

TEMP that formed the basis for the state emergency management program until 1993. In 1993, the emergency planning staff, using concepts contained in the 1986 TEMP, as well as the new ESF format, developed a new sub function. The response to the threat for Terrorism (ESF 13.5) was addressed in the revision.

In 2001, the TEMP had two new annexes added to ESF 8 – Public Health and Medical Services, the Chemical and Bioterrorism Response Plan and the Influenza Pandemic Response Plan. The TEMP also revisited ESF 12 to include a new Governor’s Interagency Energy Policy Work Group and added a completely new ESF, Animal Housing and Care Services, ESF 16.

The Chemical and Bioterrorism Response plan addresses improving the basic surveillance, epidemiology and laboratory capacity of the Department of Health, which will increase the likelihood that an unannounced event causing a disease outbreak or chemical injury will be detected rapidly. The Influenza Pandemic Response Plan addresses the threat of a possible future influenza pandemic in Tennessee. This plan represents an initial threat analysis and a broad series of guidelines for action in case the influenza pandemic threat is realized.

For ESF 12 – Energy, Governor Don Sundquist established by Executive Order 27 on July 24, 2001, an Interagency Energy Policy Work Group which took a comprehensive approach to the energy policy in our state to include an evaluation of new and existing sources of energy, energy uses, and new methods for energy conservation. ESF 16 – Animal Housing and Care Services, function is designed to establish a multifaceted and coordinated approach by the USDA, APHIS, Veterinary Services, and the Tennessee Department of Agriculture for initial response to animal health emergencies.

As a result of the terrorist attack on the United States on September 11, 2001, the Federal Government established the Federal Department of Homeland Security which by Presidential Directive folded FEMA and other federal agencies into a new comprehensive department which would be responsible for all domestic preparedness, response and recovery from all natural and technological disasters or acts of terrorism. The President issued Homeland Security Presidential Directives HSPD-5, HSPD-7, and HSPD-8 which set into place a number of new guidelines and policies which restructured the federal government disaster response system. A new National Response Plan (NRP) was created to replace the old Federal Response Plan (FRP) and a new coordinating system designated the National Incident Management System (NIMS) was propagated and required for inclusion within state emergency management systems. The Presidential Directives also created the National Preparedness Goals, Target Capabilities List and the Universal Task List and each of these policy documents were integrated into the construction and development on the TEMP. All of these guidance materials were issued after 2001 and continued through 2006. Then in late 2006, early 2007, the National Response Plan was revised and the title changed to the National Response Framework to represent the lessons learned during Hurricanes Katrina and Rita.

In 2006, several new annexes and appendices were added to the TEMP. To each ESF, new NIMS language and a NIMS chart were added along with a Disaster Operations Guide for the lead agency tasked.

All of the state agencies tasked in the TEMP have provided input into its development. In addition, concepts outlined in FEMA's CPG 101 (2009), Guide for the Development and Maintenance of State and Local Emergency Operations Plans, and CPG 1-8a, Guide for the Review of State and Local Emergency Operations Plans, have been incorporated to the extent possible. Additionally, a revised Hazard Risk and Analysis was accomplished in mid 2009 that provided the contextual framework for the development of concepts utilized within the plan.

Emergency planning is a very dynamic field. Natural and man-made disasters continue to occur, and the local, state, and federal response structure will continue to adapt to the pressures brought about as a result of those events. Continuous evaluation of the response to these situations will inevitably lead to new and more efficient emergency planning concepts. Additionally, drills, tests, and exercises are used to identify weakness in the coordination of response activities. Lessons learned from both the exercises and actual events will be used to formulate changes in procedures that will be incorporated into future versions of the Tennessee Emergency Management Plan. Lessons learned from the after-action reports and studies of the response to the catastrophic disasters associated with Hurricane Katrina and Hurricane Rita have been utilized to make refinements and adjustments to the TEMP.

In 2007, Tennessee joined 11 other states to earn full accreditation from the Emergency Management Accreditation Program (EMAP). Tennessee was one of only ten states that passed the 2006 National Plan Review. Guidelines and considerations involved in the National Plan Review program instituted by the Department of Homeland Security at the instruction of the President and Congress and EMAP guidelines have been included in the TEMP.

In 2008, Hurricane Gustav caused the evacuation of 6,000 New Orleans citizens to Tennessee. During the After Action Review, it was identified that a better span of control and communication with the affected TEMA Regions needed to be achieved. This led to the change in procedure of Direction and Coordination from using Section Chiefs to using Branch Chiefs; and from communicating directly with the counties to communication with the TEMA Regional Coordination Centers.

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## **HAZARD IDENTIFICATION**

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In 2009 TEMA conducted a Hazard and Risk Analysis to update the State of Tennessee Hazard Assessment Guide. The Hazard Assessment Guide is used to define the Hazards of Prime Concern to the State of Tennessee.

