

**CHAPTER THREE
SECTION 3.1
HAZARD IDENTIFICATION
AND ASSESSMENT OVERVIEW**

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HAZARD IDENTIFICATION AND ASSESSMENT

Only natural hazards are profiled in this plan. The Pottawatomie County Hazard Mitigation Planning Team and disaster professionals reviewed the hazards possible in Pottawatomie County through 2012. The review was based on historical data, public input and experience of the PCHMPT members to identify the natural hazards most likely to impact Pottawatomie County. Since not all jurisdictions are necessarily vulnerable to all of the identified hazards some hazards are identified only as they affect a particular jurisdiction.

REVIEW OF NATURAL HAZARDS

Possible hazards were reviewed by the Pottawatomie County Hazard Mitigation Planning Team through public input, local history and team member knowledge during the meetings held in 2011, 2012 and 2013. The following hazards were identified as either having occurred in Pottawatomie County or had the potential to occur in Pottawatomie County. The planning team initially went through the possible hazards in Oklahoma during a roundtable discussion and based on their personal knowledge and experience in Pottawatomie County.

Of fourteen natural hazards that have occurred in Oklahoma, the PCHMPT has determined only eleven hazards are a threat to the county and are profiled in this plan. The team discussed Landslides, Expansive Soils and Sink Holes and although these hazards do occur in Oklahoma, the PCHMPT determined these were not a problem in Pottawatomie County at this time. They are not profiled in this plan. **Expansive Soils** were indicated as a problem by some individuals in the survey that was sent out to random citizens, however, the consensus of the PCHMPT and Emergency Management was that these were isolated and more likely due to recent earthquake activity than to expansive soils. It was also noted that Oklahoma experiences some instability of soils especially during early years following construction that sometimes cause minor cracking in walls or foundations. There was no indication of severe damage to any structure in Pottawatomie County. There is no mining activity in Pottawatomie County which is the usual source of sink holes. **Sink Holes** have not occurred in Pottawatomie County and, since there is no mining activity in the county, sink holes are not

anticipated. **Landslides** occasionally occur in an area along the South Canadian River in Pottawatomie County due to erosion by the river but do not threaten any residential properties. Although other natural hazards certainly exist, their occurrence is rare in Oklahoma and they have caused no known damage in Pottawatomie County. Future editions of this plan will contain information on those only if an occurrence has a significant impact to the risk of human life or property in Pottawatomie County.

Table 3-1 NATURAL HAZARDS AFFECTING POTTAWATOMIE COUNTY		
Hazard	How Reviewed	Why Identified
Dam Failure	<ul style="list-style-type: none"> Oklahoma Water Resources Board PCHMPT input Public Input/ Survey 	Four dams in Pottawatomie County are rated high hazard. Three of the four are over 50 years old
Drought	<ul style="list-style-type: none"> Oklahoma Climatological Survey National Climatic Data Center Public Input /Survey 	Temperatures in Oklahoma can easily reach over 100 degrees & persist for many days and weeks
Earthquake	<ul style="list-style-type: none"> United States Geological Survey Oklahoma Geological Survey Past Historical Records Public Input/Survey 	Past history, existing fault lines around and near Pottawatomie County
Extreme Heat	<ul style="list-style-type: none"> National Weather Service Oklahoma Climatological Survey Public Input /Survey 	Pottawatomie County has prolonged periods of high temperatures and is prone to wide swings of temperature
Flood	<ul style="list-style-type: none"> Local Emergency Management records. Public Input/Survey National Climatic Data Center National Flood Insurance Program 	There is often flooding in Pottawatomie County due to heavy rains
Hailstorm	<ul style="list-style-type: none"> National Weather Service National Climate Data Center Oklahoma Climatological Survey Public Input/Survey 	Pottawatomie County experiences hailstorms during severe thunderstorms sometimes causes severe damage

Table 3-1 NATURAL HAZARDS AFFECTING POTTAWATOMIE COUNTY		
Hazard	How Reviewed	Why Identified
High Winds	<ul style="list-style-type: none"> • National Climatic Data Center • Public Input/Survey • Oklahoma Climatological Survey • National Weather Service-Norman 	Pottawatomie County experiences high winds usually during severe thunderstorms although sometimes occurring without thunderstorm activity
Lightning	<ul style="list-style-type: none"> • National Climatic Data Center • Public Input/Survey • Oklahoma Climatological Survey • National Weather Service-Norman • National Lightning Safety Institute 	Pottawatomie County is susceptible to lightning every year associated with thunderstorms
Tornado	<ul style="list-style-type: none"> • Local Emergency Management Records • Public Input/Survey • FEMA Declarations • National Weather Service 	Oklahoma has a distinction as the epicenter of Tornado Alley. Pottawatomie County experienced 6 tornadoes since 2007.
Wildfire	<ul style="list-style-type: none"> • Local Emergency Management Records • State Fire Marshal Records • Public Input/Survey • FEMA Declarations 	Fire department records reflect a particularly heavy wildfire season in 2011-2012.
Winter Storm	<ul style="list-style-type: none"> • National Weather Service • National Climate Data Center • FEMA Declarations • Sperry-Piltz Utility Ice Damage Index • Public Input/Survey 	Severe winter storms occur regularly in Pottawatomie County.

