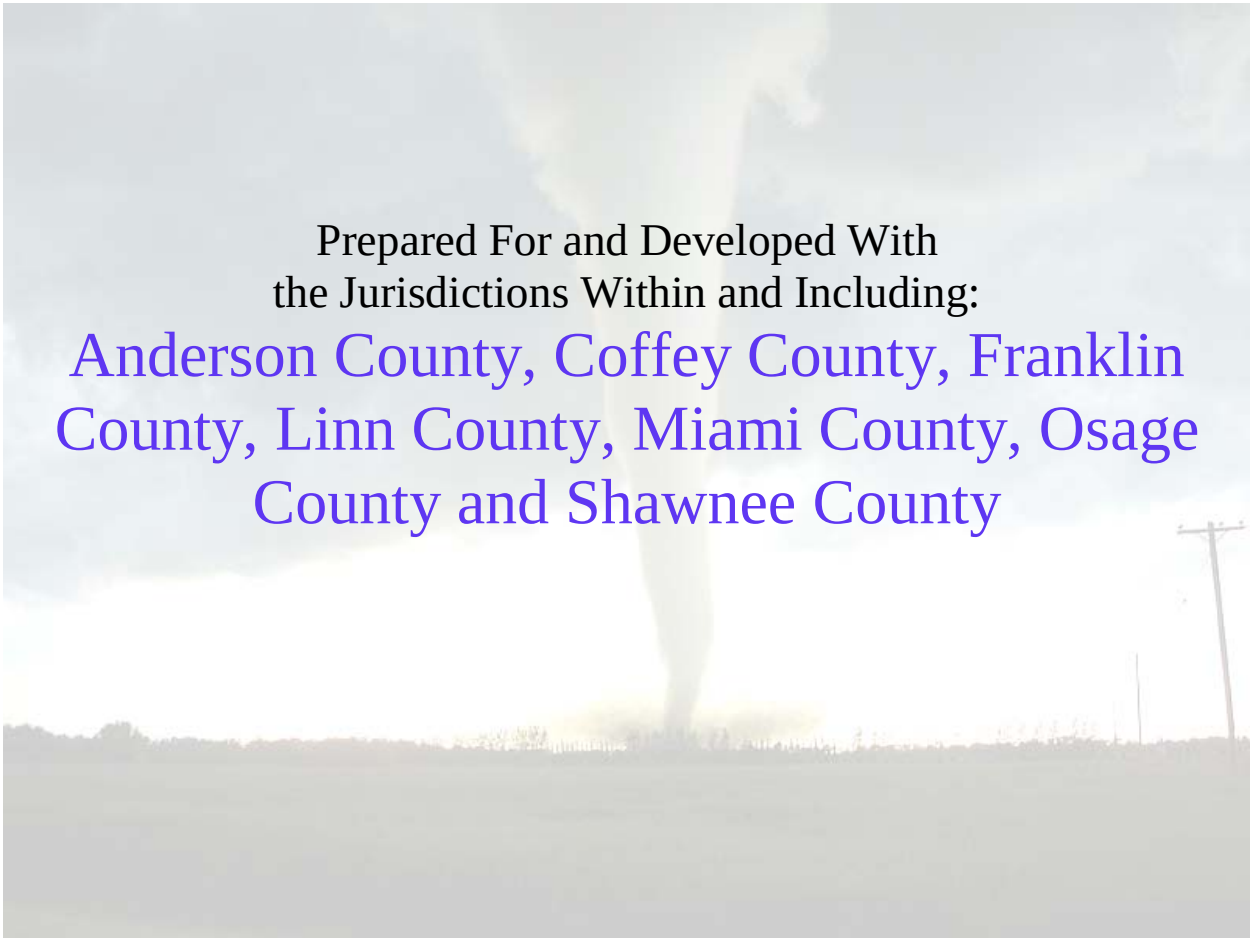
East-Central Kansas
(Homeland Security Region J)
Multi-Hazard, Multi-Jurisdictional
Mitigation Plan



Prepared For and Developed With
the Jurisdictions Within and Including:

Anderson County, Coffey County, Franklin County, Linn County, Miami County, Osage County and Shawnee County

May, 2014

Prepared By:

Blue Umbrella

TABLE OF CONTENTS

SECTION **PAGE**

TABLE OF CONTENTS i

LIST OF ACRONYMS v

EXECUTIVE SUMMARY Executive-1

HAZARD MITIGATION PLANNING COMMITTEE Hazard-1

RESOLUTIONS OF ADOPTION Resolutions-1

1.0 INTRODUCTION TO THE PLANNING PROCESS 1-1
- 1.1 Introduction 1-1
- 1.2 Background 1-1
- 1.3 Disaster Mitigation Act of 2000 1-2
- 1.4 Hazard Mitigation Planning Process 1-2
- 1.5 Planning Process Participation Requirements 1-3
- 1.6 Consultation with FEMA Region VII 1-4
- 1.7 Review of Previous Mitigation Plans and Other Planning Documents 1-4
- 1.8 Organizational and Planning Meetings 1-5
- 1.9 Public Outreach 1-7
- 1.10 Risk Assessment 1-12
- 1.11 Vulnerability Assessment and Loss Estimation 1-13
- 1.12 Capability Assessment 1-13
- 1.13 Development of Mitigation Goals 1-14
- 1.14 Development of Mitigation Actions 1-14
- 1.15 Development of the East-Central Kansas Multi-Hazard Mitigation Plan 1-15
- 1.16 Plan Adoption, Review and Maintenance 1-16
- 1.17 Planning Process Participation 1-16
  - 1.17.1 Anderson County 1-16
  - 1.17.2 Coffey County 1-17
  - 1.17.3 Franklin County 1-17
  - 1.17.4 Linn County 1-18
  - 1.17.5 Miami County 1-18
  - 1.17.6 Osage County 1-19
  - 1.17.7 Shawnee County 1-19
  - 1.17.8 Stakeholders 1-19
- 1.18 Non-Participating Jurisdictions 1-20

SECTION **PAGE**

2.0 REGIONAL PROFILE 2-1
2.1 Planning Region 2-1
2.2 County Profiles 2-1
2.3 City Profiles 2-7
2.4 Regional Geology and Hydrology 2-12
2.5 Regional Climate 2-17
2.6 Regional Population and Demographics 2-20
2.7 Regional Economy 2-22
2.8 Regional Agriculture and Livestock 2-22
2.9 Regional Land Use and Development Trends 2-28
2.10 Structures Exposed to Potential Hazards 2-31
2.11 Regional Critical Facilities 2-32
2.12 Historically Significant Structures and Locations 2-33
2.12.1 Anderson County 2-34
2.12.2 Coffey County 2-34
2.12.3 Franklin County 2-34
2.12.4 Linn County 2-35
2.12.5 Miami County 2-35
2.12.6 Osage County 2-35
2.12.7 Shawnee County 2-36
2.13 Regional At Risk Populations 2-38
2.14 School District Information and Boundaries 2-40
2.15 Fire District Boundaries 2-49
2.16 Water District Boundaries 2-54
2.17 Regional Threatened and Endangered Species 2-62

3.0 RISK ASSESSMENT 3-1
3.1 Introduction 3-1
3.2 Methodology 3-1
3.3 Identify Potential Hazards 3-2
3.4 Profile Hazard Events 3-3
3.5 Regional Vulnerability Assessment 3-8
3.6 Historical Disaster Declarations 3-9
3.7 Hazard Profiles 3-11
3.7.1 Agricultural Infestation 3-13
3.7.2 Civil Disorder 3-20
3.7.3 Dam and Levee Failure 3-25
3.7.4 Drought 3-83
3.7.5 Earthquake 3-100
3.7.6 Expansive Soils 3-107
3.7.7 Extreme Temperatures 3-111
3.7.8 Flood 3-119

SECTION **PAGE**

3.7.9 Hailstorm 3-207
3.7.10 Hazardous Materials 3-215
3.7.11 Land Subsidence 3-225
3.7.12 Landslide 3-231
3.7.13 Lightning 3-234
3.7.14 Major Disease Outbreak 3-242
3.7.15 Radiological Event 3-249
3.7.16 Soil Erosion and Dust 3-253
3.7.17 Terrorism and Agri-Terrorism 3-260
3.7.18 Tornado 3-266
3.7.19 Utility/Infrastructure Failure 3-281
3.7.20 Wildfire 3-291
3.7.21 Windstorm 3-300
3.7.22 Winter Storm 3-307
3.8 Data Sources 3-318

4.0 CAPABILITY ASSESSMENT 4-1
4.1 Introduction 4-1
4.2 Methodology 4-1
4.3 Regional Schools, Colleges and Universities 4-4
4.4 Governance 4-4
4.5 Jurisdictional Capabilities 4-5
4.5.1 Planning Capabilities 4-7
4.5.2 Policies and Ordinances 4-12
4.5.3 Programs 4-18
4.5.4 Available Studies, Reports and Maps 4-23
4.5.5 Staffing and Departmental Capabilities 4-26
4.5.6 Non-Governmental Organizations 4-32
4.5.7 Fiscal Capabilities 4-36
4.5.8 School, College or University Capability Assessment 4-40

5.0 MITIGATION ACTIONS 5-1
5.1 Introduction 5-1
5.2 Identification of Goals 5-2
5.3 Identification and Analysis of Mitigation Actions 5-2
5.4 Prioritizing Mitigation Actions 5-5
5.5 Funding Sources 5-6
5.6 Jurisdictional Mitigation Actions 5-8
5.6.1 Anderson County 5-9
5.6.2 Coffey County 5-41
5.6.3 Franklin County 5-69
5.6.4 Linn County 5-129

SECTION **PAGE**

5.6.5 Miami County 5-184
5.6.6 Osage County 5-238
5.6.7 Shawnee County 5-276
5.7 Mitigation Actions in Support of National Flood Insurance Program 5-319
5.8 Action Implementation 5-351

6.0 PLAN MAINTENANCE 6-1
6.1 Introduction 6-1
6.2 Local Emergency Planning Committee Requirements 6-1
6.3 Plan Maintenance 6-1
6.4 Post-Disaster Declaration Procedures 6-3
6.5 Incorporation of Mitigation Plan Into Other Planning Mechanisms 6-3
6.6 Continued Public Involvement 6-3

LIST OF APPENDICES

APPENDIX

A Adoption Resolutions
B Meeting Information
C Public Survey
D RESTRICTED Critical Facilities
E FEMA Approval Documentation

List of Acronyms

Acronym	Meaning
ANFO	Ammonium Nitrate/Fuel Oil
BATF	Bureau of Alcohol, Tobacco and Firearms
BSE	Bovine Spongiform Encephalopathy
CAFO	Concentrated Animal Feeding Operation
CDBG	Community Development Block Grant
CDC	Centers for Disease Control and Prevention
CFR	Code of Federal Regulations
CPRI	Calculated Priority Risk Index
CRS	Community Rating System
CWPP	Community Wildfire Protection Plans
DASC	Data Access and Support Center
DFIRM	Digital Flood Insurance Rate Map
DWR	Division of Water Resources
EAP	Emergency Action Plan
EF	Enhanced Fujita
EMAP	Emergency Management Accreditation Program
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ºF	Fahrenheit
FIA	Flood Insurance Administration
FIRM	Flood Insurance Rate Map
FMA	Flood Mitigation Assistance
GIS	Geographic Information System
HFRA	Healthy Forests Restoration Act
HMA	Hazard Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
HMPC	Hazard Mitigation Planning Committee
IPSR	Institute for Policy and Social Research
K.S.A	Kansas Statutes Annotated
KCC	Kansas Corporation Commission
KCP&L	Kansas City Power and Light
KDA	Kansas Department of Agriculture
KDEM	Kansas Division of Emergency Management
KDHE	Kansas Department of Health and Environment
KDOT	Kansas Department of Transportation
km	Kilometer

