

## NATURAL ENVIRONMENTAL RISKS IDENTIFIED BY FEMA

about a year ago, I discovered that FEMA— the Federal Emergency Management Agency—had surveyed 18 types of potentially catastrophic disasters, cataloguing them by County, Borough or Parrish for each such region throughout the 50 States.

FEMA created an interactive map on their website. The project is named “The National Risk Index,”

You can look it up for yourself; presently, at:  
[hazards.FEMA.gov](https://hazards.fema.gov)

My goal was to pick the one most significant risk, in hopes that during my time on the Commission, I might, with the aid of other Commissioners, achieve at least one worthwhile objective, to significantly improve the lives of Austin residents

When I looked at the risks for Travis County, which is nearly synonymous with Austin, although there are differences, I was completely surprised by what the data shows.

Ask nearly anyone in Austin what the biggest natural climate threat is in Austin and they will say “flooding!” We have flooding; significant work has been done, and is ongoing, to reduce the risk of flooding, but we’ve been under flood warnings just last week; flooding continues to be a significant risk.

But Austin is also at significant risk for so many of the potential disasters FEMA identified, it’s

easier to list the few we Don't have to worry about:

- avalanche, coastal flooding, tsunامي, volcanic activity, and probably earthquakes.

By FEMA's calculations, which monetize risks, drought is currently scored "relatively low" based on crop valuations. (Those of us trying to keep our landscaping alive might think differently!)

Travis County is at relatively high risk for so many potential natural catastrophic disasters, we score in the top five percent most vulnerable counties in the entire country.

Travis County—and Austin—are, based on collected historical local data from NOAA, from 1950 to the present, at "relatively high risk" from seven categories:

- flooding, heat wave (a new category added for 2023), ice storm, lightening, strong winds, winter weather, and cold wave.

- Wildfire risk is "relatively moderate," and hurricanes "relatively low" risk.

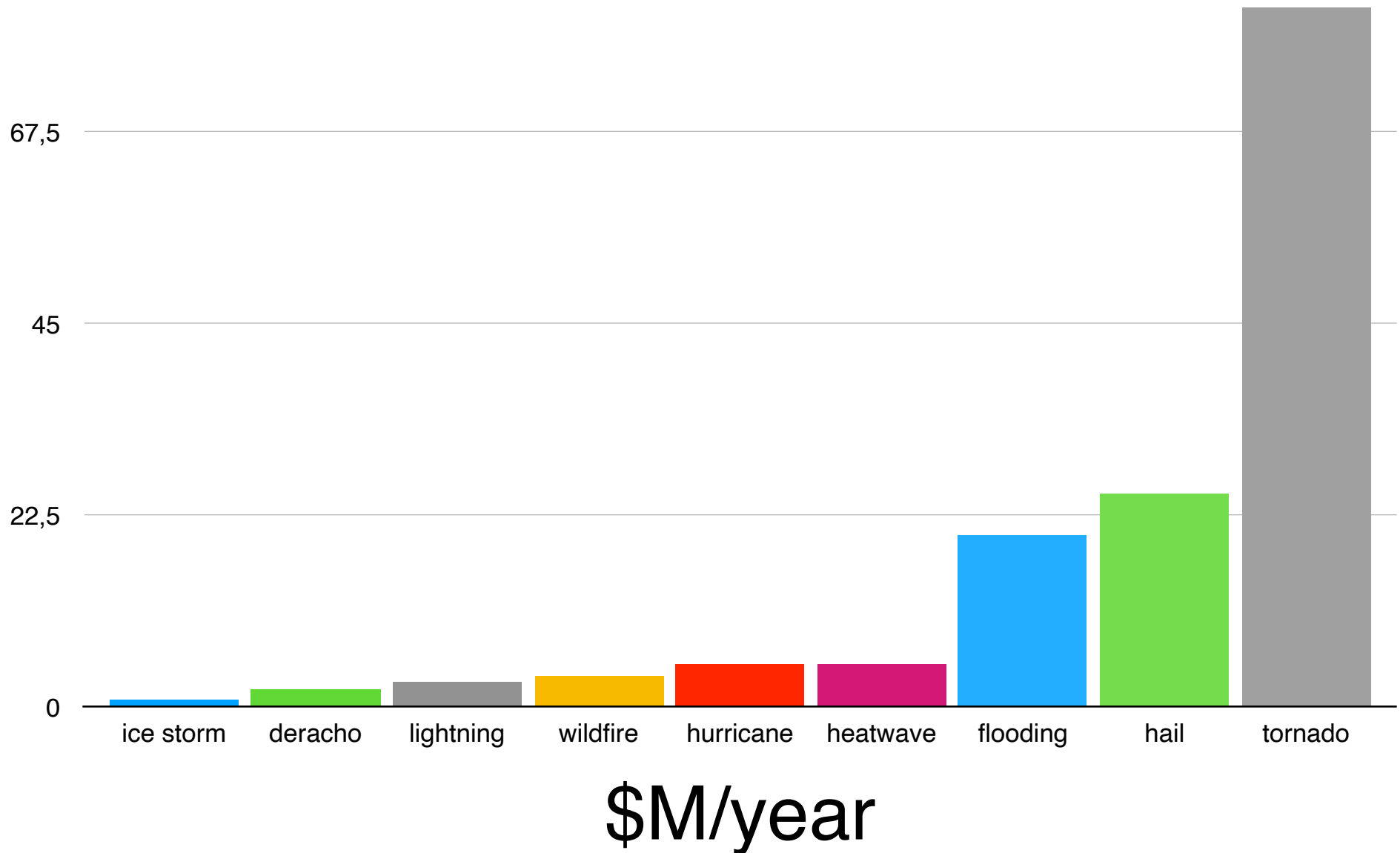
TWO categories of risk are classified as "Very High" —HAIL, and TORNADOES