With some obvious exceptions, the State of Tennessee is subject to the same myriad natural, technological, and human-caused hazards as other states. However, the degree to which the aforementioned hazards affect the State of Tennessee differentiates it from the rest of the Nation. Consequently, those hazards possessing the greatest potential for severely affecting the physical and socio-economic environs of the State became the Hazards of Prime Concern. (See NOTES 1-2 and Tables 1-2) The State of Tennessee Hazard Mitigation Plan prioritizes the hazards of Prime Concern to Tennessee. The Hazard Mitigation Plan is an appendix to the TEMP under separate cover.

**NOTE 1:** Natural hazards are emanating or resulting from either climatologically or geological forces or the interaction of the same.

**NOTE 2:** Technological hazards are those caused by commonplace tools, machines and substances while Human-caused are those resulting from the inadvertent use or deliberate abuse or misuse of biological and/or technical catalysts.

**Table 1-State of Tennessee Hazards-Natural**

HAZARD	Probable	Possible	Unlikely	No Threat
Avalanche <sup>1</sup>			X	
Drought		X		
Earthquake		X		
Extreme Temperatures	X			
Erosion				X
Famine <sup>1</sup>			X	
Fire	X			
Flood	X			
Geologic	X			
Glacier/Iceburg <sup>2</sup>				X
Hurricane <sup>1</sup>			X	
Range Fire <sup>1</sup>			X	
Severe Storm	X			
Severe Winter Storm	X			
Tornado	X			
Tropical Cyclone <sup>2</sup>				X
Tsunami <sup>2</sup>				X
Volcano				X

<sup>1</sup> Due to the unlikelihood of occurrence, Range Fire, Hurricane, Avalanche, and Famine were excluded from the in-depth review/evaluation process.

<sup>2</sup> Some events were conceivable but highly improbable if not impossible. Consequently, erosion, tsunami, volcano, glacier/iceberg, and tropical cyclone were considered NO THREAT to the state.

Ref: State of Tennessee Hazard Assessment

**Table 2-State of Tennessee Hazards-Technological/Human-Caused**

HAZARD	Probable	Possible	Unlikely
Biologic (Human/Animal) <sup>1</sup>		X	
Civil Disturbance <sup>2</sup> (See NOTE)		X	
Communications Failure <sup>1</sup>		X	
Dam/Levee Failure <sup>1</sup>		X	
Enemy Attack/War <sup>2</sup> (See NOTE)		X	
Energy Failure <sup>1</sup>		X	
Financial System Collapse <sup>1</sup>			X
Hazardous Materials (HAZMAT) <sup>1</sup>	X		
Terrorism <sup>2</sup>		X	
Transportation <sup>1</sup>	X		

<sup>1</sup> Accidental

<sup>2</sup> Intentional

Ref: State of Tennessee Hazard Assessment

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## NATURAL HAZARDS OF PRIME CONCERN

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### ***Drought***

A drought is a prolonged period of deficient rainfall. It can further be defined according to meteorological, hydrological, or agricultural. The potential is present for such events to affect the entire state. The State of Tennessee experienced a severe agricultural drought during 2007 that began in 2004, which affected Franklin, Moore and Lincoln Counties.<sup>1</sup>

### ***Earthquake***

An earthquake (also known as a tremor or temblor) is the result of a sudden release of energy in the Earth's crust that created seismic waves. Earthquakes are recorded with a seismometer, also known as a seismograph. The moment magnitude of an earthquake is reported and measured via the mostly obsolete Richter scale while the intensity of shaking is measured via the Modified Mercalli scale.

At the Earth's surface, earthquakes manifest themselves by shaking and sometimes displacing the ground. The shaking in the earthquakes can also trigger landslides and occasionally volcanic activity.

In its most generic sense, the word *earthquake* is used to describe any seismic event – whether a natural phenomenon or an event caused by humans – that generates seismic waves. Earthquakes are caused mostly by rupture of geological faults, but also by volcanic activity, landslides, mine blasts, and nuclear experiments. An earthquake's point of initial rupture is called its focus or hypocenter. The term epicenter refers to the point at ground level directly above this.

Each year numerous seismic events occur – largely unfelt by the populace. Over the past few years, several have been large enough to be felt in the western portion of the state adjacent to what is known as the New Madrid Seismic Zone (NMSZ). The NMSZ is the most seismically active area east of the Rocky Mountains. The area with the greatest potential for earthquakes in Tennessee, therefore, is the western third of the state. A series of large events occurred during the winter of 1811-1812 that caused the formation of Reelfoot Lake in northwestern Tennessee. An equivalent event today would wreak havoc on a wide section of the Mid-South, including the Memphis area. Fortunately, the vast majority of these events are detectable only with sensitive instrumentation. In terms of response, the state could experience a relatively significant earthquake every 25 years. There is concern, however, that a large magnitude event grows more probable with each passing day. Such an event could directly affect more than 50 percent of the state's

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<sup>1</sup> Data by Allen R. Coggins (n.d.) from historic references, an analysis of National Weather Services data and Tennessee Department of Agriculture crop records.