Acronym	Meaning
KWO	Kansas Water Office
LAMP	Levee Analysis Mapping Procedures
LEPC	Local Emergency Planning Committee
LSP	Levee Safety Program
MH 2.1	Multi Hazard version 2.1
MLI	Mid-Term Levee Inventory
MPH	Miles per Hour
NCDC	National Climatic Data Center
NFIP	National Flood Insurance Program
NFIRS	National Fire Incident Reporting System
NGO	Non-Governmental Organization
NLD	National Levee Database
NOAA	National Oceanic and Atmospheric Administration
NSFHA	No Special Flood Hazard Area
NWS	National Weather Service
ONA	Other Needs Assistance
PA	Public Assistance
PAL	Provisionally Accredited Levee
PDM	Pre-Disaster Mitigation
PDSI	Palmer Drought Severity Index
PIO	Public Information Officer
REC	Rural Electric Cooperative
RMP	Risk Management Plan
SBA	Small Business Administration
SHMO	State Hazard Mitigation Officer
SoVI	Social Vulnerability Index
SRL	Severe Repetitive Loss
STAPLEE	Social, Technical, Administrative, Political, Legal, Economic and Environmental
USACE	United States Army Corps of Engineers
USD	Unified School District
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WUI	Wildland Urban Interface

EXECUTIVE SUMMARY

Mitigation is commonly defined as sustained action taken to reduce or eliminate long-term risk to people and their property from hazards and their effects. Hazard mitigation planning provides communities with a roadmap to aid in the creation and revision of policies and procedures, and the use of available resources, to provide long-term, tangible benefits to the community. A well designed hazard mitigation plan provides communities with realistic actions that can be taken to reduce potential vulnerability and exposure to identified hazards.

In order to create an effective, realistic and useful plan, a methodical and thoughtful planning process that included regional and local stakeholders and followed Federal Emergency Management Agency (FEMA) Guidelines has been completed.

This is a multi-hazard, multi-jurisdictional mitigation plan combination and update covering Kansas Homeland Security Region J. Region J is comprised of seven participating counties and is located in the center of the eastern region of the State. This plan was prepared to meet the requirements of the Disaster Mitigation Act of 2000 (DMA 2000), as defined in regulations set forth by the Interim Final Rule (44 Code of Federal Regulation (CFR) Part 201.6).

A regional Hazard Mitigation Planning Committee (HMPC), formed by participating County Emergency Managers and State of Kansas Mitigation Planners, conducted a regional risk assessment that identified and characterized potential hazards, suggested incorporation of review elements from previous plans into new regional plan, conducted a regional vulnerability analysis, and proposed and explored potential mitigation actions. The outcome was a mitigation plan that combined each discrete county plan into one regional plan.

It is worth noting that all neighboring Kansas counties are undergoing a similar mitigation planning effort, and as part of this statewide process all county and state planners are working together toward common mitigation goals. During the creation and adoption of this plan communication channels were opened to facilitate the cross pollination of ideas, to incorporate neighboring regions concerns, and to ensure the overall preparedness of the State of Kansas.

The following table presents a list of participating jurisdictions, by county. A special welcome is afforded to Unified School District (USD) #372 - Silver Lake, a new participant to the Plan. Please note that many Unincorporated Townships and special districts are not included in the following list as they are covered under their home counties participation and adoption.

Anderson County Participating Cities and Townships

Anderson County
City of Colony
City of Garnett
City of Greeley
City of Kincaid
City of Westphalia

Coffey County Participating Cities and Townships

Coffey County
City of Burlington
City of Gridley
City of Lebo
City of LeRoy
City of New Strawn
City of Waverly

Franklin County Participating Cities and Townships

Franklin County
City of Lane
City of Ottawa
City of Pomona
City of Princeton
City of Rantoul
City of Richmond
City of Wellsville
City of Williamsburg

Linn County Participating Cities and Townships

Linn County
City of Blue Mound
City of La Cygne
City of Linn Valley
City of Mound City
City of Parker
City of Pleasanton
City of Prescott

Miami County Participating Cities and Townships

Miami County
City of Fontana
City of Louisburg
City of Osawatomie
City of Paola

Osage County Participating Cities and Townships

Osage County
City of Burlingame
City of Carbondale
City of Lyndon
City of Melvern
City of Osage
City of Overbrook
City of Quenemo
City of Scranton

Shawnee County Participating Cities and Townships

Shawnee County
City of Auburn
City of Rossville
City of Silver Lake
City of Topeka

The following table presents a list of participating colleges, universities and USDs. The information also presents the district covered, if applicable, and the county:

Participating Colleges, Universities, and USDs

School, College or University	District
Anderson County	
USD #365	Garnett
USD #479	Crest
Coffey County	
USD #243	Lebo / Waverly
USD #244	Burlington
USD #245	LeRoy / Gridley
Franklin County	
USD #287	West Franklin
USD #288	Central Heights
USD #289	Wellsville
USD #290	Ottawa
Linn County	
USD #344	Pleasanton
USD #346	Mound City
USD #362	Prairie View

Participating Colleges, Universities, and USDs, Continued

Miami County	
USD #367	Osawatomie
USD #368	Paola
USD #416	Louisburg
Osage County	
Three Lakes Educational Cooperative	Multiple Districts
USD #420	Osage City
USD #421	Lyndon
USD #434	Santa Fe Trail
USD #454	Burlingame
USD #456	Marais Des Cygnes Valley
Shawnee County	
USD #321	Kaw Valley
USD #345	Seaman
USD #372	Silver Lake
USD #437	Auburn / Washburn
USD #450	Shawnee Heights
USD #501	Topeka
Washburn University	-

In addition to the above noted jurisdictions, many special districts are covered under the participation and adoption by the overarching county. These entities include:

- Fire Districts
- Sewer Districts
- Water Districts
- Watershed Districts

Some of the above noted special districts went above and beyond and participated independently in the planning process. These entities are noted below.

Participating Special Districts

Franklin County
Rural Water District #6
Linn County
Rural Water District #1
Rural Water District #2
Rural Water District #3
Water Supply District #13
Miami County
Rural Water District #3
Osage County
Fire District #6
Osage Water District #3

It is important to note that while special districts are not required to individually adopt the mitigation plan, in doing so they retain the ability to control and oversee any grant funding received. In not adopting, the special districts may cede control to the overarching county.

Additionally, numerous private, non-profit and charitable organizations participated in this planning effort, including:

Private and Non-Profit Participating Stakeholders

Osage County
Lyon/ Coffey Electric Cooperative
Heartland Rural Electric Cooperative

The following jurisdictions, identified as participating in the last hazard mitigation planning process for their respective counties, elected not to participate in this planning iteration: Franklin County Rural Water District #1 and the City Willard, Shawnee County. Because this is a regional plan data from these non-participating jurisdictions may be included throughout the plan. Each of these jurisdictions will be encouraged to participate in future plan iterations.

GOALS

Based upon the research conducted to complete this document, the HMPC identified goals and objectives to reduce potential risks associated with identified hazards. The goals and objectives of this multi-hazard mitigation plan are to:

- **Goal 1:** Reduce and/or eliminate the risk to the people and property of east-central Kansas from the identified hazards in this plan.
- **Goal 2:** Strive to protect all of the vulnerable populations, structures, and critical facilities in east-central Kansas from the impacts of the identified hazards.
- **Goal 3:** Improve public outreach initiatives to include education, awareness and partnerships with all willing entities in order to enhance understanding of the risks east-central Kansas faces due to the impacts of the identified hazards.
- **Goal 4:** Enhance communication and coordination among all agencies and between agencies and the public.

To accomplish the above identified goals, the HMPC has developed a series of robust and achievable mitigation actions. These actions are discussed in detail in Section 5 of this plan.

HAZARD MITIGATION PLANNING COMMITTEE

The following table presents the members of the east-central HMPC. Each planning committee member served as a point of contact for their county, assisting with the direction and dissemination of information concerning the planning effort. A special thanks is afforded to these people who made the successful completion and adoption of this plan possible.

Hazard Management Planning Committee

Participant	Title	Organization
JD Mersman	Emergency Manager	Anderson County
Russell Stuckey	Emergency Manager	Coffey County
Alan Radcliffe	Emergency Manager	Franklin County
Douglas Barlet	Emergency Manager	Linn County
Frank Kelly	Emergency Manager	Miami County
Bryce Romine	Emergency Manager	Osage County
Dave Sterbenz	Emergency Manager	Shawnee County
Jeanne Bunting	Mitigation Planner	Kansas Division of Emergency Management
Matt Eyer	Plan Author	Blue Umbrella Solutions

In addition to these HMPC members, representatives from each participating jurisdiction deserve a special thanks for assisting in this planning effort. Through their submission of data, participation in discussions and meetings, and feedback on plan revisions they assisted in making a robust plan.

RESOLUTIONS OF ADOPTION

44 CFR Requirement 201.6(c)(5): Documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

Upon review and approved pending adoption status by FEMA Region VII adoption resolutions will be signed by the participating jurisdictions and added to the Appendix documents. Additionally, the following table will be completed noting adoption date for each participating jurisdiction and, if applicable, resolution number.

ANDERSON COUNTY

	Adoption Date	Resolution Number
Anderson County		
City of Colony		
City of Garnett		
City of Greeley		
City of Kincaid		
City of Westphalia		
USD #365 - Garnett		
USD #479 - Crest		

COFFEY COUNTY

	Adoption Date	Resolution Number
Coffey County		
City of Burlington		
City of Gridley		
City of Lebo		
City of LeRoy		
City of New Strawn		
City of Waverly		
USD #243 - Lebo /Waverly		
USD #244 - Burlington		
USD #245 - LeRoy / Gridley		

FRANKLIN COUNTY

	Adoption Date	Resolution Number
Franklin County		
City of Lane		
City of Ottawa		
City of Pomona		
City of Princeton		
City of Rantoul		
City of Richmond		
City of Wellsville		
City of Williamsburg		
USD #287 - West Franklin		
USD #288 - Central Heights		
USD #289 - Wellsville		
USD #290 - Ottawa		

LINN COUNTY

	Adoption Date	Resolution Number
Linn County		
City of Blue Mound		
City of La Cygne		
City of Linn Valley		
City of Mound City		
City of Parker		
City of Pleasanton		
City of Prescott		
USD #344 - Pleasanton		
USD #346 - Mound City		
USD #362 - Prairie View		

MIAMI COUNTY

	Adoption Date	Resolution Number
Miami County		
City of Fontana		
City of Louisburg		
City of Osawatomie		
City of Paola		
USD #367 - Osawatomie		
USD #368 - Paola		
USD #416 - Louisburg		

OSAGE COUNTY

	Adoption Date	Resolution Number
Osage County		
City of Burlingame		
City of Carbondale		
City of Lyndon		
City of Melvern		
City of Osage		
City of Overbrook		
City of Quenemo		
City of Scranton		
Three Lakes Educational Cooperative		
USD #420 - Osage City		
USD #421 - Lyndon		
USD #434 - Santa Fe Trail		
USD #454 - Burlingame		
USD #456 - Marias Des Cygnes Valley		

SHAWNEE COUNTY

	Adoption Date	Resolution Number
Shawnee County		
City of Auburn		
City of Rossville		
City of Silver Lake		
City of Topeka		
USD #321 - Kaw Valley		
USD #345 - Seaman		
USD #372 - Silver Lake		
USD #437 - Auburn / Washburn		
USD #450 - Shawnee Heights		
USD #501 - Topeka		
Washburn University		

INDEPENDENTLY PARTICIPATING SPECIAL DISTRICTS

Unincorporated cities, townships, special districts and agencies that are part of a larger entity, such as a county health department or rural water district, will be considered as adopting when the umbrella county adopts the plan. It is important to note that these entities are not required to individually adopt the mitigation plan, in doing so they retain the ability to control and oversee any grant funding received. In not adopting, these entities may cede control to the overarching county. In addition, there are no adoption requirements for private or non-profit jurisdictions.

