



# Addressing Civic Issues of Unpreparedness for Natural Hazards in Tennessee

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## Abstract

The purpose of this research project is to map out natural hazard risk zones in Tennessee and equip high schools with knowledge on natural hazards they are most susceptible to. A survey was administered to locals of Murfreesboro, TN and MTSU students to provide current statistics on public knowledge of natural hazards. We then isolated tornadoes, floods, and earthquakes and identified the areas of their likelihood in Tennessee. With this knowledge, we hypothesized methods to educate high school students and their families prior to and in the event of natural hazards specific to their risk zones.

## Summary Public Knowledge

In order to determine the preparedness of the general public, we surveyed thirty people ranging in age from 15 to 50 years old. 85% of the participants surveyed had been residents of the Middle TN area for at least five years. Approximately 85% of the participants were freshman and sophomore college students who attended a high school in the Middle Tennessee area. When asked if they felt that their high schools were prepared for tornadoes, floods, and earthquakes, 70% of the participants surveyed answered that their high schools were not. Seventy percent of the people surveyed also believed that high schools in the Middle TN area need to find ways to educate their students on potential natural hazards.

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## Risk Zones Analyzed

Very High Risk: overlap of major cities, flood, and tornado areas  
High Risk: overlap of low income, tornado, and earthquake areas  
Moderate Risk: overlap of low income and earthquake areas  
Low Risk: no risk area overlap

## Tornadoes



## Earthquakes



## Floods



## Tornadoes/Floods/Earthquakes



## Vulnerabilities

Major Transportation routes: Major Cities: Moderate to Low income areas:



## Hazards/Vulnerabilities

Tornadoes: Major Transportation routes: Floods: Major Cities: Earthquakes: Moderate to Low income areas:



## Risk Levels

Very High Risk:   
High Risk:   
Moderate Risk:   
Low Risk:



## Proposal for Natural Hazards Education in High Schools

Schools should implement more drills throughout the year to practice what to do in the event of natural hazards.

School districts should dedicate more time and resources into researching common hazards in the area.

### Tornadoes

- Establish safety protocols/tornado safe zones
- Establish nearby first responders
- Text Message alerts
- Invite safety officials to educate students on tornado safety

### Floods

- Establish rainfall levels that warrant school closings
- Establish nearby first responders
- Text message alerts
- Invite safety officials to educate students on floods

### Earthquakes

- Establish earthquake safe zones
- Establish nearby first responders
- Text message alerts
- Invite safety officials to educate students on earthquakes



Nashville Flood, 2010. Tennessee.com



Murfreesboro Tornado, 2009 Rutherfordcountyttn.gov

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