from the field or a given activity.
- Establish a designated **weather watcher**. This is someone who actively watches for signs of threatening weather and informs those who are in charge of removing individuals from the field.
- Have a means to **monitor local weather** forecasts and/or severe weather warnings.
- Have a list of **safe areas for people to find shelter** from the dangerous weather.
- Use specific **criteria for cancellation, suspension, and resumption** of activities.
- Use the recommended **lightning safety strategies**.

A. Chain of Command

To prevent any confusion on the day of the event, University staff responsible for an outdoor event should establish and review a chain of command, as well as the entire lightning and tornado/severe weather policies and procedures as part of pre-planning activities. The responsible staff should also review the established chain of command on the day of an event when inclement weather is a possibility.

B. Weather Watcher

The designated weather watcher will have the duty to be aware of approaching storms and to watch for signs of dangerous weather. In the event there is dangerous weather in the area, it is the weather watcher's responsibility to inform the event manager of the potential danger associated with the incoming weather and make recommendations regarding suspension of event activities.

C. Monitoring Local Weather

The weather watcher may utilize television radar reports, internet radar reports, and/or radio/telephone communications with the Valparaiso University Police Department (VUPD). In the case of athletic events, the Athletics-Recreation Center Training Room may be utilized in the event that radar reports are not available at the athletic field. Monitoring is to be done before, during, and after suspension of any outdoor event. The weather watcher will also watch the skies for flashes of lightning and listen for their accompanying thunderclap. Where available, a lightning strike meter may be used to help monitor weather. The University's Meteorology Department may also be used as a resource in dangerous weather situations.

D. Safe Shelters During Dangerous Weather

An ideal choice for a thunderstorm/lightning shelter is any fully enclosed, normally occupied, or frequently used building. This means the building used has plumbing, electrical wiring, and/or telephone services able to ground the structure, protecting it from being struck. It is important not to be connected to these pathways during the storm. Lightning current can enter a building through electrical and telephone wiring as well as plumbing pipelines. Therefore, it is unsafe to use electrical appliances, phones with cords, showers, and pools. If a phone is needed, it is safer to use a cordless phone or cellular phone.

If a fully enclosed shelter is not available, a fully enclosed vehicle with a metal roof and windows closed is a reasonable alternative. Convertibles, golf carts, and other ATVs such as Gators do not provide protection from lightning and are not considered safe. Contrary to popular belief, it is not the rubber tires on vehicles that provide safety from lightning, rather, it is the metal roof that carries the electrical current from the lightning around the passengers rather than through them. Do not touch any part of the metal framework while inside the car.

Caution! - Small areas/enclosures, such as storage sheds, do not provide enough protection and should be avoided during a thunderstorm. These sheds may actually increase the risk of lightning strike via a “side flash” and cause injury to those inside the shed. A “side flash” occurs when lightning strikes an object and the current jumps from that object to a person near the object. Other unsafe areas are places with tall trees, light or flag poles, metal fences or bleachers, open fields, any point higher than the areas surrounding it, and puddles of water.

In the event that there is no safe structure or location within a reasonable distance, there are some precautions that can be made in order to decrease the chance of becoming a victim of a lightning strike. Suggested locations for a circumstance like this are a dry ditch or a thick grove of small trees surrounded by smaller trees. Those using these types of shelter should assume a crouched position on the ground with feet together and all weight on the balls of the feet. It is important to minimize contact with the ground. Arms should be wrapped around knees with head down and ears covered if possible. Any person who feels their hair stand on end, skin tingle, or hears crackling, noises should also assume the crouched position described above.

E. Criteria for Suspension and Resumption of Activity

Once signs of dangerous weather have been demonstrated to the designated on-site weather watcher, he/she will relay this information using the established chain of command. The weather watcher may use an electronic lightning strike detector or the “Flash-to-Bang” method to estimate how close the lightning strike is to the event area. ***Outdoor events will be canceled and individuals will be instructed to seek shelter if a lightning strike is detected six miles or less from the event.*** (See 30-30 rule below). Outdoor events will also be canceled if a tornado alert is issued or if sustained winds are estimated at 35 miles per hour or more.

F. Lightning Safety Strategies

The preferred method of determining a lightning strike is using an electronic lightning detection device. However, the Flash-to-Bang method for detecting lightning in the area is also acceptable. To utilize this method, the weather watcher begins counting when a lightning flash is spotted. The counting is stopped when the associated clap of thunder is heard. The number of seconds elapsed between the flash of lightning and bang of thunder is then divided by 5. This number then represents the distance, in miles, from the lightning hit. For example, when the Flash-to-Bang count reaches 30 seconds, the lightning has struck 6 miles away. The 30-30 rule states that when the Flash-to-Bang count is 30 seconds or below, all activity should be stopped and all individuals should seek a safe shelter.

The other component of the 30-30 rule involves waiting 30 minutes after the last lightning flash is seen or the last roll of thunder is heard to resume activity. It may seem safe to return to activity after the storm has passed, but this is not true. Lightning can and does strike at least 10 miles away from the storm even after the clouds have moved on. This phenomenon is known as a “bolt out of the blue”. Therefore, every time lightning is seen or thunder is heard, the 30 minute clock should be reset.