

# Neosho County Multi-Hazard Mitigation Plan



January 2009

Developed by Neosho County with professional planning assistance from  
AMEC Earth and Environmental  
Hazard Mitigation and Emergency Management Program  
Topeka, Kansas and Denver, Colorado





# SPECIAL THANKS AND ACKNOWLEDGEMENTS

---

## Neosho County Hazard Mitigation Planning Committee

Name		Representing
Charles	Baker	Kansas Department of Transportation
Mike	Carson	USD 101
Cindy	Cornet	Neosho County Appraiser
Donna	Culver	American Red Cross
Ryan	Follmer	City of Chanute
Jeri	Giefer	City of St. Paul
Jason	Hartman	Kansas Forest Service
Ron	Holsteen	Twin Valley Electric Cooperative
Kim	Juenemann	USD 505
James	Keath	County-Sherriff/EM
Cindy	Lero	City of Erie
Lori	Nally	Neosho County Sheriff-911
Paul	Norris	Heartland Rural Electric Cooperative
Ginny	Oliver	USD 101
Steve	Parsons	USD 413
Holly	Powers	City of Thayer
Steve	Samuelson	Kansas Dept. of Agriculture, Division of Water Resources
Byron	Schultz	Neosho County Emergency Manager
Melissa	Smith	Chanute Tribune
Ben	Smith	Neosho County Community College
Randy	Wagoner	USD 447
Larry	Whalen	City of Stark
Laura	Whittley	City of Thayer

Laurie Bestgen, AMEC Earth and Environmental



# TABLE OF CONTENTS

---

<b>Executive Summary</b> .....	<b>viii</b>
<b>Prerequisites</b> .....	<b>xvi</b>
<b>Chapters</b>	
<hr/>	
<b>1 Introduction and Planning Process</b> .....	<b>1.1</b>
<b>1.1 Purpose</b> .....	<b>1.1</b>
<b>1.2 Background and Scope</b> .....	<b>1.2</b>
<b>1.3 Plan Organization</b> .....	<b>1.3</b>
<b>1.4 Planning Process</b> .....	<b>1.4</b>
1.4.1 Multi-Jurisdictional Participation.....	1.4
1.4.2 The 12-Step Planning Process.....	1.4.2
<b>2 Planning Area Profile and Capabilities</b> .....	<b>2.1</b>
<b>2.1 Neosho County Planning Area Profile</b> .....	<b>2.1</b>
2.1.1 Geography and Topography.....	2.1
2.1.2 Climate.....	2.4
2.1.3 Population/Demographics .....	2.5
2.1.4 History.....	2.6
2.1.5 Economy/Industry.....	2.6
2.1.6 Agriculture.....	2.8
<b>2.2 Jurisdictional Descriptions and Capabilities</b> .....	<b>2.9</b>
2.2.1 Unincorporated Neosho County .....	2.10
2.2.2 Cities.....	2.11
2.2.3 School Districts.....	2.20
2.2.5 Community College .....	2.23
<b>3 Risk Assessment</b> .....	<b>3.1</b>
<b>3.1 Hazard Identification</b> .....	<b>3.2</b>
3.1.1 Methodology .....	3.2
3.1.2 Disaster Declaration History.....	3.5
<b>3.2 Hazard Profiles</b> .....	<b>3.7</b>
3.2.1 Methodology .....	3.7
3.2.2 Agricultural Infestation.....	3.11
3.2.3 Dam and Levee Failure .....	3.14
3.2.4 Drought.....	3.21
3.2.5 Earthquake .....	3.27
3.2.6 Expansive Soils .....	3.32
3.2.7 Extreme Heat.....	3.34
3.2.8 Flood.....	3.39

