Hazardous Weather
Let’s learn about

TORNADOES
Wichita-Andover Tornado
April 26, 1991

- 55 tornadoes were part of an outbreak
- 30 were F2 or larger
- this was the strongest of them – F5

City of Andover
- one ambulance in city
- its only tornado siren didn’t work
- no emergency management office
For how long a time period was the tornado on the ground?

1 hour 13 minutes
or
73 minutes
Towards what general direction (southeast, southwest, northwest, northeast) did the tornado move?

northeast
What was the length of the tornado path?

47 miles
What was the average ground speed of the tornado?

47 mi/1.2 hrs = 39 mi/hr
Based on the scale provided and the path drawn on the map, which of the following was most likely the maximum width of the tornado: 30 feet, 300 feet, 3,000 feet, 3 miles?

3,000 feet
Of the 19 deaths resulting from the episode of severe weather described in this activity, 15 occurred in mobile homes. Thirteen died at the Golden Spur Mobile Home Park shown on the map. What are some of the special dangers of mobile home living?

The structures are not strong and not anchored to the ground in the same manner as traditional homes. The home density is higher than for more traditional homes.
What special precautions should mobile home parks and residents take to reduce severe weather threats?

There should be a central underground shelter or other type of shelter. Transportation needed for the elderly residents.
Andover Today

- county emergency management office
- Golden Spur Mobile Park rebuilt and renamed Andover Estates
- Schools and public buildings now have “safe rooms”
- McConnell Air Force Base rebuilt

Lessons learned were helpful on May 3, 1999 when another powerful tornado swept through the area of Wichita.
More about

TORNADOES
Thunderstorms

- Thunderstorms develop when the air is very unstable
- Some thunderstorms will develop into supercells
- Tornadoes may form within supercells
Tornadoes

- associated with severe thunderstorms
- “tornado season” is the Spring
- extremely low air pressure
Weather conditions that favor tornado development

Moist air is lifted by approaching dry air which creates very unstable conditions.
Wind shear: winds move in different directions as altitude increases. This causes the air to roll horizontally.
A strong updraft will tilt the horizontally rolling air into a vertical position creating what is called a \textit{mesocyclone}. The falling rain creates a downdraft and the wall cloud forms. The moist air condenses to form a funnel which is the tornado.
Cool air from the downdraft eventually chokes off the energy supply for the tornado and it dies out.
One interesting read about hazardous weather

“Warnings” by Mike Smith

Easy-to-follow explanation of why and how meteorologists developed our modern system for observing, predicting, and forecasting severe weather, written by one of the experts
Hazardous Weather

NESTA workshop