Note that FEMA has decided not to factor projections related to climate change into their Calculations, yet we all are aware that globally, weather patterns are becoming less predictable, while storms are also more unpredictable, stronger and more frequent.

As one effect from climate change, hail is increasingly more destructive. Many car owners, not waiting for the auto manufacturers to act are personally installing carbon fiber protection on the roof of their cars. Insurance companies have noticed too, and have increased owners' deductible for hail damage.

My focus tonight is on tornadoes, but note that increasingly larger hail is a significant threat which needs to be addressed

TORNADOES: This graph, which is based on FEMA data, shows why we cannot ignore the potential threat of a tornado disaster: As damaging as multiple other potential weather events have proved to be, a tornado of significant magnitude will—at some point—prove costlier in physical damage and loss of life than all of the other risks combined:

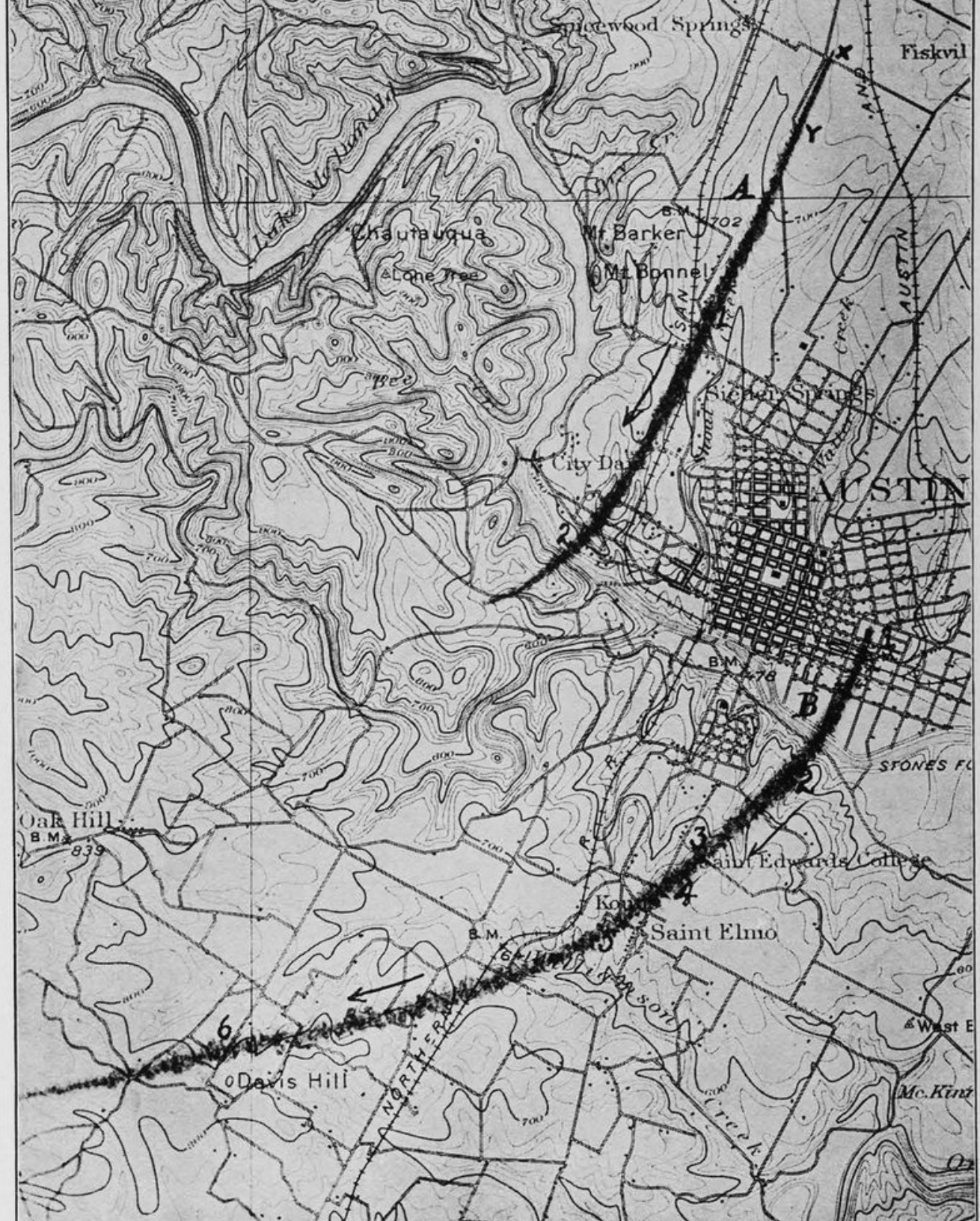


In the ten plus years I've lived in Austin, I've heard multiple theories about why Austin is NOT at risk for tornadoes: "because we're protected by the hills," and "tornadoes don't hit cities." These are myths. I've given this a lot of thought. I've concluded that aside from the facts—that Austin averages 1 tornado every other year—we are far more motivated by our own experience than science. In general, there are people who have experienced a tornado—and those who haven't.





Above is a photo taken almost 101 years ago —on May 20, 1922, of “twin tornadoes which hit Austin, the larger southeastern tornado damaged St Edward’s College, destroyed vacation cabins at Deep Eddy, at the Woodward auto manufacturing Plant, it caused damage and f Killed workers there, then traveled through farmland, and destroyed a farmhouse, killing the four people inside. This map shows the paths of the tornadoes.



These photos aren't very compelling, I realize, because these tornadoes happened so long ago. Meteorologists will tell you, however, that where a tornado may hit is not determined by the ground below, but by the severe wind patterns overhead.