3.2.9 Hailstorm.....	3.54
3.2.10 Lightning .....	3.59
3.2.11 Soil Erosion and Dust .....	3.61
3.2.12 Tornado .....	3.65
3.2.13 Utility/Infrastructure Failure.....	3.71
3.2.14 Wildfire.....	3.73
3.2.15 Windstorm.....	3.76
3.2.16 Winter Storm.....	3.83
3.2.17 Hazard Profiles Summary.....	3.91
<b>3.3 Vulnerability Assessment .....</b>	<b>3.92</b>
3.3.1 Methodology .....	3.92
3.3.2 Community Assets.....	3.93
3.3.3 Vulnerability by Hazard.....	3.101
3.3.4 Future Land Use and Development .....	3.131
3.3.5 Summary of Key Issues.....	3.133
<b>4 Mitigation Strategy.....</b>	<b>4.1</b>
<b>4.1 Goals .....</b>	<b>4.1</b>
<b>4.2 Identification and Analysis of Mitigation Actions.....</b>	<b>4.2</b>
<b>4.3 Implementation of Mitigation Actions.....</b>	<b>4.3</b>
4.3.1. Actions Developed for the Unincorporated County.....	4.7
4.3.2. Actions Developed for the City of Chanute .....	4.14
4.3.3. Actions Developed for the City of Erie .....	4.16
4.3.4. Actions Developed for the City of St. Paul .....	4.19
4.3.5. Actions Developed for the City of Thayer .....	4.21
4.3.10. Actions Developed for the Unified School Districts.....	4.27
4.3.13. Actions Developed for Private Non-Profit Entities .....	4.33
4.3.14. Mitigation Actions in Support of the National Flood Insurance Program .....	4.40
<b>5 Plan Implementation and Maintenance .....</b>	<b>5.1</b>
<b>5.1 Monitoring, Evaluating, and Updating the Plan .....</b>	<b>5.1</b>
5.1.1 Hazard Mitigation Planning Committee .....	5.1
5.1.2 Plan Maintenance Schedule.....	5.2
5.1.3 Plan Maintenance Process.....	5.2
<b>5.2 Incorporation into Existing Planning Mechanisms .....</b>	<b>5.3</b>
<b>5.3 Continued Public Involvement .....</b>	<b>5.4</b>

## Appendices

---

**Appendix A: References**

**Appendix B: Planning Process Documentation**

**Appendix C: Mitigation Action Alternatives and Prioritization**

**Appendix D: Community Wildfire Assessment Report**

**Appendix E: Adoption Resolutions**



# EXECUTIVE SUMMARY

---

The purpose of natural hazards mitigation is to reduce or eliminate long-term risk to people and property from natural hazards. Neosho County and participating jurisdictions developed this multi-hazard mitigation plan to reduce future losses to the County and its communities resulting from natural hazards. The plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 and to achieve eligibility for the Federal Emergency Management Agency (FEMA) Flood Mitigation Assistance, Pre-Disaster Mitigation, and Hazard Mitigation Grant Programs.

The Neosho County Multi-Hazard Mitigation Plan is a multi-jurisdictional plan that covers the following local governments that participated in the planning process:

- Neosho County
- City of Chanute
- City of Erie
- City of St. Paul
- City of Thayer
- Unified School District 101
- Unified School District 413
- Unified School District 447
- Unified School District 505
- Neosho County Community College

In addition to the local governments, several private non-profit entities participated in this effort providing support and contributing to the mitigation strategy:

- American Red Cross
- Heartland Electric Cooperative
- Radiant Electric Cooperative
- Twin Valley Electric Cooperative

The City of Stark supports this planning effort and attended the final planning meeting. However, at this time, this jurisdiction has elected not to officially participate and adopt this mitigation plan. In addition, the Cities of Earlton and Galesburg did not respond to the invitations to participate in the meetings and planning process. During the plan maintenance and revision process, outlined in detail in Chapter 5, all jurisdictions will again be invited to officially participate in the planning process for future plan updates.

---

The County's planning process followed a methodology prescribed by FEMA, which began with the formation of a Hazard Mitigation Planning Committee (HMPC) comprised of key stakeholders from Neosho County, participating jurisdictions, and state and federal agencies. The HMPC conducted a risk assessment that identified and profiled hazards that pose a risk to Neosho County, assessed the County's vulnerability to these hazards, and examined the capabilities in place to mitigate them. The County is vulnerable to several hazards that are identified, profiled, and analyzed in this plan. Tornadoes, floods, winter storm, and windstorm are among the hazards that can have a significant impact on the County.

Based upon the risk assessment, the HMPC identified goals for reducing risk from hazards. The goals of this multi-hazard mitigation plan are to:

**Goal 1:** Minimize vulnerability of the people and property of Neosho County to the impacts of natural hazards

**Goal 2:** Protect critical facilities, infrastructure and other community assets from the impacts of hazards

**Goal 3:** Improve education and awareness regarding hazards and risk in Neosho County

**Goal 4:** Strengthen communication among agencies and between agencies and the public

To meet the identified goals, the plan recommends the mitigation actions summarized in the table on the following page. The HMPC also developed an implementation plan for each action, which identifies priority level, background information, ideas for implementation, responsible agency, timeline, cost estimate, potential funding sources, and more. These additional details are provided in Chapter 4.

The multi-hazard mitigation plan has been formally adopted by the Neosho County Commissioners and the governing bodies of each participating jurisdiction and will be updated within a five-year timeframe.

