Lightning:

An Approaching Thunderstorm: When to Seek Safe Shelter: Lightning can strike as far as 10 to 15 miles from the area where it is raining. That's about the distance you can hear thunder. **If you can hear thunder, you are within striking distance. Seek safe shelter immediately.**

In accordance with KSHSAA protocol-after seeing lightning or hearing thunder no competition or practice will restart for at least a period of 30 minutes. After each strike- a new 30 minutes will begin.

Outdoors: Most lightning deaths and injuries occur in the summer. Though no place is absolutely safe from lightning, some places are much safer than others. If caught outside, the SAFEST location during lightning activity is a large enclosed building, not a picnic shelter or shed. The second safest location is an enclosed metal vehicle, car, truck, van, etc., but NOT a convertible, bike or other topless or soft top vehicle. Do NOT seek shelter under partially enclosed buildings, and stay away from tall, isolated objects. Where organized outdoor sports activities take place, coaches, camp counselors and other adults must stop activities at the first roar of thunder to ensure everyone has time to get to shelter. Leaders of outdoors events should have a written plan that all staff are aware of and enforce.

Indoors: Inside buildings, stay off corded phones, computers and other electrical equipment that put you in direct contact with electricity. Stay away from pools, indoor or outdoor, tubs, showers and other plumbing. Buy surge suppressors for key equipment. Install ground fault protectors on circuits near water or outdoors. Stay away from windows and doors, and stay off porches. Also consider the safety of your family pets during thunderstorms. Dog houses are not safe. Dogs that are chained to trees or chained to wire runners can easily fall victim to a lightning strike.

https://www.weather.gov/media/gid/lightning.pdf

Tornado Behavior:

A. **How to receive Emergency Weather Information:** Because tornadoes can occur with little, if any, warning, minutes and even seconds can mean saving lives! In just five minutes, a tornado may travel two to four miles on the ground. From the time the National Weather Service (NWS) issues a warning, to the time you receive that warning via radio or television, critical minutes may have elapsed. You must be listening when the initial warning is announced or an even greater amount of time will pass! The fastest, most accurate and reliable means of receiving critical weather information at your school is through a NOAA Weather Radio with battery backup and a "tone alert" feature. NOAA Weather Radio (NWR) is operated directly from NWS Offices and is part of our country's National Warning System. NOAA Weather Radio is also an integral part of the new Emergency Alert System, of which all television and radio stations are a part of. When the NWS issues a tornado warning, the "tone alert" (1050 Hertz) is instantly sounded followed by warning information. The NWR "tone alert" is activated when weather warnings as well as severe thunderstorm, flash flood, hurricane, and tornado watches are issued. NWR broadcasts 24 hours a day, seven days a week with current

weather and forecast information, and also provides special updates about sudden weather changes and potentially hazardous weather. If your school is not in a reliable NWR listening area, then below are some suggested alternatives - 1. If you have cable television access, the Weather Channel uses NWS products and broadcasts warnings immediately upon receipt from NWS via a satellite link. Some cable companies include a channel with a local NWS radar display and use NWR as a voice-over. 2. Monitor your local news station. 3. Mobile phone apps from National Weather Service or local news/weather stations. Your source(s) for emergency weather information should be located in the main office or near the person(s) responsible for enacting the plan. Main offices are good because generally there are people around who could hear the alert, and it is close to the public address (PA) system. If using a NWR, the radio should be set at all times in "Alert" mode. Some radios will automatically turn on when an alert sounds while others must be manually turned on. It is probably better to have the type that automatically turns on in case you are out of the room when the tone is activated. If using NWR, the information cycles every few minutes, so if you don't get all the information you need the first time through, it will repeat shortly. Listen for three things: 1) the type of watch or warning, 2) where it is in effect, and 3) how long it is in effect for. The person(s) monitoring must know what action they should take based on this information. It is suggested you have a map nearby for easy reference to counties and towns to locate storms and their movement in reference to your school. There is no need to take emergency action if the warning is not for your location. However, keep in mind, that even if the warning is not for the school's immediate location, weather may change rapidly, and activation of the school's designated, trained spotters is advised. Any watch or warning issued in an adjacent county should heighten your awareness to the potential for severe weather to affect your school district.