	Adoption Date	Resolution Number
Franklin County		
Rural Water District #6		
Linn County		
Rural Water District #1		
Rural Water District #2		
Rural Water District #3		
Water Supply District #13		
Miami County		
Rural Water District #3		
Osage County		
Fire District #6		
Osage Water District #3		

Completed resolutions of adoption may be found in Appendix A.

EXAMPLE RESOLUTION OF ADOPTION

The following presents an example resolution of adoption for participating jurisdictions to use as a template, if necessary.

Model Resolution

Resolution # _____: **Adopting the East-Central Kansas (Region J) Multi-Hazard, Multi-Jurisdictional Hazard Mitigation Plan**

Whereas, the (Name of Government/District/Organization) 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 Federal Emergency Management Agency (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 FEMA Region VII officials have reviewed the East-Central Kansas (Region J) Multi-Hazard, Multi-Jurisdictional Hazard Mitigation Plan, and approved it contingent upon t his official adoption of t he 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 East-Central Kansas (Region J) Multi-Hazard, Multi-Jurisdictional 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 plan, and

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 East-Central Kansas (Region J) Multi-Hazard, Multi-Jurisdictional 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 FEMA Region VII officials to enable the plan's final approval.

_____ _____

Passed Certifying Official

1.0 INTRODUCTION AND PLANNING PROCESS

1.1 INTRODUCTION

Seven participating counties within the east-central Kansas region (Kansas Homeland Security Region J) prepared this Regional Multi-Hazard Mitigation Plan to provide sustained actions to eliminate or reduce risk to people and property from the effects of natural and man-made hazards. This Plan documents east-central Kansas's planning process and identifies applicable hazards, vulnerabilities, and hazard mitigation strategies. This plan will serve to direct available community and regional resources towards creating policies and actions that provide long-term benefits to the community. Local and regional officials can refer to the plan when making decisions regarding regulations and ordinances, granting permits, and in funding capital improvements and other community initiatives.

This plan was also developed to make participating jurisdictions with east-central Kansas eligible for applicable federal disaster assistance, including the FEMA's Hazard Mitigation Grant Program, Pre-Disaster Mitigation program, and Flood Mitigation Assistance program. Additionally, this regional Plan will serve as the basis for the State of Kansas to prioritize available grant funding.

This Plan has been prepared in coordination with the FEMA Region VII and the Kansas Division of Emergency Management (KDEM).

This Plan has been designed to be a living document, a document that will evolve to reflect regional changes, correct any omissions, and constantly strive to ensure the safety of east-central Kansas's citizens. In addition, this document allows each participating jurisdiction to integrate the data, information and hazard mitigation goals and actions from the plan into other planning mechanisms.

1.2 BACKGROUND

East-central Kansas is vulnerable to a wide range of natural hazards, including flooding, tornadoes, drought, and winter storms. These hazards threaten the safety of citizens and have the potential to damage or destroy property and disrupt local and regional economies. Their occurrence is natural and there is little we can do to control their force and intensity. Each year some of these hazards cause disasters that cost hundreds of lives, cause countless injuries, and cost taxpayers billions of dollars to help communities recover. And while the intensity of these natural disasters cannot be controlled, there are many actions that can be taken to minimize their potential impacts to the region. Actions taken to reduce the potential impact of a hazard can greatly diminish the possibility that the hazard will result in a disaster. The practice of minimizing risks to people and property from identified hazards is referred to as hazard mitigation. FEMA describes hazard mitigation as "sustained action taken to reduce or eliminate long-term risk to people and their property from hazards and their effects."

1.3 DISASTER MITIGATION ACT OF 2000

In an effort to reduce natural disaster losses the United States Congress passed the Disaster Mitigation Act of 2000 (DMA 2000) in order to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act). DMA 2000 amended the Stafford Act by repealing the previous Mitigation Planning section (409) and replacing it with a new Mitigation Planning section (322). Section 322 of the DMA makes the development of a hazard mitigation plan a specific eligibility requirement for any local government applying for Federal mitigation grant funds.

This Plan was prepared to meet the requirements of the DMA 2000, as defined in regulations set forth by the Interim Final Rule (44 CFR Part 201.6).

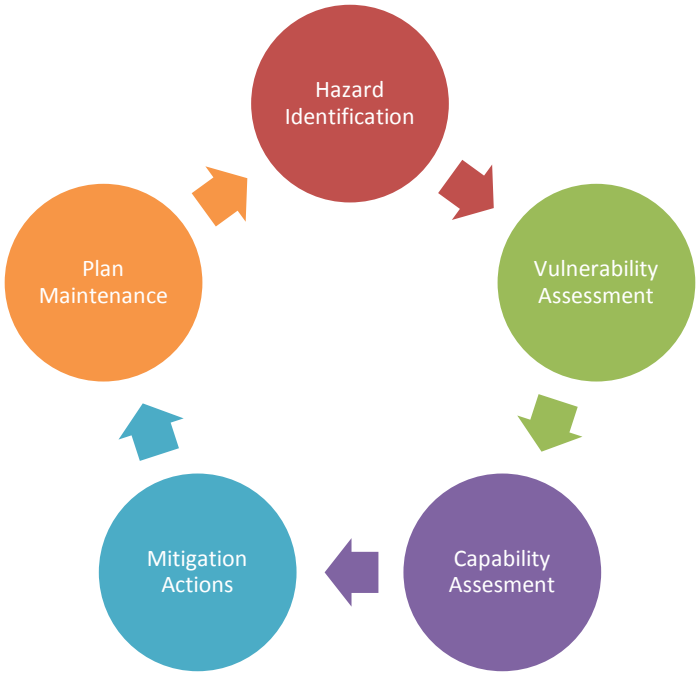
1.4 HAZARD MITIGATION PLANNING PROCESS

44 CFR 201.6(c)(1) Documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

KDEM contracted with Blue Umbrella Solutions in November 2012 to assist east-central Kansas in developing a multi-jurisdictional, multi-hazard mitigation plan. Blue Umbrella Solutions and the east-central Kansas HMPC worked together in developing this Plan to meet the requirements of the DMA 2000, as defined in regulations set forth by the Interim Final Rule (44 CFR Part 201.6). As part of this process, the following tasks were conducted:

- Consultation with FEMA Region VII on Plan development
- Review of current mitigation plans for all participating jurisdictions
- Incorporation of review elements into new regional plan
- Delivery of organizational and planning meetings
- Solicitation of public input as to Plan development
- Assessment of potential regional risks
- Assessment of vulnerabilities and assets
- Development of the mitigation actions
- Development of a draft multi-jurisdictional, multi-hazard mitigation plan
- Implementation, adoption, and maintenance of the Plan

In general, the following diagram shows the planning cycle:



1.5 PLANNING PROCESS PARTICIPATION REQUIREMENTS

44 CFR 201.6(a)(4): Multi-jurisdictional plans may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.

All eligible jurisdictions within east-central Kansas were invited to participate in the organization, drafting, completion and adoption of this Plan. Invited jurisdictions included, but were not limited to, elected officials, relevant State of Kansas agencies, counties, cities, school districts, universities and community colleges, special districts, including rural fire and water districts, non-profit agencies, and businesses.

In order to have an approved hazard mitigation plan, DMA 2000 requires that each jurisdiction participate in the planning process. Each jurisdiction choosing to participate in the development of the Plan were required to meet detailed participation requirements, which included the following:

- When practical and affordable, participation in planning meetings
- Provision of information to support the Plan development
- Identification of relevant mitigation actions
- Review and comment on Plan drafts
- Formal adoption of the plan

County Emergency Managers were designated as HMPC representatives for each participating jurisdiction within their county. Jurisdiction provision of information, identification of

mitigation actions and Plan review and comment are detailed throughout this Plan and were, in general coordinated by each relevant HMPC member.

Jurisdictions who were unable to attend meetings due to budgetary or time constraints were contacted by their HMPC member via email or phone to discuss hazard mitigation planning, including the process, goals, mitigation actions, local planning concerns and Plan review.

Multiple methods of communication with HMPC members, participating jurisdictions, and the public were used during the planning process. Communications used include:

- On-site meetings
- Telephone
- Email
- Internet resources
- Social media

1.6 CONSULTATION WITH FEMA REGION VII

Upon initiation of the planning process, a meeting was held with FEMA Region VII to review current and pending planning requirements and to discuss methods to provide for a smooth planning and review process. The meetings were held on January 3 and 4, 2013 at the FEMA Region VII offices, and the following participants were in attendance:

Participant	Organization
Joe Chandler	FEMA Region VII
Michelle Wolf	FEMA Region VII
Jeanne Bunting	State of Kansas
Matthew Eyer	Blue Umbrella Solutions

1.7 REVIEW OF PREVIOUS MITIGATION PLANS

44 CFR 201.6(b):(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Prior to the delivery of the east-central Kansas project kickoff meetings, all relevant east-central Kansas hazard mitigation plans and applicable planning documents were reviewed and mined for data to be used in the consolidation and creation of the new regional Plan, and for use to guide kickoff meeting discussions. In addition to the regional mitigation plans, the Kansas State Hazard Mitigation Plan and available relevant data from state and federal agencies was reviewed. These sources are noted throughout the Plan.

1.8 ORGANIZATIONAL AND PLANNING MEETINGS

44 CFR 201.6(b): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: ..... (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process.

Within east-central Kansas there are many jurisdictions and organizations who have a vested interest in participating in the creation and adoption of the hazard mitigation plan. An integral part of the planning process included the identification, development, and coordination of all of these entities. As such, a series of three organizational and planning meetings were scheduled and all past and potential future participants were notified by the State of Kansas as to the dates and locations of the meetings. In addition, communities neighboring the region were invited to participate in the planning process.

It is worth noting that all neighboring Kansas counties are undergoing a similar mitigation planning effort, and as part of this statewide process all county and state planners are working together toward common mitigation goals. During the creation and adoption of this plan communication channels were opened to facilitate the cross pollination of ideas, to incorporate neighboring regions concerns, and to ensure the overall preparedness of the State of Kansas.

The following table presents the date, location and purpose of each planning meeting.