## Mitigation Action Matrix

Action ID	Action	Action Category	Priority	STAPLEE Score	Goals	Hazards Addressed
County-1	Continue NFIP Participation	NFIP Participation	L	25	1,2	Flood
County-2	Install Additional Severe Weather Warning Sirens	Indoor/Outdoor Warning	M	20	1	Windstorm, Tornado
County-3	Promote Neosho County Hazard Mitigation Plan to the Public	Public Education	H	12	3	All Hazards
County-4	Ensure the Neosho County Hazard Mitigation Plan is reviewed and kept current	Planning	L	22	4	All Hazards
County-5	Obtain Dam Inundation Maps and Emergency Action Plans for the high and significant hazard dams in the County	Planning	L	14	3	Dam/Levee Failure
County-6	Promote Crop Insurance and Private Hazard Insurance	Public Education	H	17	1,3	Agricultural Infestation, Dam and Levee Failure, Drought, Earthquake, Expansive Soils, Extreme Heat, Flood, Hailstorm, Lightning, Soil Erosion and Dust, Utility/Infrastructure Failure, Tornado, Wildfire, Windstorm, Winter Storm
Multi-1	Wildfire public education	Wildfire Mitigation	L	22	3,4	Wildfire
Multi-2	Increase public and fire department training on wildland urban interface fires	Wildfire Mitigation	L	23	3,4	Wildfire
Multi-3	Reduce hazardous fuels in prioritized wildfire risk areas	Wildfire Mitigation	L	23	1	Wildfire
Chanute-1	Install additional severe weather warning sirens	Indoor/Outdoor Warning	M	27	1	Tornado, Windstorm
Chanute-2	Continue NFIP Participation	NFIP Participation	L	27	1,2	Flood
Chanute-3	Buyout of Floodprone Properties	Floodprone Property Buyout	L	22	1	Flood
Erie-1	Buyout of Floodprone properties	Floodprone Property Buyout	L	19	1	Flood

<b>Action ID</b>	<b>Action</b>	<b>Action Category</b>	<b>Priority</b>	<b>STAPLEE Score</b>	<b>Goals</b>	<b>Hazards Addressed</b>
Erie-2	Public Information on location of tornado shelters and cooling centers	Public Education	H	23	1,4	Tornado, Extreme Heat
Erie-3	Install Additional Severe Weather Warning Sirens	Indoor/Outdoor Warning	M	23	1	Tornado, Windstorm
Erie-4	Bury secondary power lines in new development	Power Line Maintenance/Upgrades	M	17	1	Tornado, Windstorm, Utility/Infrastructure Failure, Winter Storm, Lightning
Erie-5	Continue NFIP Participation	NFIP Participation	L	23	1,2	Flood
St. Paul-1	Cable TV severe weather warning	Indoor/Outdoor Warning	M	19	1	All Hazards
St. Paul-2	Continue NFIP participation	NFIP Participation	L	20	1,2	Flood
St. Paul-3	Notify residents of locations of city tornado shelters and cooling centers	Public Education	H	24	3,4	Tornado, Extreme Heat
Thayer-1	Public Information on location of tornado shelters and cooling center	Public Information	H	17	1,3	Tornado, Windstorm
Thayer-2	Construction of a community saferoom	Saferooms	H	17	1	Tornado
Thayer-3	Promote NOAA Weather Radios	Indoor/Outdoor Warning	M	13	1,3,4	All Hazards
Thayer-4	Install additional severe weather warning sirens	Indoor/Outdoor Warning	M	18	1	Tornado, Windstorm
Thayer-5	Utility line clearance program	Power Line Maintenance/Upgrades	M	14	1,2	Tornado, Windstorm, Winter Storm, Utility/Infrastructure Failure
Thayer-6	Install generator at the Thayer Community Building	Install Generators	M	14	1,2	Tornado, Windstorm, Winter Storm, Utility/Infrastructure Failure, Lightning
Thayer-7	Install Generators at Thayer lift station and water treatment plant	Install Generators	M	16	1,2	Tornado, Windstorm, Winter Storm, Utility/Infrastructure Failure, Lightning
Thayer-8	Wildfire fuel reduction around the Rail Road right of way leading into and through Thayer, KS	Wildfire Mitigation	L	20	1,2	Wildfire