B. **How will the School Administration Alert Teachers and Students to Take Action?** Most schools utilize a public address (PA) system to talk directly to students and teachers. In some cases, electricity may be lost during a storm before you have activated your plan. Therefore, it is critical to have a back-up alerting device such as a compressed air horn or megaphone. If your school has mobile classrooms or detached gymnasiums that are not part of a PA or intercom system, then special arrangements should be made to notify these areas and to direct the occupants to evacuate to a main building before the storm arrives. Sending "runners" outside to mobile classrooms is not advisable due to the danger posed by lightning and the approaching storm. Wireless communication devices are an effective means for such communication. The plan must also address before and after school activities, and have clear instructions for guests that may not be familiar with the building. Handicapped or learning-disabled students may also require special attention. You may want a teacher to be assigned to each student requiring special attention to see that the student moves to the appropriate place of safety. Your emergency action plan should also provide for hearing impaired students, who may not hear warnings or special announcements. To ensure appropriate action and understanding of your "Call to Action," you must rehearse.

C. Tornado and High Wind Safety Zones in Your School: Schools are sufficiently complex and diverse in design that it is impossible to describe an exact plan here that

will apply to every school. Here are a few general guidelines and basic concepts that can be discussed. The greatest dangers from high winds (tornado, thunderstorm downburst, etc.) are - 1. roof failure 2. breaking glass, and 3. flying debris (airborne missiles). The most dangerous locations are generally large rooms with big expansive roofs such as cafeterias, gymnasiums, and auditoriums. The collapse of the room's load-bearing wall may lead to the failure of the entire roof. Rooms with large windows that may shatter from being struck by airborne missiles or from severe winds are also extremely dangerous. While windows on the side of the school facing the storm are most susceptible, as the storm passes, any windows could potentially shatter. **Small interior rooms, bathrooms, and windowless, interior hallways that are away from exterior doors offer the best protection. Interior load-bearing walls (with short roof spans) provide better protection than temporary or non-load-bearing walls and structures**. If your school has more than one story, evacuate the upper level of your school. **The lowest level is always the safest.**

Below is a list beginning with THE MOST DANGEROUS AREAS: 1. Windows on exterior walls 2. Rooms with large roof spans; mobile classrooms 3. Exterior walls of upper level; 4. Interior walls of upper level; exterior walls of lower level and interior glass. 5. Interior, lower level, non-load-bearing walls.

D. When to Activate Your Plan and When it is Safe to Return to Normal Activities: In a **tornado watch**, outdoor activities should be postponed. Should storms approach, you may want to move students from the most susceptible areas such as mobile classrooms and gymnasiums as a precaution even though a warning has yet to be issued. You may want to post teachers or school personnel trained in spotting severe weather to watch the storms as they approach for the need to take special actions. Your plan should also include secondary forms of communication which would be used should power be lost. Your plan should also address the time of day. You may find it more difficult to implement your safety plan during recesses, class changes, or near the beginning or end of the school day.

If a **tornado warning** is issued for your county an immediate and complete "Call to Action" is needed. If the storm has not yet reached your school, begin moving students from unsafe areas as listed above and post a trained teacher or school employee to keep an eye on the storms as they approach. As the storm nears, move all students to tornado safe areas (interior halls, etc.) and have students and teachers drop immediately into the protective position. Remember that winds may pick-up at the onset of the storm and may or may not drop off prior to the tornado, and that rain may or may not be occurring. Large hail is a signal that you are near the part of the storm in which the tornado would occur. Once the storm has past, students may return to classrooms. If your school is hit, a predesignated safety team should assess damage and injuries....and then notify appropriate law enforcement and medical personnel. Stay alert for the potential for additional storms. One special consideration would be the complication of activating a full "Call to Action" plan during class changes, when the halls are crowded and students may not know where to go. It may be best to hold classes beyond your regular dismissal time until the severe weather threat has passed. Likewise, at the end of the school day, students may need to be held from boarding

buses until the danger has passed. Remember also, that straight-line winds from severe thunderstorms can approach 110mph and can cause as much damage as a moderate tornado.