Meeting Number	Date	Location	Purpose
1	08/26/2013	City of Topeka	Review of planning process, project coordination, scope, participation requirements, strategies for public involvement. Formation of HMPC. Discussion and review of potential hazards.
	08/27/2013	City of Garnett	
	08/292013	City of Lyndon	
2	1/21/2014	City of Emporia	Results of the hazard identification, classification, and delineation discussed Sections of the plan were made available for review and comment. Development of mitigation goals and actions
3	03/17/2014	City of Garnett	Review of completed draft Plan. Review of public comments. Incorporation of any changes. Discussion of approval and adoption timeframes.
	03/20/2014	City of Ottawa	
	03/20/2014	City of Lyndon	

A series of kick-off meetings were held with available representatives from jurisdictions within the planning region in attendance. At the kickoff meeting, the planning process, project coordination, scope, participation requirements, strategies for public involvement, and schedule were discussed in detail. Additionally, the HMPC was created to include the Emergency Manager from each participating county along with relevant State of Kansas partners. HMPC

members were tasked with the following roles and responsibilities that continued for the duration of the planning process:

- Meeting attendance and facilitation assistance
- Data collection and submission
- Assistance in soliciting public involvement and input
- Draft and final Plan review
- Oversight of facilitation of final Plan adoption by respective jurisdictions

During the meeting, participants were led through a guided discussion concerning hazard data sourced from their previous hazard mitigation plans. Additionally, research was conducted prior to the meeting on recent regional hazard events to further inform the discussion. Participants were encouraged to discuss past hazard events, past impacts, and the future probability for all identified hazards. Based on this discussion, a co mprehensive list of regional hazards was created.

At the conclusion of the meeting, all participants were provided with a data collection forms to solicit information needed to properly complete the Plan. The forms asked for information concerning data on hi storic hazard events, at risk populations and properties, and available capabilities. Additionally, participating jurisdictions were provided with their mitigation actions from the previous plans for review and comment, and asked to identify any additional mitigation actions.

Each participating jurisdiction was required to complete and return the forms and actions to be considered as participating. These forms were used in the development of this Plan.

A series of mid-term planning meetings were held with HMPC representatives in attendance. Based upon the initial research, discussions held during the kickoff meetings, information obtained from the data collection forms, additional research, and subsequent discussion with HMPC members, the results of the hazard identification, classification, and delineation were discussed in detail. I n addition, sections of the Plan were made available for review and comment. Based on the supplied hazard information, participants were asked to assist in the development and review of mitigation goals and actions.

A final planning meeting was held with representatives from jurisdictions within the planning region in attendance. The completed draft Plan was made available for review and comment.

1.9 PUBLIC OUTREACH

44 CFR Requirement 201.6(b): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process

As part of the overall planning process, the general public were provided with numerous opportunities to contribute and comment on the creation and adoption of the Plan. These opportunities include:

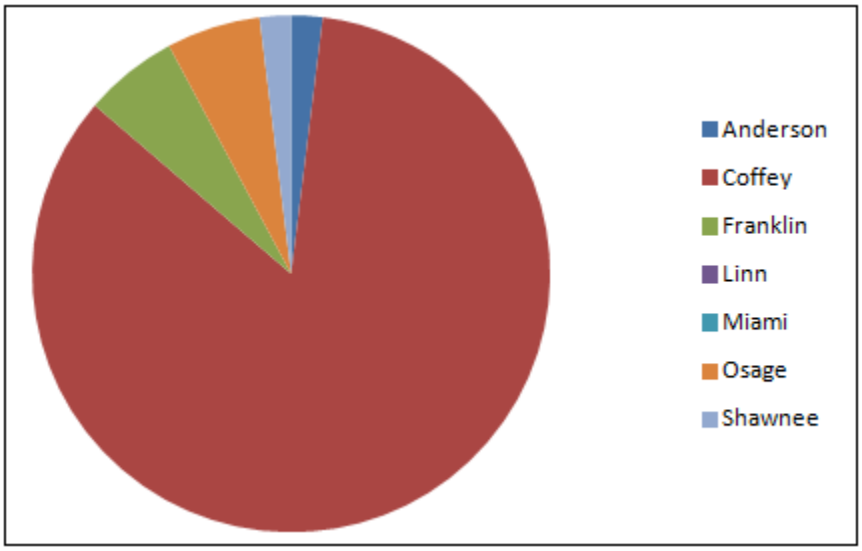
- SurveyMonkey (online survey)
- Facebook
- Meeting with local emergency managers
- Two week comment period upon completion of draft Plan

Input from the general public provided the HMPC with a clearer understanding of regional concerns, increased the likelihood of citizen buy-in concerning proposed mitigation actions, and provided elected officials with a guide and tool to set regional ordinances and regulations. This public outreach effort was also an opportunity for adjacent jurisdictions and entities to be involved in the planning process.

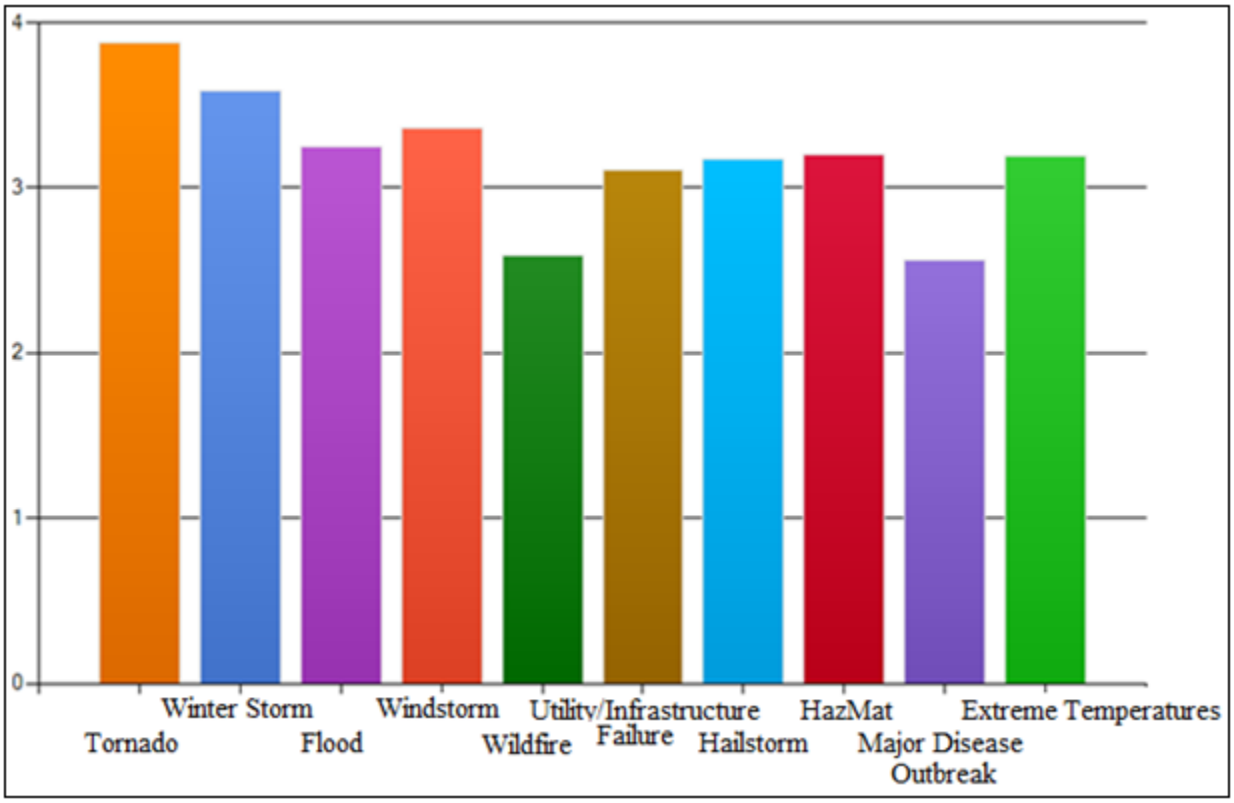
Additionally, as citizens were made more aware of potential hazards and the local and regional process to mitigation against their impacts, it was believed that they would take a stronger role in making their homes, neighborhoods, schools, and businesses safer from the potential effects of natural hazards.

The following graphics show the results of the public input, with 86 responses received, from the SurveyMonkey online survey for the region for each question asked.

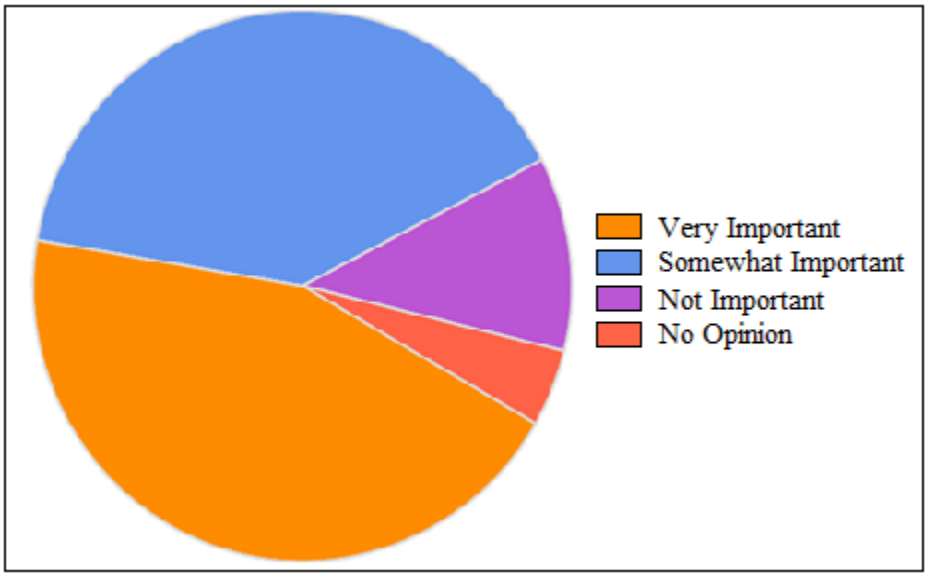
Question 1: What County and jurisdiction do you live in?



