

**A category 5 tornado strikes the town of Moore, Oklahoma, destroying three schools and a medical center.**

## Tornado History of Moore, Oklahoma

The city of Moore, Oklahoma and its population of 57,800 people have seen their share of tornadoes. In 1999, a category 5 tornado traveled 6.5 miles through Moore, lasted an hour and 25 minutes, caused 36 *fatalities*, and injured 583 people. Due to so many injuries and *fatalities*, the townspeople began to install storm shelters—strong rooms where families could take shelter in case of a tornado. In the tornadoes occurring after 1999, there was a drop in the number of injuries and *fatalities* because people could hide in the new storm shelters.

In both 2003 and 2010, category 4 tornadoes went through the town, only injuring 138 people and causing 2 *fatalities*. People suffered much less injury than before. Since these events, there were over 3,000 storm shelters built by residents to protect their families from storms. The city of Moore did not install public storm shelters, but they advised people during a tornado warning to try to find a spot below ground, or central in a building away from windows. City officials advised people to cover themselves with blankets, mattresses, coats, and bicycle/ motorcycle helmets to protect themselves from falling and flying *debris*.

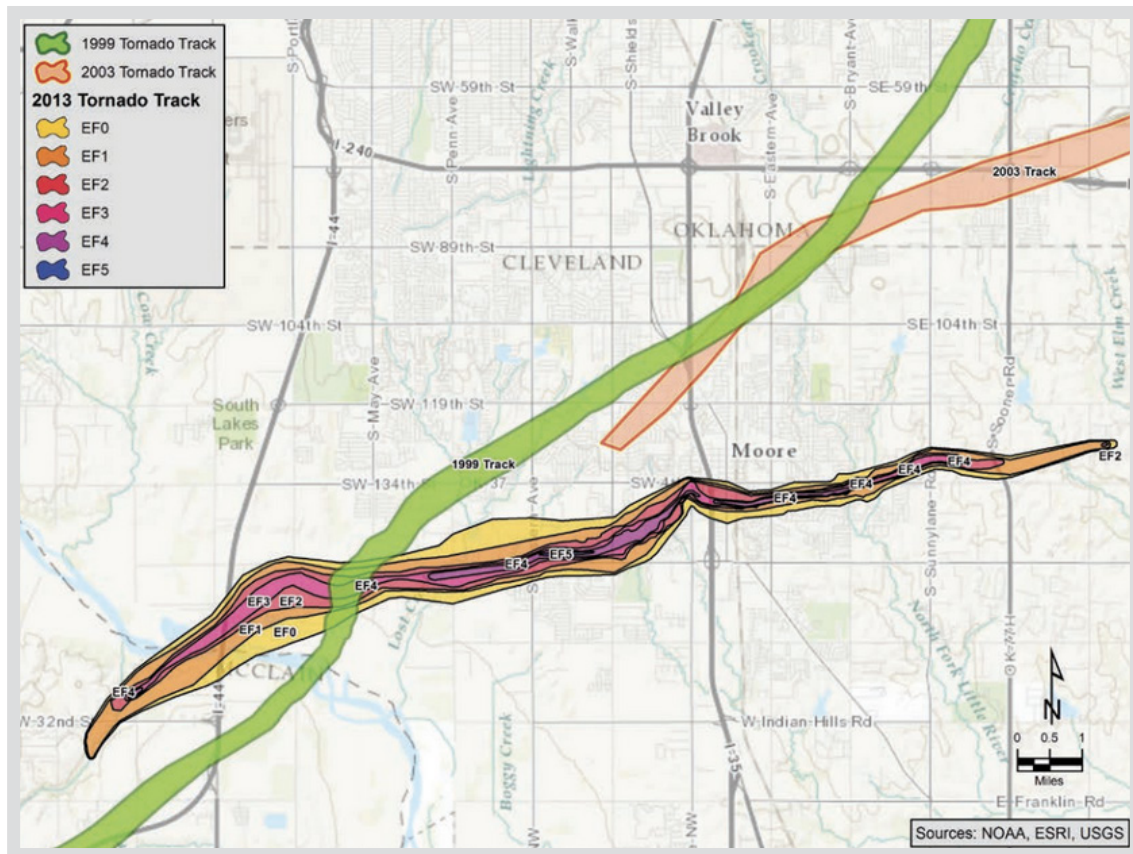
## The Moore Tornado of 2013

On May 20, 2013 at 2:56 p.m., following large thunderstorms the day before, a tornado formed west of the city of Moore, Oklahoma. People on the ground and pilots of a television helicopter spotted the tornado first, and they reported it to the