If a **severe thunderstorm warning** is issued for your county, at a minimum, move students out of mobile classrooms and away from windows. You should have at least several people who know how to shut off the main power (electricity) and gas (if applicable). After a tornado or severe thunderstorm, it may be necessary to shut off the gas and electric supply to the building if damage has occurred to the school.

E. **When to Hold Departure of School Buses:** You will want to consider holding the departure of students to buses whenever watches or warnings are in effect. There are three primary considerations: 1. Upon departure, how long before ALL the students have been deposited safely at home? Include time for the students to walk from their bus stop to their home. 2. How much time do you have before the storms are expected to impact your district? Tornado watches are sometimes issued a couple hours in advance of thunderstorm development. Watches are generally issued for large areas, so even once storms have developed, it may be a couple hours before the storms reach you. On the other hand, it may be a rapidly developing situation with less than an hour before the storms arrive. If you feel that severe weather is not imminent, buses may depart....but notify the drivers about the severe weather threat. 3. If a **warning** is in effect for your county at dismissal time, delay departure of the buses. Escort students that have been already loaded onto the buses back into the school. If condition 2 is less than condition 1, then a delayed departure is recommended. Buses provide no protection from severe storms. If a watch is in effect at dismissal time, your decision become a bit more difficult. Watches are normally issued hours before severe weather is expected to hit but, on some occasions, it may be for rapidly developing situations with less that an hour before the storms arrive. **Your decision will be based upon a judgement call...if you feel the severe weather is not imminent, then buses may depart...but drivers should be notified about the weather situation and instructed to be especially alert to the potential for dangerous weather. If you have any indication that the storm will arrive before students arrive safely at home, then bus departure should be delayed.** It is best to err on the side of caution, because school buses provide no protection from severe storms.

Another consideration may be if a large number of children from your district live in mobile homes. Mobile homes are extremely susceptible to high winds even when properly anchored and tied down, and a storm that would produce minor damage to a school could completely destroy a mobile home. The school provides a much safer environment than a mobile home, and this should be taken into account when deciding whether to send students home, or them at school. Finally, **it must be conveyed to parents that they should not pick up their children at school during severe weather**. They need to understand that the child is far safer at the school with the severe weather plan in place than on the road when a severe storm strikes.

F. School Bus Actions: All school bus drivers should be trained on how to handle severe weather situations. All school bus drivers will have a FOB on their key chains allowing them access to all district school buildings. Although tornadoes are the primary concern

here, large hail, high winds and flooding also pose significant threats. Bus drivers should be able to react quickly and take charge of a severe weather situation. **NEVER ATTEMPT TO OUTRUN A TORNADO!** If a bus driver has reason to believe a tornado is approaching, the following steps should be taken. 1. If you have the time to get to a designated tornado shelter or well-constructed building that you can unload students into, then certainly do so as fast as possible. In a building, move them into the interior or basement of the building away from windows and doors. 2. If no sturdy shelter is available, look for a ditch or low-lying area (preferably without water). Make sure the bus is parked well away (preferably downwind) from the location you have selected. Unload the students to the low-lying area and have them get in position with their hands over their head.

G. Safety During Athletic Events Protecting athletes and spectators once severe storms or tornadoes begin moving into an area is essentially impossible because there is so little time to act and because safe shelter is much more difficult to find for tornadoes than for other types of severe weather. **Suggesting that everyone go home when there is an imminent tornado is not acceptable**, because automobiles are not safe shelters under these conditions. The single most effective tornado precaution an athletic program can take is to obtain accurate, current weather information and shut down athletic events when violent weather threatens.