The probability of occurrence shown is the determination, based on past history and consideration of the elements necessary for a specific disaster event to occur. Combined with how many of those factors are present, estimates of how likely a hazard is to occur in Pottawatomie County can better be estimated.

TABLE 3-2 PROBABILITY OF OCCURRENCE - DEFINITION	
4- HIGHLY LIKELY	Event is probable within the calendar year. Event has a 1 in 1 year chance of occurring
3- LIKELY	Event is probable within the next three years. Event has up to 1 in 3 year's chance of occurring
2- POSSIBLE	Event is probable within the next 5 years. Event has up to 1 in 5 year's chance of occurring
1- UNLIKELY	Event is possible within the next 10 years. Event has up to 1 to 10 years chance of occurring
0- NONE	The jurisdiction is located outside of the area at risk for the profiled hazard / There is no possibility of occurrence in the profiled jurisdictions

Throughout this plan we discuss the potential of future hazards being profiled using a basic percentage model to determine the risk probability.

RECENT DISASTER HISTORY

Pottawatomie County has had thirteen natural disasters since 2001 for which the county has been declared a disaster area by the President. The table below has a summary of the federally declared disaster history of Pottawatomie County.

RECENT DECLARED DISASTER HISTORY

Pottawatomie County has experienced 13 natural disasters for which the county has been declared a disaster area by the President since 2000. The table below has a detailed summary of the state's declared emergencies and federally declared disasters for Pottawatomie County during that time.

Table 3-3 POTTAWATOMIE COUNTY DECLARED EMERGENCY (EM) / DISASTER (DR) HISTORY 2000-2013

Incident Date	Nature of Disaster	FEMA # Declared Date	Area Affected
May 18, 2013 to June 2, 2013	Oklahoma Severe Storms and Tornadoes	FEMA –DR 4117 Declared: 5-20-13	Bethel Acres Shawnee
Jan 31, 2011 to Feb 5, 2011	Severe Winter Storm	FEMA –DR 1985 Declared: 5-13-11	County wide
Jan 31, 2011 to Feb 5, 2011	Severe Winter Storm	EM-3316 (Emergency Declaration) Declared: 2-2- 11	County wide
May 10, 2010 to May13, 2010	Severe Storms, Tornadoes, and Straight-Line Winds	FEMA –DR 1917 Declared: 5-24-10	County wide
Jan 28, 2010 to Jan 30, 2010	Severe Winter Storm	FEMA –DR 1883 Declared: 3-5-10	County wide
Dec 24, 2009 to Dec 25, 2009	Severe Winter Storm	FEMA –DR 1876 Declared: 2-25-10	County wide
Jan 28, 2010 to Jan 30, 2010	Severe Winter Storm	EM-3308 (Emergency Declaration) Declared: 1-30-10	County wide
Dec 8, 2007 to Jan 3, 2008	Severe Winter Storm	FEMA –DR 1735 Declared:12-18-07	County wide
Dec 8, 2007 to Jan 2, 2008	Severe Winter Storm	EM-3280 (Emergency Declaration) Declared: 12-10-07	County wide

Table 3-3 POTTAWATOMIE COUNTY DECLARED EMERGENCY (EM) / DISASTER (DR) HISTORY 2000-2013

Incident Date	Nature of Disaster	FEMA # Declared Date	Area Affected
Aug 18, 2007 to Sep 12, 2007	Severe Storms, Tornados, and Flooding	FEMA –DR 1718 Declared 8-24-07	County wide
June 10, 2007 to July 25, 2007	Severe Storms, Flooding, and Tornados	FEMA –DR 1712 Declared: 7-7-07	County wide
May 4, 2007 to May 11, 2007	Severe Storms, Tornados, and Flooding	FEMA –DR 1707 Declared: 6- 7-07	County wide
Jan 12, 2007 to Jan 26, 2007	Severe Winter Storms	FEMA –DR 1678 Declared: 2 1-07	County wide
Jan 12, 2007 to Jan 26, 2007	Severe Winter Storm And Flooding	EM-3272 Declared: 1-15-07 (Emergency Declaration)	County wide
Nov 27, 2005 to Mar 31, 2006	Severe Wildfire Threat	FEMA –DR 1623 Declared: 1-10-06	County wide
May 8, 2003 to May 30, 2003	Severe Ice Storm	FEMA-DR 1465 Declared: 5-10-03	County wide
Jan 30, 2002 to Feb 11, 2002	Ice Storm	FEMA –DR 1401 Declared: 2-1-02	County wide

THE INFORMATION PROVIDED THROUGHOUT THIS CHAPTER INCLUDES:

HAZARD PROFILE – A description of each hazard, its effects, frequency of occurrence, and how the hazard is measured;

LOCATION – Provides information on the location(s) within Pottawatomie County boundaries that are primary areas of concern for the profiled hazard;

EXTENT – The size or intensity of a hazard event;

PREVIOUS OCCURRENCES – The known historical occurrences of the hazard in the Pottawatomie County area;

PROBABILITY OF FUTURE OCCURRENCES – Defines the calculated potential of future events occurring in Pottawatomie County limits based on past history, geological or climatological potential;

VULNERABILITY AND IMPACT – Describes how vulnerable or susceptible to damage the citizens, infrastructure, economy, and structures in the jurisdiction are to the profiled hazard and resulting consequences;

CONCLUSION – Summarizes the profiled hazard outcomes;

SOURCES – Presents reference sources used.

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