Categories of Tornadoes	
Enhanced Fujita (EF) Scale EF Category Number	Wind Speed (mph)
0	65–85
1	86–110
2	111–135
3	136–165
4	166–200
5	200+



Category 5 tornado of 2013 (Gabe Gafield). <https://www.weather.gov/oun/events-20130520-ef5tornado> (accessed March 12, 2020)



Pathways of 1999, 2003, and 2013 Tornadoes in Moore, Oklahoma (NOAA, ESRI, USGS). <https://www.fema.gov/media-library/assets/documents/100807> (accessed March 12, 2020)

weather service. Immediately, the weather service issued a tornado warning for the city of Moore. With this warning, the people in the town began to gather their families and seek safety. The tornado started west of the city of Moore, traveled east to cross the Canadian River, and then began to strike the more heavily populated city. In town, the tornado traveled through Briarwood Elementary and Plaza Towers Elementary Schools, right at the end of the school day. At Briarwood, the students found shelter in classrooms, hallways, and bathrooms, and they used books to protect their heads. Partway through the tornado strike, another teacher moved students into the bathrooms, which saved their lives, as the walls fell over at the same



A family leaves their underground shelter after the 2013 Moore tornado (Reuters). <https://www.nytimes.com/2013/05/22/us/shelter-requirements-resisted-in-tornado-alley.html?searchResultPosition=1> (accessed March 12, 2020)

time a car landed on the wall they had just moved away from. Some teachers and students sheltered in the hallways of the Plaza Towers School. Again, like at Briarwood, when the roof started to blow away, teachers moved the students into the bathrooms where the closely-spaced walls provided a stronger shelter.

The tornado continued eastward and hit the Moore Medical Center at 3:15 p.m., breaking windows and collapsing parts of the building. Some of the medical workers survived by *sheltering* in a large freezer. The tornado traveled south as it crossed the I-35 freeway, then continued eastward, passing through neighborhoods and destroying homes. It then struck the Highland East Junior High School, where it destroyed the gymnasium. The only building in the gym to survive was the coach's office, which had closely-spaced walls and was central in the building. The tornado eventually weakened 4.8 miles east of Moore, at about 3:35 p.m. It had traveled over 14 miles. The average speed of the tornado as it traveled through the town of Moore was approximately 21 miles per hour (mph), but its winds reached over 200 mph.

Even though some homes and businesses had storm shelters, there wasn't enough space for everyone. Over 12,000 homes were damaged or destroyed during the tornado. Newer schools were equipped with storm shelters for the students; however, older school buildings like Briarwood, Plaza Towers, and Highland East didn't have storm shelters available to students and teachers. Rescue workers and neighbors joined together to search the rubble for anyone missing. In the end, there were 24 *fatalities*; 10 were children, including 7 students who died at Plaza Towers Elementary School. About 320 community members were injured. It was a devastating event for the citizens who call Moore their home.



Briarwood Elementary student bathrooms remain standing after an EF-5 tornado struck Moore, Oklahoma on May 20, 2013. (copyright Gene D. Rhoden/Weatherpix).



Aerial photo of Plaza Towers Elementary School destruction after the 2013 tornado (Paul Hellstern) <https://oklahoman.com/gallery/6028801/plaza-towers-damage> (accessed March 12, 2020)

## Tornado Hazard Risk in California

Tornadoes here in California are not as threatening as the ones seen in the Midwest states, but should still be considered dangerous. Most California tornadoes last only a few minutes or less and cause very little damage; however, wind speeds near a tornado event can still cause bodily harm with flying objects. In recent history, a majority of the tornadoes have been reported in the central valley and have not always resulted in touchdowns or generally occur in *sparsely-populated* areas.