For tornado safety, athletic programs should: 1. Designate a chain of command for making the decision to remove individuals from an athletic site. 2. Designate an individual who will obtain a weather forecast each day before a practice or event and monitor weather forecasts constantly when there is any threat of severe storms or tornadoes. 3. Athletes and coaching staff should know where the closest "safe shelter" is. Safe shelter for tornadoes is defined as the basement of a sturdy building, away from windows, glass doors and chimneys. If a basement is not available, an interior hallway on the lowest floor is best. Rooms with large, free-span roofs like gymnasiums should be avoided. The inside of an automobile is not a safe place if a tornado is imminent. If no safe building is nearby, individuals should seek shelter in a ditch, ravine, or other place below ground level and stay as low as possible. 4. **Tornado watch or severe thunderstorm watch:** If a watch is issued during a practice, practice can continue, as long as coaching staff and athletes know how to get to nearby safe shelter and Weather Radio is being continually monitored. However, if a watch is issued 3 hours before a game or during a game, the competition should be canceled or suspended. **5. Tornado warning or severe thunderstorm warning**: If a warning is issued during either a practice or game, athletic activity should be suspended and all participants moved as rapidly as possible to safe shelter. Athletic activity should not be resumed until the National Weather Service suspends the warning. Extreme weather conditions threaten the health of athletes, staff and spectators. Before any athletic season begins, policies should be defined for modifying or canceling practices and games under conditions of lightning, severe storms, tornado watch and warning, extreme heat and extreme cold. There are no national standards for such policies. Each athletic program should work with medical advisors, athletic trainers and administrators to come up with a policy that is scientifically valid and acceptable in the community.

KSHSAA GUIDELINES FOR LIGHTNING SAFETY

1. **WHEN THUNDER IS HEARD OR CLOUD-TO-GROUND LIGHTNING IS SEEN, THE LEADING EDGE OF THE THUNDERSTORM IS CLOSE ENOUGH TO POSE A LIGHTNING RISK. SUSPEND PLAY AND TAKE SHELTER IMMEDIATELY.**

2. ONCE PLAY HAS BEEN SUSPENDED, WAIT AT LEAST 30 MINUTES FROM THE LAST SOUND OF THUNDER OR LIGHTNING STRIKE WITNESSED BEFORE RESUMING THE ACTIVITY.

3. ANY SUBSEQUENT THUNDER OR LIGHTNING STRIKE DURING THE 30 MINUTE WAITING PERIOD RESETS THE CLOCK, AND A NEW 30 MINUTE WAITING PERIOD BEGINS.

ANYTIME LIGHTNING CAN BE SEEN OR THUNDER HEARD, RISK IS PRESENT!

SCHOOL CONSIDERATIONS:

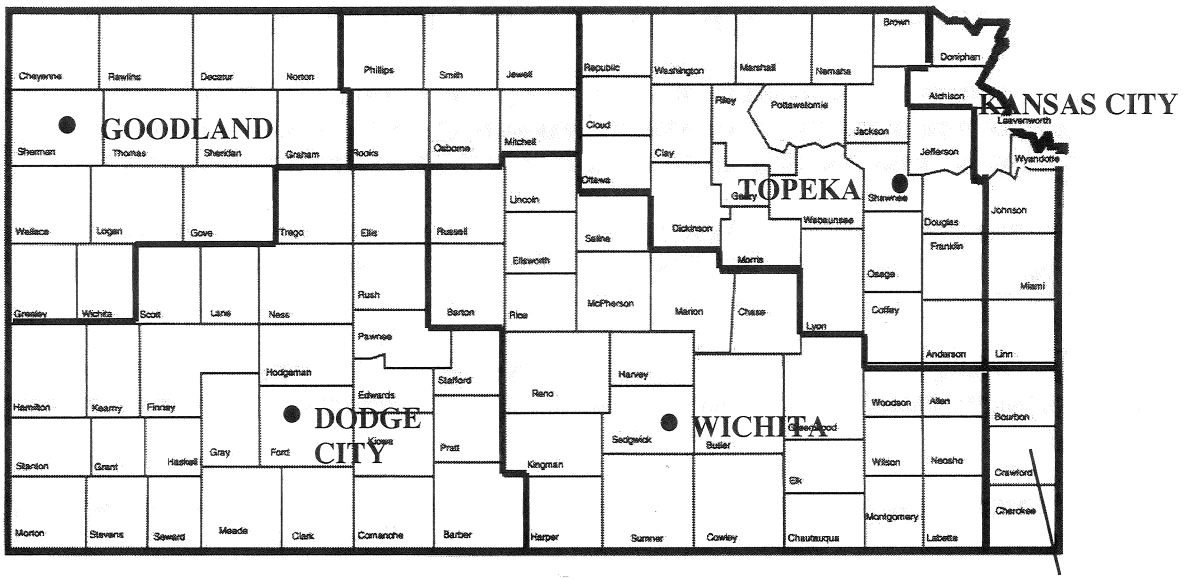
1. A documented plan for handling severe weather situations such as lightning should be in place.
2. The persons responsible for monitoring weather activity and determining when to suspend practice or competition should be identified.
   * Ideally this person will **NOT** be a coach or an official involved in the game or practice, as they may to too involved with their other duties to monitor the weather.
3. There are many different methods of monitoring the weather. The internet and mobile device weather applications are one option. Weather radios are available through the National Oceanic and Atmospheric Administration (NOAA) and the National Weather Service. The Weather Channel can also provide good information on storm movement and strength. Each school will need to determine their most effective means of monitoring the weather.
   National Weather Service contact information, areas of coverage, and weather radio frequencies are provided on the back of this document.
4. All personnel, athletes, and spectators should be clearly informed in advance of available safe structures or shelters in the event of severe weather.
5. The most ideal safe structure is a fully enclosed building with plumbing, electrical wiring, and telephone service which all aid in grounding the structure.
6. Fully enclosed automobiles with metal roofs, including school buses, provide adequate shelter as well.
7. Avoid using bathrooms or showers as shelter areas as the plumbing pipelines provide a path for the lightning to enter the structure. Also avoid using corded telephones or headsets during a thunderstorm, and avoid standing near utilities.
8. If communication is necessary during the storm, cellular and cordless phones are considered reasonably safe.