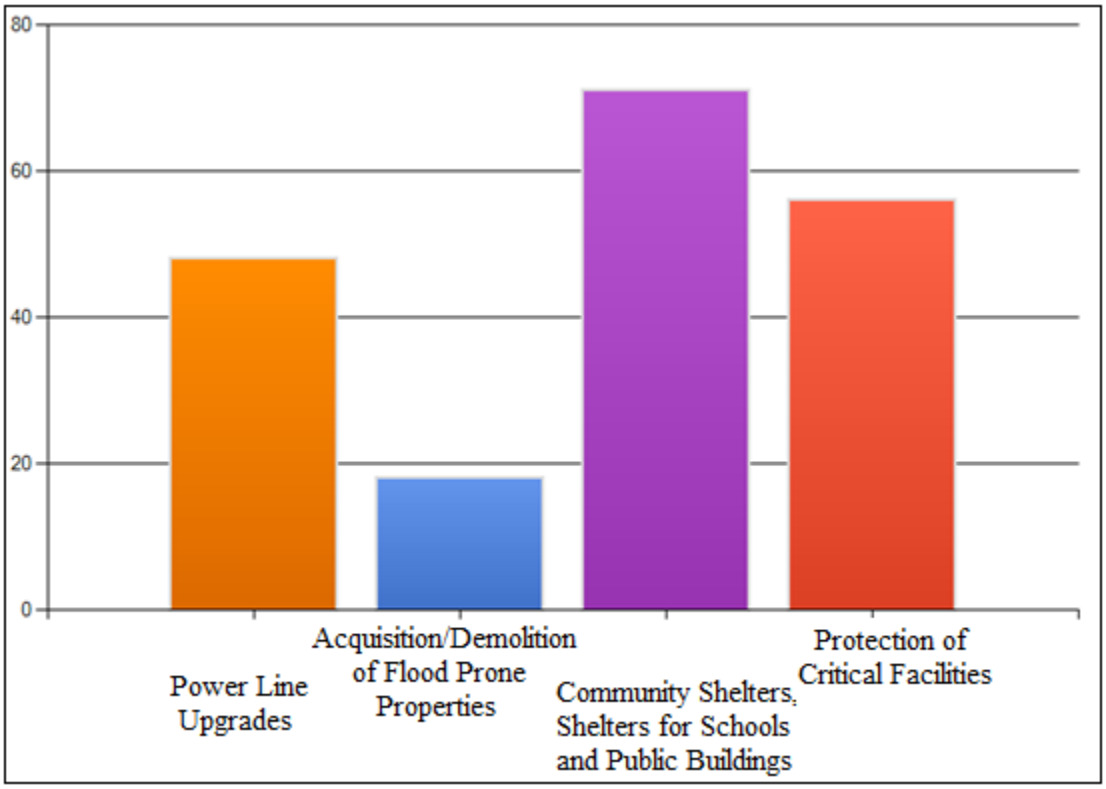
Question 2: In the Region consisting of Anderson, Coffey, Franklin, Linn, Miami, Osage and Shawnee Counties, the planning committee has determined that the hazards listed below are of significance to the area. Please indicate the level of risk, or extent of potential impacts, in the Region, that you perceive for each hazard.



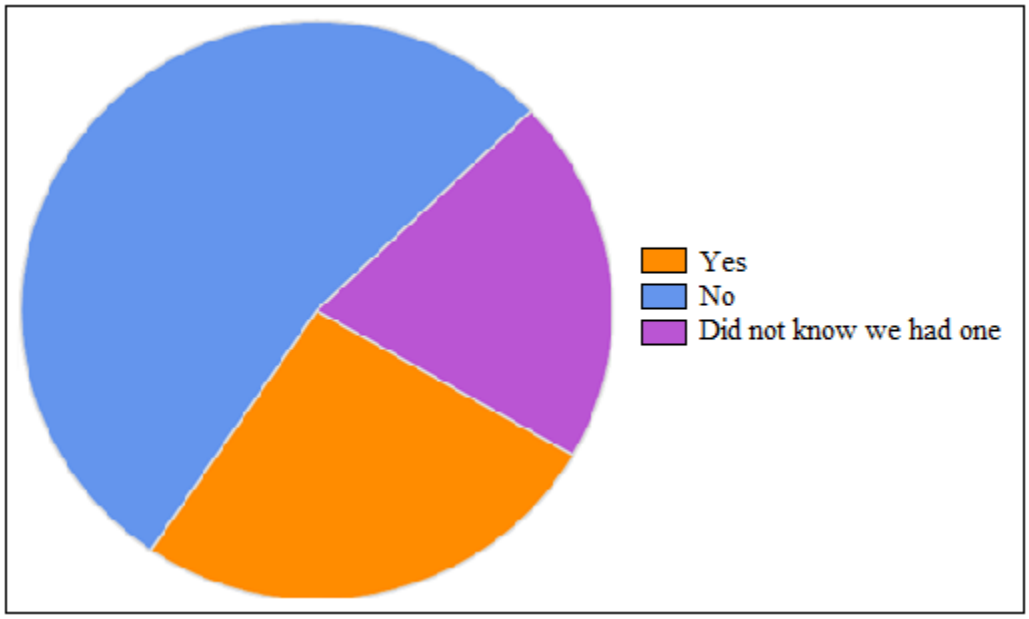
Question 3: In the region, the planning committee has determined that a flood event is a hazard for your region. How important to you is it that you participate or continue to participate in the National Flood Insurance Program?



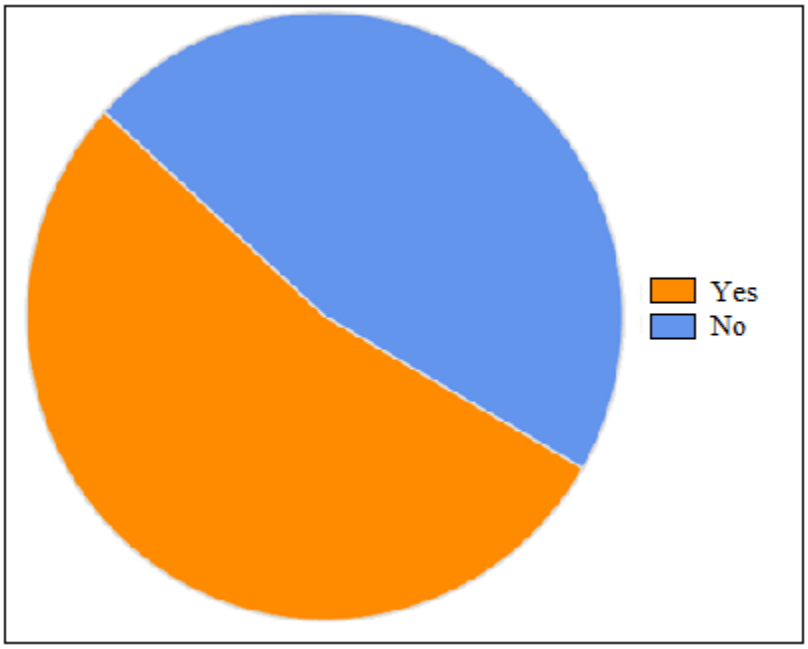
Question 4: Funding requests for FEMA Hazard Mitigation Grant Program funds are currently reviewed initially by the Kansas Division of Emergency Management. Listed below are their current funding priorities. Please check those that benefit your community.



Question 5: Have you had an opportunity to read your current Hazard Mitigation Plan?



Question 6: Do you know where the mitigation plan for your county can be found if you wanted to look at it?



In addition, the following comments relating to mitigation planning were from interested citizens of the region. Please note that questions answered with a "none," "non applicable," or similar response, or left blank are not reported.

Question 7: Your input is valuable to this planning process. Please comment on any other issues that the planning committee should consider in developing a strategy to reduce future losses caused by natural hazard events.

- John Redmond Reservoir silt removal to provide a deeper pool and thereby provide a longer term water supply for communities downstream who get their drinking water from the Neosho River.
- Storm shelters in a reasonable distance for our community would give more safety to the community. Allowing a reasonable distance for the county people to get to a shelter in a sufficient and safe amount of time.
- Preparing the public, including minors with better information on how to react to a disaster.
- Inform the public of plans through periodic reminders, column in local paper, website, etc.
- Tornado shelters in local schools
- Need shelters in each city/community & around trailer parks. This should be mandated by law.
- The town of Olivet in Osage county has no siren or alarms of any sort for warnings on weather etc
- During power outages either caused by storms or other elements need backup generators for structures that house the elderly or disabled for heat or air condition and for those who are on oxygen machines

Question 8: Do you have any mitigation projects you would like to see implemented and what are they?

- School safe rooms
- Acquisition of power generators
- Disaster shelters for the public.
- Public education dealing with how to survive disasters.
- Disaster shelters for the public.
-
- Storm shelters in each city, reinforce utility lines, redraw maps & combine GIS for all utilities to be used during emergencies.
- I would like to see a siren and a shelter built in the town of Olivet for emergencies.
- Upgrade of fire facilities
- Storm shelters for persons located in Parkside Place. We need connection with a United Way considering that in the event of a major disaster that our claims could be too small for FEMA and Red Cross does not necessarily take donations specifically for an area and give them directly to that area, but spread them over all disaster. United Way will give all donations given directly to the specific town or area. So we need to have a United Way connection BEFORE a disaster

A copy of the surveymonkey.com questionnaire may be found in Appendix C.

1.10 RISK ASSESSMENT

44 CFR 201.6(c) Plan Content. The plan shall include the following: (2) A risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment shall include: (i) A description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

44 CFR 201.6(c)(2)(iii) For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

As part of the mitigation planning effort, the hazards that could potentially impact jurisdictions in east-central Kansas were identified based on historical data, past occurrences, and local and regional knowledge. Identified hazards were then provided with a risk ranking using a weighted formula whose parameters included probability of occurrence, potential magnitude/severity of the event, event duration, warning time of occurrence.

Initially, participants of the kickoff meetings discussed hazard data sourced from their previous hazard mitigation plans and any recent regional hazard events. In general, participants were asked to consider:

- Previously identified mitigation plan hazards
- State of Kansas mitigation plan identified hazards
- FEMA identified hazards
- Recent hazard events, including declared disasters

Participants were encouraged to discuss past hazard events, including magnitude and severity, past impacts, and the future probability for all identified hazards. Based on this discussion, a comprehensive list of regional hazards was created. It should be noted that all discussed hazards did not warrant inclusion in the east-central Kansas Plan.

Finally, a data collection form to solicit and further develop the discussed hazards was provided to participants. Based upon the initial research, discussion held during the kickoff meetings, information obtained from the data collection forms, additional research, and subsequent discussion with HMPC members, a complete profile was developed for each selected hazard, and each hazard was assigned a risk ranking. HMPC participants were asked to review the profiled and developed hazards at the second planning meeting to further refine the information.

Further discussion of hazards, and justification for hazard omission may be found in Section 3.

1.11 VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

44 CFR 201.6(c)(2)(ii) A description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008 must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of: (A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; (B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate; (C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

As part of the information collection process, participating jurisdictions created an inventory of assets that could be potentially impacted by identified hazards, including a total number, identified values and potential losses, and development trends if available. Based on the gathered information an east-central Kansas assets at risk inventory was created.

Identified assets include:

- Critical facilities
- Critical infrastructure
- Historic structures and locations
- Economic assets
- Vulnerable populations
- Special needs populations

Further discussion of vulnerabilities and loss may be found throughout the Plan.

1.12 CAPABILITY ASSESSMENT

A capability assessment was conducted to determine the abilities, policies, and available resources of local and regional jurisdictions to implement mitigation actions. The following information was researched as part of the capability assessment:

- Existing and proposed local and regional ordinances, regulations, and policies
- Active and proposed plans related to mitigation planning, regional and local planning
- Current and proposed public outreach measures and programs
- Available personnel
- Available resources, including technological capabilities
- Available financial resources related to mitigation activities

Additionally, this assessment assisted in identifying any roadblocks, limitations or conflicts that could potentially obstruct mitigation actions and in identifying those activities that could be enhanced to further mitigation goals.

Further discussion of regional capabilities may be found in Section 4.

1.13 DEVELOPMENT OF MITIGATION GOALS

44 CFR 201.6(c)(3) A mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section shall include: (i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Based upon the developed regional hazards the HMPC and participating jurisdictions were asked during the second planning meeting to assist in developing a set of goals related to future hazard event outcomes. Research conducted prior to the meeting provided participants with a list of goals from previous planning efforts as a starting point for development. In general, the goals and objectives of this Plan are to:

- **Goal 1:** Reduce and/or eliminate the risk to the people and property of east-central Kansas from the identified hazards in this plan.
- **Goal 2:** Strive to protect all of the vulnerable populations, structures, and critical facilities in east-central Kansas from the impacts of the identified hazards.
- **Goal 3:** Improve public outreach initiatives to include education, awareness and partnerships with all willing entities in order to enhance understanding of the risks east-central Kansas faces due to the impacts of the identified hazards.
- **Goal 4:** Enhance communication and coordination among all agencies and between agencies and the public.