"Supercells" when they form overhead, can be seen on radar; last March, a tornado warning was issued for Austin; residents could watch the supercell activity on radar on their cell phones, as the storm moved over Austin, and a tornado briefly touched down in Round Rock, damaging several houses, before moving north, causing further damage. In Round Rock, the tornado was determined to be an EF-3 in magnitude.

Eighty percent of the 1000 tornadoes which touch down yearly in the United States are in the less severe categories—EF-0 to EF-3, although an EF-3 is powerful enough to destroy many homes. Trailer homes are destroyed. Houses built before more stringent building codes were adopted are also at higher risk.

Thirty percent of houses in Austin were built before 1986. The most devastating danger from tornadoes is flying debris. When a tornado touches down, it picks up everything in its path, like a monster vacuum cleaner. Tornadoes which stay on the ground, can travel at 40 miles an hour. They may expand, as they accumulate more debris, and the most powerful have grown to be a half-mile wide. An EF-5 tornado, with winds in excess of 200 mph, rips up everything in its path; even blacktop on roads. Houses, trees, shrubs and even lawns are swallowed up.

When such a tornado hits a town or city, nothing remains afterward except the foundations of houses. Some of you may remember the Jarrell tornado, May 27th, 1997; An EF-5 tornado, clocked at 261 mph, it killed 27 people in Jarrell, leveling parts of the town. The storm system touched down 20 times;,, generally moving south, along I-35, but passed along the western outskirts of Austin, killing a man living

in a trailer, destroying his trailer and truck. The storm killed 30 people; another 33 were hospitalized. Damages were estimated at \$126 million dollars.

During the pandemic, the City of Austin outsourced an updated Hazard Mitigation Plan, which was produced, making extensive recommendations, but left the details to be filled in by the City.

The Austin City Council voted \_\_\_\_\_2022, to approve the plan, which was then given to the City of Austin to take action.

FEMA is required, under the federal Stafford Act, to set aside a certain percentage of their funding—about 7%—to be used for mitigation.

The idea of mitigation is self-evident; we all know the wisdom: “A stitch in time saves nine,”

Yet time after time, we fail to act in advance; too often, the political will to act often comes only in the aftermath of disaster.

With FEMA grant money available, Austin can apply for a number of grants, including projects to build community shelters for those living in trailer homes, apartments and condominiums.

Almost no Austin housing has basements; sheltering in interior spaces will not provide the safety that a FEMA-approved “safe house” will, in an EF-4 or EF-5 tornado, in even the houses with the best building codes. Those in older housing, and in trailer parks will be vulnerable in less-severe tornadoes.

When I talked to Juan Ortiz, more than a year ago, he outlined a plan to apply for a single grant, which would allow some Austin residents to apply for significant assistance to build home “safe houses.”

Holly Fisher, then regional coordinator in charge of grant applications for District 6, said some governmental bodies were applying for as many as 15 grants. The process required by FEMA is so complicated, other cities have complained it seriously undermines the process. That's clear. You have only to read the published requirements on-line.

Yet, Austin is no longer the small hamlet it was in 1922. With the current population density, a similar EF-4 or EF-5, should it take the path it did 101 years ago, could destroy thousands of homes, and those inside. For those living in older housing and trailer homes, even a much weaker tornado could be deadly.

The City-approved Hazard Mitigation Plan calls for hardening critical infrastructure, such as our drinking water and waste water sites and emergency command centers. The plan outlines an extensive and comprehensive plan.

Conventional wisdom, even from meteorologists, is that most tornadoes are north of Austin. Yet it's also known that tornadoes have been recorded in every part of the state. Saturday, a tornado struck Laguna Heights, near Port Isabel. The tornado was rated an EF-1, with wind speeds between 86–110 mph.

Yet one person died when a mobile home was destroyed and 12 people are reported injured. Other properties were damaged, but the extent of damage wasn't yet known.



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# CITY OF AUSTIN **HAZARD MITIGATION ACTION PLAN**



## **UPDATE 2021**

Maintaining a Safe, Secure, and Sustainable Community