Action ID	Action	Action Category	Priority	STAPLEE Score	Goals	Hazards Addressed
Thayer-9	Local road flood prevention	Flood Mitigation	**	20	1,2	Flood
Thayer-10	Continue process to Join NFIP	NFIP Participation	L		1,2	Flood
USD 101-1 USD 447-1 USD 505-1	Evaluate existing school tornado shelter locations	Saferooms	H	19*	1,2	Tornado
USD 101-2 USD-413-2 USD 447-2 USD 505-2	Construct saferooms in schools	Saferooms	H	23*	1,2	Tornado
USD 505-3	Install Generators at USD 505 facilities	Install Generators	M	24	1,2	Lightning, Tornado, Utility/Infrastructure Failure, Windstorm, Winter Storm
NCCC-1	Install generators at Neosho County Community College	Install Generators	M	21	1,4	Lightning, Tornado, Utility/Infrastructure Failure, Windstorm, Winter Storm
Radiant Electric Cooperative-1	Installation of lightning arrestors on distribution power line structures	Power line maintenance/upgrades	M	19	1,2	Lightning, Utility/Infrastructure Failure
Radiant Electric Cooperative-2	Replace copper weld wire and pole line spans to current codes and standards	Power line maintenance/upgrades	M	20	1,2	Tornado, Utility/Infrastructure Failure, Wind Storm, Winter Storm
Heartland Rural Electric Cooperative-1	Upgrade power lines utilizing twisted pair conductors	Power line Maintenance/upgrades	M	21	1,2	Tornado, Utility/Infrastructure Failure, Wind Storm, Winter Storm
Twin Valley Electric Cooperative-1	Installation of Lightning Arrestors on distribution power line structures	Power line maintenance/upgrades	M	23	1,2	Lightning, Utility/Infrastructure Failure

<b>Action ID</b>	<b>Action</b>	<b>Action Category</b>	<b>Priority</b>	<b>STAPLEE Score</b>	<b>Goals</b>	<b>Hazards Addressed</b>
Twin Valley Electric Cooperative-2	Replace copper weld wire and pole line spans to current codes and standards	Power line maintenance/upgrades	M	23	1,2	Tornado, Utility/Infrastructure Failure, Wind Storm, Winter Storm
Twin Valley Electric Cooperative-3	Installation of a Tie-Line to connect two meeting points together for backfeeding to correct major outages	Power line maintenance/upgrades	M	23	1,2	Tornado, Utility/Infrastructure Failure, Wind Storm, Winter Storm

\*STAPLEE scores are averaged

\*\*added after prioritization exercise



# PREREQUISITES

---

**44 CFR requirement 201.6(c)(5): The local hazard mitigation plan shall include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan. For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.**

*Note to Reviewers: When this plan has been reviewed and approved pending adoption by FEMA Region VII the adoption resolutions will be signed by the participating jurisdictions and added to Appendix E. A model resolution is provided.*

The following jurisdictions participated in the development of this plan and have adopted the multi-jurisdictional plan. Resolutions of Adoptions are included in Appendix E.

- Neosho County
- City of Chanute
- City of Erie
- City of St. Paul
- City of Thayer
- Unified School District 101
- Unified School District 413
- Unified School District 447
- Unified School District 505
- Neosho County Community College

# Model Resolution

---

Resolution # \_\_\_\_\_ **Adopting the Neosho County Multi-Hazard Mitigation Plan**

**Whereas**, the (Name of Government/District/Organization seeking FEMA approval of hazard mitigation plan) recognizes the threat that natural hazards pose to people and property within our community; and

**Whereas**, undertaking hazard mitigation actions will reduce the potential for harm to people and property from future hazard occurrences; and

**Whereas**, the U.S. Congress passed the Disaster Mitigation Act of 2000 (“Disaster Mitigation Act”) emphasizing the need for pre-disaster mitigation of potential hazards;

**Whereas**, the Disaster Mitigation Act made available hazard mitigation grants to state and local governments; and

**Whereas**, an adopted Multi-Hazard Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

**Whereas**, the (Name of Government/District/Organization) fully participated in the FEMA-prescribed mitigation planning process to prepare this Multi-Hazard Mitigation Plan; and

**Whereas**, the Kansas Division of Emergency Management and the Federal Emergency Management Agency Region VII officials have reviewed the “Neosho County Multi-Hazard Mitigation Plan,” and approved it contingent upon this official adoption of the participating governing body; and

**Whereas**, the (Name of Government/District/Organization) desires to comply with the requirements of the Disaster Mitigation Act and to augment its emergency planning efforts by formally adopting the Neosho County Multi-Hazard Mitigation Plan; and

**Whereas**, adoption by the governing body for the (Name of Government/District/Organization) demonstrates the jurisdictions’ commitment to fulfilling the mitigation goals and objectives outlined in this Multi-Hazard Mitigation Plan.

**Whereas**, adoption of this legitimizes the plan and authorizes responsible agencies to carry out their responsibilities under the plan;

**Now, therefore, be it resolved**, that the (Name of Government/District/Organization) adopts the “Neosho County Multi-Hazard Mitigation Plan” as an official plan; and

**Be it further resolved**, the (Name of Government/District/Organization) will submit this Adoption Resolution to the Kansas Division of Emergency Management and Federal Emergency Management Agency Region VII officials to enable the plan’s final approval.

Passed: \_\_\_\_\_

\_\_\_\_\_  
Certifying Official