The above identified goals are discussed in detail in Section 5 of this Plan.

1.14 DEVELOPMENT OF MITIGATION ACTIONS

44 CFR 201.6(c)(3)(ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate. (iii) An action plan describing how the actions identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. (iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

To accomplish the above identified goals, the HMPC has developed a list of robust and achievable m itigation actions for each participating jurisdiction that address hazard vulnerabilities that exist today and in the foreseeable future.

The mitigation actions noted in this Plan include both structural and non-structural measures. Examples include:

- Requiring resistant new construction
- Relocation of structures
- Structural modification
- Construction of shelters
- Construction of barrier, deflection, or retention systems
- Detection and warning systems
- Regulatory measures
- Community awareness and education programs
- Behavioral modification

Mitigation actions were prioritized by the responsible jurisdiction based on both historical and new information and jurisdictional capabilities.

A complete discussion of the development of mitigation actions can be found in Section 5.

1.15 DEVELOPMENT OF EAST-CENTRAL KANSAS MULTI-HAZARD MITIGATION PLAN

44 CFR 201.6(d) Plan review.(1) Plans must be submitted to the State Hazard Mitigation Officer (SHMO) for initial review and coordination. The State will then send the plan to the appropriate FEMA Regional Office for formal review and approval. Where the State point of contact for the FMA program is different from the SHMO, the SHMO will be responsible for coordinating the local plan reviews between the FMA point of contact and FEMA.

Information obtained from previous mitigation plans, research, meetings, data collection forms, conversations, and public input was used to complete a draft of the Plan. The Plan was made available online for review for public comment. Valid comments and suggestions received from stakeholders were integrated into the final Plan. The Plan was then submitted to the Kansas Division of Emergency Management SHMO for initial review. The SHMO then submitted the Plan to FEMA Region VII for review and approval

1.16 PLAN ADOPTION, REVIEW AND MAINTENANCE

44 CFR 201.6(c)(4) A plan maintenance process that includes: (i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle. (ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate. (iii) Discussion on how the community will continue public participation in the plan maintenance process.

44 CFR 201.6(c)(5) Documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

In order to have an approved hazard mitigation plan, DMA 2000 requires that each jurisdiction officially adopt the Plan. After FEMA Region VII review and Approval Pending Adoption status participating jurisdictions were tasked with formally adopting the Plan. Information concerning adoption dates and, if applicable, resolution number were presented in the Resolutions of Adoption section and copies of the resolutions are presented in Appendix A.

Prior the Plan adoption process, the HMPC developed a long-term maintenance strategy. This strategy is discussed in detail in Section 6.

1.17 PLANNING PROCESS PARTICIPATION

44 CFR 201.6(a)(4): Multi-jurisdictional plans may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.

1.17.1 ANDERSON COUNTY

	Meeting Attendance or Communication with HMPC Representative	Data Submission	Mitigation Action
Anderson County	x	x	x
City of Colony	x	x	x
City of Garnett	x	x	x
City of Greeley	x	x	x
City of Kincaid	x	x	x
City of Westphalia	x	x	x
USD #365 - Garnett	x	x	x
USD #479 - Crest	x	x	x

1.17.2 COFFEY COUNTY

	Meeting Attendance or Communication with HMPC Representative	Data Submission	Mitigation Action
Coffey County	x	x	x
City of Burlington	x	x	x
City of Gridley	x	x	x
City of Lebo	x	x	x
City of LeRoy	x	x	x
City of New Strawn	x	x	x
City of Waverly	x	x	x
USD #243 - Lebo /Waverly	x	x	x
USD #244 - Burlington	x	x	x
USD #245 - LeRoy / Gridley	x	x	x

1.17.3 FRANKLIN COUNTY

	Meeting Attendance or Communication with HMPC Representative	Data Submission	Mitigation Action
Franklin County	x	x	x
City of Lane	x	x	x
City of Ottawa	x	x	x
City of Pomona	x	x	x
City of Princeton	x	x	x
City of Rantoul	x	x	x
City of Richmond	x	x	x
City of Wellsville	x	x	x
City of Williamsburg	x	x	x
USD #287 - West Franklin	x	x	x
USD #288 - Central Heights	x	x	x
USD #289 - Wellsville	x	x	x
USD #290 - Ottawa	x	x	x
Rural Water District #6	x	x	x

1.17.4 LINN COUNTY

	Meeting Attendance or Communication with HMPC Representative	Data Submission	Mitigation Action
Linn County	x	x	x
City of Blue Mound	x	x	x
City of LaCygne	x	x	x
City of Linn Valley	x	x	x
City of Mound City	x	x	x
City of Parker	x	x	x
City of Pleasanton	x	x	x
City of Prescott	x	x	x
USD #344 - Pleasanton	x	x	x
USD #346 - Mound City	x	x	x
USD #362 - Prairie View	x	x	x
Rural Water District #1	x	x	x
Rural Water District #2	x	x	x
Rural Water District #3	x	x	x
Water Supply District #13	x	x	x

1.17.5 MIAMI COUNTY

	Meeting Attendance or Communication with HMPC Representative	Data Submission	Mitigation Action
Miami County	x	x	x
City of Fontana	x	x	x
City of Louisburg	x	x	x
City of Osawatomie	x	x	x
City of Paola	x	x	x
USD #367 - Osawatomie	x	x	x
USD #368 - Paola	x	x	x
USD #416 - Louisburg	x	x	x
Rural Water District #3	x	x	x

1.17.6 OSAGE COUNTY

	Meeting Attendance or Communication with HMPC Representative	Data Submission	Mitigation Action
Osage County	x	x	x
City of Burlingame	x	x	x
City of Carbondale	x	x	x
City of Lyndon	x	x	x
City of Melvern	x	x	x
City of Osage	x	x	x
City of Overbrook	x	x	x
City of Quenemo	x	x	x
City of Scranton	x	x	x
Three Lakes Educational Cooperative	x	x	x
USD #420 - Osage City	x	x	x
USD #421 - Lyndon	x	x	x
USD #434 - Santa Fe Trail	x	x	x
USD #454 - Burlingame	x	x	x
USD #456 - Marias Des Cygnes Valley	x	x	x
Fire District #6	x	x	x
Osage Water District #3	x	x	x

1.17.7 SHAWNEE COUNTY

	Meeting Attendance or Communication with HMPC Representative	Data Submission	Mitigation Action
Shawnee County	x	x	x
City of Auburn	x	x	x
City of Rossville	x	x	x
City of Silver Lake	x	x	x
City of Topeka	x	x	x
USD #321 - Kaw Valley	x	x	x
USD #345 - Seaman	x	x	x
USD #372 - Silver Lake	x	x	x
USD #437 - Auburn / Washinburn	x	x	x
USD #450 - Shawnee Heights	x	x	x
USD #501 - Topeka	x	x	x

1.17.8 STAKEHOLDERS

The following list includes stakeholders involved in the planning process, including private, non-profit and charitable organizations.

Stakeholder	Meeting Attendance or Communication with HMPC Representative	Mitigation Action
Lyon/ Coffey Electric Cooperative	x	x
Heartland Electrical Cooperative	x	x

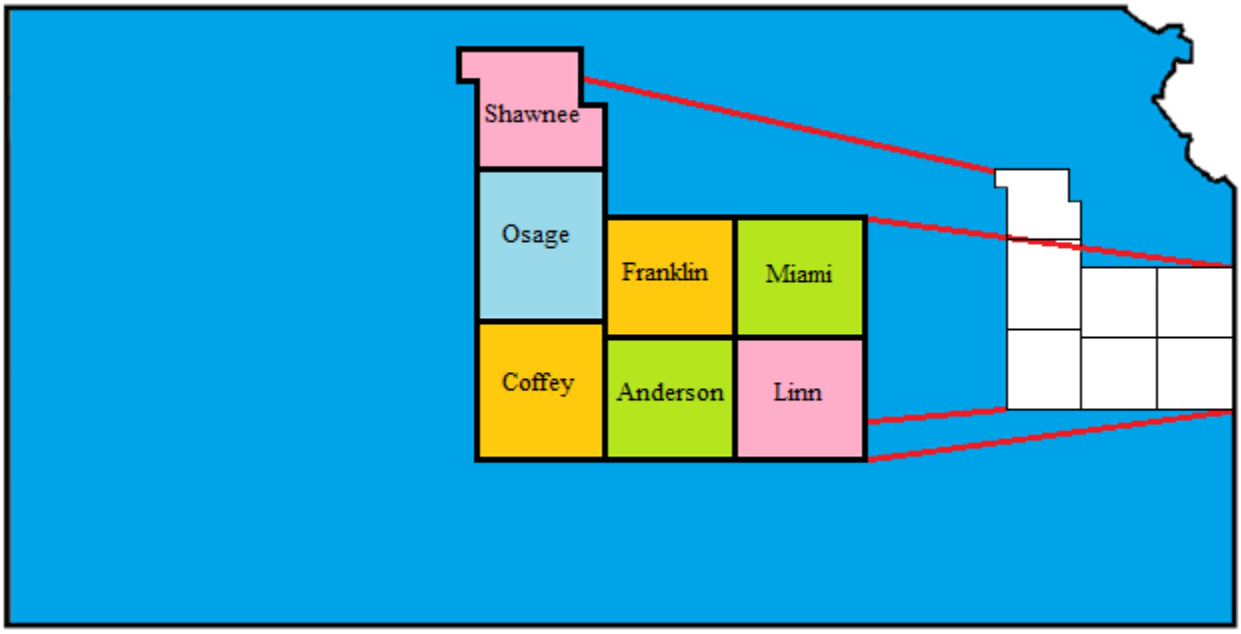
1.18 NON-PARTICIPATING JURISDICTIONS

The following jurisdictions, identified as participating in the last hazard mitigation planning process for their respective counties, elected not to participate in this planning iteration: Franklin County Rural Water District #1 and the City of Willard, Shawnee County. Because this is a regional plan data from these non-participating jurisdictions may be included throughout the plan. Each of these jurisdictions will be encouraged to participate in future plan iterations.

2.0 REGIONAL PROFILE

2.1 PLANNING REGION

The east-central Kansas planning region includes Anderson, Coffey, Franklin, Linn, Miami, Osage and Shawnee counties, as well as the cities and towns located within these counties. The counties and majority of the cities participating in the 2014 hazard mitigation plan update plan are briefly summarized in the following two sections.



2.2 COUNTY PROFILES

The following includes a general discussion of participating counties.

Anderson County



Anderson County is located in the east-central Kansas and encompasses 584 square miles, with approximately 1.4 square miles being covered by water. It is bound to the north by Franklin County, to the south by Allen County, to the east by Linn County and to the west by Coffey County. The County seat is the City of Garnett.

The area encompassing Anderson County was originally settled by the Pottawatomie Tribe. In 1855, Atchison County was established and named in honor of J oseph Anderson, a

member of the Kansas Territorial Legislature. The county was organized after a year long struggle caused by differing free-state and slave-state factions appointed to organize the county.