National Federation of State High School Associations. NFHS Guidelines on Handling Practices and Contests During Lightning and Thunder Disturbances. www.nfhs.org/SportsMed.aspx.

OVER →

SEVERE WEATHER CONTACT INFORMATION
NATIONAL WEATHER SERVICE
GENERAL REGIONS OF COVERAGE

HASTINGS, NE



REGION	PHONE	WEBSITE
Goodland	785.899.7119	www.crh.noaa.gov/gld
Hastings, NE	402.462.4287	www.crh.noaa.gov/gid
Dodge City	620.227.3311	www.crh.noaa.gov/ddc
Kansas City, MO	816.540.6021	www.crh.noaa.gov/eax
Springfield, MO	417.869.4491	www.crh.noaa.gov/sgf
Topeka	785.234.2592	www.crh.noaa.gov/top
Wichita	316.942.3102	www.crh.noaa.gov/ict

NATIONAL WEATHER SERVICE
WEATHER RADIO FREQUENCIES

NWR TRANSMITTER	FREQ.	CALL SIGN	NWR TRANSMITTER	FREQ.	CALL SIGN
Abilene	162.525	WXL71	Joplin, MO	162.425	WXJ61
Bartlesville, OK	162.425	WNG644	Kansas City, MO	162.550	KID77
Beaumont	162.500	WWH22	Kirwin	162.500	KWN59
Belvidere	162.525	WNG534	Lenora	162.425	WWF87
Blue Rapids	162.425	KZZ67	Meade	162.425	WNG555
Cambridge, NE	162.525	KEC39	Neosho, MO	162.450	KJY82
Chanute	162.400	WXK95	Parker	162.525	WZ2512
Concordia	162.550	WXK94	Ponca City, OK	162.450	WWF42
Dighton	162.525	WNG535	Saint Joseph, MO	162.400	KEC77
Dodge City	162.475	WXK93	Sharon	162.400	WZ2511
El Dorado Springs, MO	162.475	KZZ30	Shubert, NE	162.500	KWN41
Ellsworth	162.400	WXK92	Topeka	162.475	WXK91
Gem	162.400	WXK96	Tribune	162.550	WWG22
Great Bend	162.500	KPS511	Ulysses	162.450	WXN81
Halls Summit	162.425	KGG98	Wichita	162.550	KEC59
Hays	162.450	WXM35	Wray, CO	162.475	WXM87