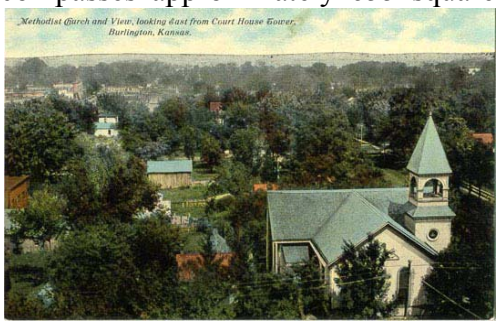
There are no major rivers within Anderson County, although a small portion of the Little Osage River crosses the extreme southeast corner of the county. Major creeks in the county include Cedar Creek, Pottawatomie Creek and Iantha Creek. Lakes in Anderson County include Cedar Creek Reservoir, Lake Garnett, Crystal Lake, Andrews Lake, Garrison Lake, Lake Welda, Snake Lake, and Spencer Lake.

Major roads include U.S. Highway 59, a north-south route that travels through the cities of Garnett and Kincaid and U.S. Highway 169, a north-south route that passes through Greeley and Garnett and near Colony. State Highways include K-57, a east-west route that passes through the city of Colony where it merges with U.S. Highway 169 and K-31, an north-south route that passes through Harris and Garnett.

According to the 2012 United States Census (Census), the population estimate for Anderson County was 7,917 (a 2.4% decrease from a 2000 Census population of 8,110), with a population density of 14 people per square mile.

Coffey County

Coffey County is located in east-central Kansas and encompasses approximately 655 square miles, with approximately 25 square miles being covered by water. It is bound to the north by Osage County, to the south by Woodson County, to the east by Franklin and Anderson Counties, and to the west by Lyon and Greenwood Counties.



The area encompassing Coffey County was originally occupied by the Fox Indians. Coffey County was founded in 1859, with the county seat as the City of Burlington, and was one of the original 33 counties created by the Territorial Legislature. Coffey County was named for Colonel A.M. Coffey, a member of the first Territorial Legislative Council.

The main water course is the Neosho River, which enters the county in the northwest and flows to the southeast. Its tributaries from the north are, Lebo, Hickory, Wolf, Long, Crooked and Spring creeks, and from the south, Duck, Turkey, Big, Rock, Otter and Eagle creeks. Lakes in Coffey County include the John Redmond Reservoir, Coffey County Lake, Gridley Lake, Lebo Lake, Birk Lake, Mathias Lake, and New Strawn Lake.

Major roads include Interstate 35, an east-west route in the northwest corner of the county and U.S. Highway 75, a north - south route that passes through New Strawn and Burlington. State Highways include K-31, an east-west route passing through Waverly and K-57, an east - west route that passes through Gridley and LeRoy.

According to 2012 Census data, the population estimate for Coffey County was 8,502 (a 4% decrease from a 2000 Census population of 8,865), with a population density of 13 people per square mile.

Franklin County



Franklin County is located in east-central Kansas and encompasses 577 square miles, with approximately 2.8 square miles being covered by water. It is bound to the north by Douglas County, to the south by Anderson County, to the east by Miami County, and to the west by Coffey and Osage Counties.

The area encompassing Franklin County was originally occupied by the Osage Indians. Franklin County was organized in 1855, with the county seat as the City of Ottawa, as one of the first 33 counties organized by the Territorial Legislature The county was named in honor of Benjamin Franklin. The Pottawatomie Massacre, led by John Brown, near Lane on May 24, 1856, is indicative of the county's place in the early free-state, pro slavery difficulties.

The main water course is the Marais des Cygnes River which flows from west to east across the county. Several creeks originating from north of Franklin County flow southward into the Marais des Cygnes River, and include Appanoose Creek, Eightmile Creek, and Tauy Creek. Additional tributaries of the Marais des Cygnes River include Hickory Creek, Middle Creek, and Coal Creek. In the southern part of Franklin County, the predominant creeks include Iantha Creek, Sac Creek, and Pottawatomie Creek. Several named lakes are located in Franklin County, including Richmond Lake, Capps Lake, Natural Springs Lake, and Gilkey Lake.

Major roads include Interstate 35, which crosses the county from the northeast to the southwest and U.S. Highway 59, a north-south route that passes through Ottawa, Princeton and Richmond. State Highways include K-68, north-south route that passes through Pomona and Ottawa.

According to 2012 Census data, the population estimate for Franklin County was 25,906 (a 4.5% increase from a 2000 Census population of 24,784), with a population density of 45 people per square mile.

Linn County

Linn County is located in east-central Kansas along the border with Missouri. The county encompasses 606 square miles, with approximately 7.6 square mile being covered by water. It is bound to the north by Miami County, to the south by Bourbon County, to the east by Bates County, Missouri, and to the west by Anderson County.

Linn County was organized in 1855 as one of the first 33 counties created by the Territorial Legislature, with Mound City as the county seat. The county was named for Lewis F. Linn, a United States Senator from Missouri. The county is know for three major early events, the

Marais des Cygnes Massacre in 1858, the Battle of Middle Creek in 1856, and the Battle of Mine Creek in 1864.

The main water courses include the Marais des Cygne River, which enters Linn County at the north county line and flows in a southeasterly direction, exiting along the eastern border of the county. Major tributary streams include the Big Sugar Creek, Little Sugar Creek, and Mine Creek. In addition, Linn County has 28 named streams. Major lakes include La Cygne Reservoir, Mound City Lake, Pleasanton City Lake East, Pleasanton City Lake West, Blue Mound City Lake, Boicourt Lake, Bradley Lake, Lake Chaparral, Lake De Lago, Prescott City Lake, Stave Lake, Timber Lake, Parker Lake and Critzer Reservoir.



Major roads include Highway 69, north-south route passing through Linn Valley and Pleasanton. State Highways include K-3, a north-south route, K-7, a north-south route that passes through Mound City, K-152, an east-west route passing though La Cygne, K-52, an east-west route passing through Mound City and K-31, an east-west route passing through Blue Mound.

According to 2012 Census data, the population estimate for Linn County was 9,441 (a 1.3% decrease from a 2000 Census population of 9,570), with a population density of 16 people per square mile.

Miami County



Miami County is located in east-central Kansas, along the state border with Missouri. The county encompasses 590 square miles, with approximately 13.4 square miles being covered by water. It is bound to the north by Johnson County, to the south by Linn County, to the east by Cass County, Missouri, and to the west by Franklin County.

The area encompassing Miami County was originally occupied by the Miami Indians. Miami County was established in 1855 under the name Lykins, in honor of Dr. David Lykins, a missionary among the Miami. The name was changed in 1861 to Miami with Paola as the county seat. The county was the headquarters of free-state proponent John Brown, and is known for the Battle of Osawatomie in 1856.

The main water course is the Marais des Cygnes River, which enters the county along the southern border and flows northwest to Franklin County. There are 35 named streams in the county, including Pottawatomie Creek, Bull Creek, Rock Creek, Wade's Branch, Little Bull Creek, Ten Mile Creek, Wea Creek, Elm Creek, Middle Creek, Sugar Creek, Walnut Creek and Mound Creek. Major lakes in the county include Hillside State Lake, Miami County State Lake, Miola Lake, Osawatomie City Lake, Paola Lake, Wagstaff Lake, Hunters Lake and Louisburg Lake.

Major roads include U.S. Highway 69, a north-south route that passes near Louisburg and U.S. Highway 169, a north-south route passing through Paola. State Highways include K-68, a east-west route that passes near Louisburg and Paola and K-7 an north-south route passes through the center of the county.

According to the 2012 United States Census, the population estimate for Miami County was 32,612 (a 15% increase from a 2000 Census population of 28,351), with a population density of 55 people per square mile.

Osage County



Osage County is located in east-central Kansas. The county encompasses 703 square miles, with approximately 15.7 square miles being covered by water. It is bound to the north by Shawnee County, to the south by Coffey County, to the east by Franklin and Douglas Counties, and to the west by Wabaunsee and Lyon Counties.

The area encompassing Osage County was originally occupied by the Shawnee, Sac and Fox Indians. Osage County was established in 1855 under the name Weller County, in honor of Senator John Weller of California, a pro slave supporter. The county was one of the first 33 counties created by the Territorial Legislature. The name was changed in 1859 to Osage, after the Osage River, with Lyndon as the county seat.

The main water course is the Marais des Cygnes River, which flows in a generally eastern direction. Other major streams include 110 Mile Creek and Dragoon Creek. Major lakes include Pomona Lake, Melvern Lake, Osage State Fishing Lake, Strowbridge Lake, Osage City Lake and Scranton City Lake.

Major roads include Interstate 335, and north-south route that travels through the northwest corner of the county, Interstate 35, a north-south route passing through the southeast corner of the county, U.S. Highway 56, an east-west route passing through Burlingame and U.S. Highway 75, a north-south route passing through Lyndon and Carbondale. State Highways include K31, an east-west route that passes through the city of Osage.

According to 2012 Census data, the population estimate for Osage County was 16,142 (a 3.4% decrease from a 2000 Census population of 16,712), with a population density of 23 people per square mile.

Shawnee County

Shawnee County is located in east-central Kansas. The county encompasses 556 square miles, with approximately 6.5 square miles being covered by water. It is bound to the north by Jackson County, to the south by Osage County, to the east by Jefferson and Douglas Counties, and to the west by Wabaunsee and Pottawatomie Counties.



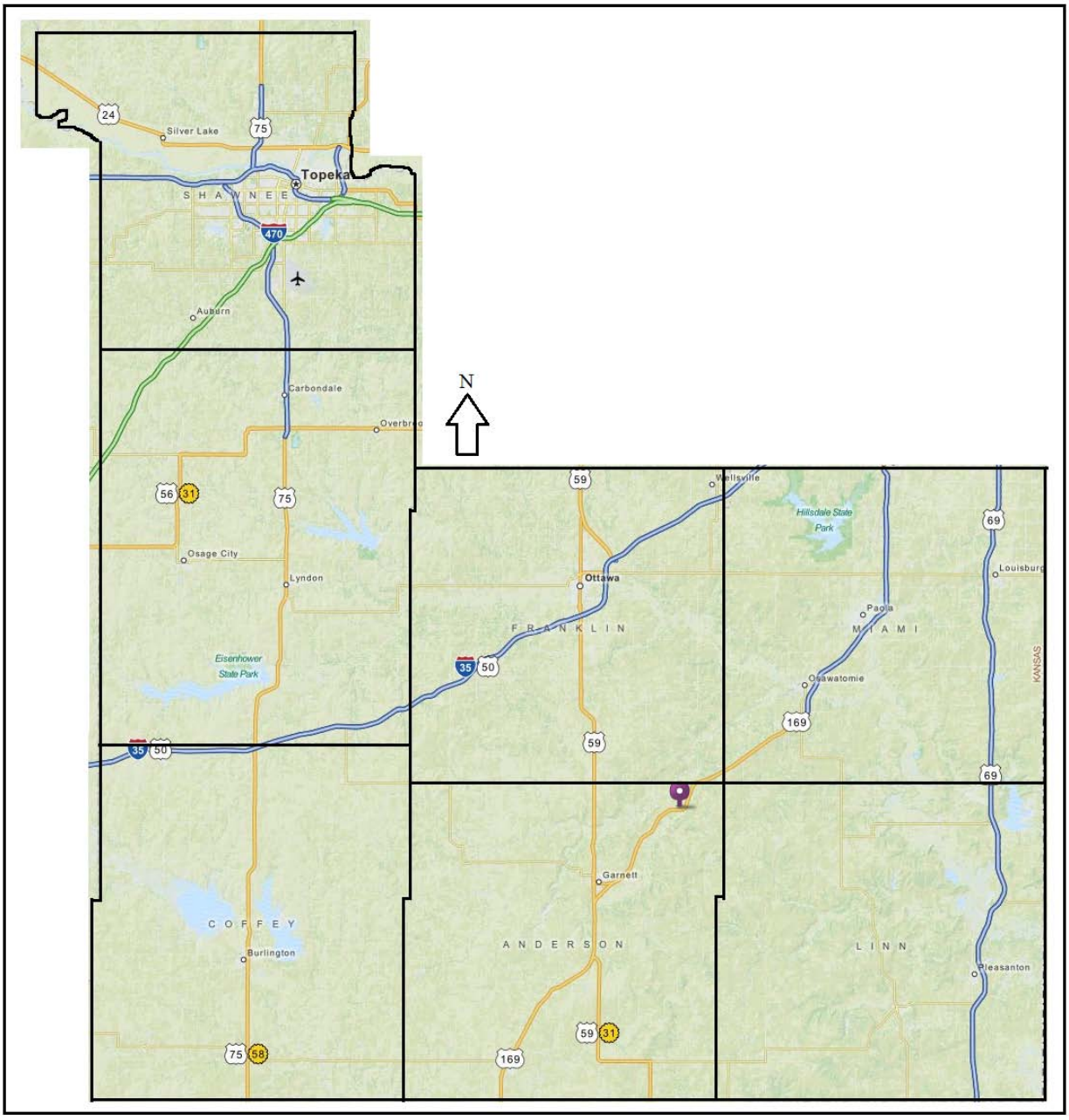
The area encompassing Shawnee County was originally occupied by the Shawnee, Kansas, and Pottowatomie Indian tribes. Shawnee County was organized in 1855, with Topeka as the county seat, and was named in honor of the Shawnee Indian Tribe.

The main water courses are the Kansas River, which flows in a generally southeast direction, and the Wakarusa River, which flows in a generally east/northeast direction. Thirty-three named streams were identified in Shawnee County including Cross Creek, Indian Creek, Mission Creek, Shunganunga Creek and Soldier Creek. Major lakes include Shawnee County Lake, Shawnee County State Lake, Lake Jivaro, Sherwood Lake and Silver Lake.

Major roads include Interstate 70, an east-west route passing through Topeka, Interstate 335, a north-south route that passes through Topeka, Interstate 470, a southwest running route that passes through Topeka and branches into Interstate 70, U.S. Highway 75, a north-south route passing through Topeka, and U.S. Highway 24, an east-west route that passes through Rossville, Silver Lake and Topeka. State Highways include K- 4, a northeast running route that passes through Topeka.

According to 2012 Census data, the population estimate for Shawnee County was 178,991 (an 5.4% increase from a 2000 Census population of 169,871), with a population density of 322 people per square mile.

2.3 CITY PROFILES



The following includes a brief discussion of participating cities, broken down by county.

Anderson County

Colony is located in the southwest corner of the county along Highway 169. The 2010 census indicates the city has a total area of 0.52 square miles a population of 408.

Garnett is located near the center of the county, along Highway 59. The 2010 census indicates the city has a total area of 3.20 square miles, with 0.1 square miles of water, and a population of 3,415. Garnett is the county seat of Anderson County.

Greeley is located in the northeast corner of the county along Highway 169. The 2010 census indicates the city has a total area of 0.37 square miles, with 0.01 square miles of water, and a population of 302.

Kincaid is located in the southeast corner of the county along Highway 31. The 2010 census indicates the city has a total area of 0.50 square miles and a population of 122.

Westphalia is a located on the western border of the county. The 2010 census indicates the city has a total area of 0.19 square miles and a population of 163.

Coffey County

Burlington is located in the center of the county along Highway 75. The 2010 census indicates the city has a total area of 2.21 square miles, with 0.01 square miles of water, and a population of 2,674. The Burlington is home to the Wolf Creek Generating Station, the only nuclear power plant in Kansas. Burlington serves as the County Seat of Coffey County.

Gridley is located in the southwest corner of the county, along Highway 58. The 2010 census indicates the city has a total area of 0.47 square miles, with 0.06 square miles of water, and a population of 341.

New Strawn is located near the center of the county along Highway 75. The 2010 census indicates the city has a total area of 0.82 square miles, with 0.04 square miles of water, and a population of 394. New Strawn was built during the construction of the John Redmond Reservoir, which caused the town of Strawn to be abandoned as it was in a flood area.

Lebo is located on the northern border of the county, just south of Interstate 35. The 2010 census indicates the city has a total area of 0.96 square miles, with 0.09 square miles of water, and a population of 940.

LeRoy is located in the southeast corner of the county along Highway 58. The 2010 census indicates the city has a total area of 0.82 square miles, with 0.01 square miles of water, and a population of 561. During the Civil War the town had a military post to guard against Confederate guerrilla attacks and attacks by unfriendly Indians.

Waverly is located in the northeast corner of the county along Highway 31. The 2010 census indicates the city has a total area of 0.72 square miles, with 0.01 square miles of water, and a population of 592.

Franklin County

Lane is located in the southeast corner of the county. The 2010 census indicates the city has a total area of 0.24 square miles and a population of 225.

Ottawa is located near the center of the county at the intersection of Highways 68 and 59, just north of Interstate 35, along the Marais des Cygnes River. Ottawa is the County Seat of Franklin County The 2010 census indicates the city has a total area of 9.42 square miles, with 0.1 square miles of water, and a population of 12,649.

Pomona is located near the western border of the county along Highway 68/268. The 2010 census indicates the city has a total area of 0.75 square miles and a population of 832.

Princeton is located near the center of the county along Highway 59. The 2010 census indicates the city has a total area of 0.33 square miles and a population of 277.

Rantoul is located on the eastern border of the county. The 2010 census indicates the city has a total area of 0.15 square miles and a population of 184.

Richmond is located on the southern border of the county along Highway 59. The 2010 census indicates the city has a total area of 0.30 square miles and a population of 464.

Wellsville is located in the northeast corner of the county, just north of Interstate 35. The 2010 census indicates the city has a total area of 1.40 square miles, with 0.1 square miles of water, and a population of 1,857.

Williamsburg is located in the southwest corner of the county along Interstate 35. The 2010 census indicates the city has a total area of 0.66 square miles, with 0.1 square miles of water, and a population of 397.

Linn County

Blue Mound is located in the southwest corner of the county along Highway 31. The 2010 census indicates the city has a total area of 0.63 square miles and a population of 275.

La Cygne is located in the northeast corner of the county along Highway 152 and the Marais des Cygnes River. La Cygne was founded in 1869 and is derived from the French word for swan. The 2010 census indicates the city has a total area of 1.53 square miles, with 0.02 square miles of water, and a population of 1,149.

Linn Valley is located in the northeast corner of the county, near the state border with Missouri, along the Highway 69. The 2010 census indicates the city has a total area of 2.97 square miles, with 0.25 square miles of water, and a population of 804.

Mound City is located in the southeast corner of the county at the intersection of Highways 7 and 52. Mound City is named for native American funerary monuments discovered in its vicinity and is the County Seat of Linn County. The 2010 census indicates the city has a total area of 1.27 square miles, with 0.20 square miles of water, and a population of 694.

Parker is located in the northwest corner of the county. The 2010 census indicates the city has a total area of 0.27 square miles and a population of 277.

Pleasanton is located in the east-central portion of the county, along Highway 52/69, near the state border with Missouri. In 1864, General Alfred Pleasanton defeated the Confederates in the Battle of Mine Creek near present day Pleasanton. This battle resulted in a Union victory which ended the threat of Confederate invasion in Kansas. The 2010 census indicates the city has a total area of 2.05 square miles, with 0.25 square miles of water, and a population of 1,216.

Prescott is located in the southeast corner of the county, just east of Highway 69, and near the state border with Missouri. The 2010 census indicates the city has a total area of 0.28 square miles, with 0.02 square miles of water, and a population of 264.

Miami County

Fontana is located in the southern portion of the county. The name Fontana comes from the French word fontaine, meaning fountain or a spring-like water source. The 2010 census indicates the city has a total area of 0.94 square miles and a population of 224.

Louisburg is located on the eastern border of the county, at the intersection of Highways 68 and 69, near the state border with Missouri. Louisburg was originally named Little St. Louis, but was renamed Louisburg in 1870. The 2010 census indicates the city has a total area of 6.12 square miles, with 0.55 square miles of water, and a population of 4,315.

Osawatomie is located near the center of the county, along Highway 169, and along the Marais des Cygnes River. Osawatomie's name is a compound of two primary native American Indian tribes from the area, the Osage and Pottawatomie. The 2010 census indicates the city has a total area of 5.11 square miles, with 0.11 square miles of water, and a population of 4,447.

Paola is located in the center of the county along Highway 196. Paola is the largest city in Miami County and is the county seat. The 2010 census indicates the city has a total area of 5.32 square miles, with 0.42 square miles of water, and a population of 5,602.

Osage County

Burlingame is located in the northwest corner of the county along Highway 56. Burlingame was originally established as Council City, but changed name sin 1858 in Honor of Anson Burlingame. The 2010 census indicates the city has a total area of 0.89 square miles and a population of 934.

Carbondale is located near the northern border the county along Highway 75. Carbondale was founded in 1872. The 2010 census indicates the city has a total area of 0.77 square miles, with 0.02 square miles of water, and a population of 1,437.

Lyndon is located near the center of the county along Highway 75. Lyndon serves as the County Seat for Osage County. The 2010 census indicates the city has a total area of 0.83 square miles and a population of 1,052.

Melvern is located near the southeast corner of the county along Highway 31 and the Marais des Cygnes River. The 2010 census indicates the city has a total area of 0.35 square miles and a population of 385.

Osage City is located near the center of the county at the intersection of Highway 31 and 56. Osage City was incorporated as a city in April 187 and was historically known for coal mining. The 2010 census indicates the city has a total area of 3.29 square miles, with 0.08 square miles of water, and a population of 2,943.

Overbrook is located in the northeast corner of the county along Highway 56. Overbrook is named after the Pennsylvania hometown of a railroad construction engineer. The 2010 census indicates the city has a total area of 0.55 square miles and a population of 1,058.

Quenemo is located on the eastern border of the county along Highway 68 and the Marais des Cygnes River. The 2010 census indicates the city has a total area of 0.44 square miles and a population of 388.

Scranton is located near the northern border of the county along Highway 56. The 2010 census indicates the city has a total area of 1.07 square miles and a population of 710.

Shawnee County

Auburn is located in the southwest corner of the county Just west of Interstate 335. Auburn was originally named Brownsville, after its founder John Brown ,but the name was changed in the 1860s to avoid confusion with another town with the same name. The 2010 census indicates the city has a total area of 0.64 square miles and a population of 1,127.

Rossville is located near the northwest corner of the county along Highway 24. Edna was originally selected as the town's name, but later it was renamed to Rossville after William W. Ross. The 2010 census indicates the city has a total area of 0.61 square miles and a population of 1,151.

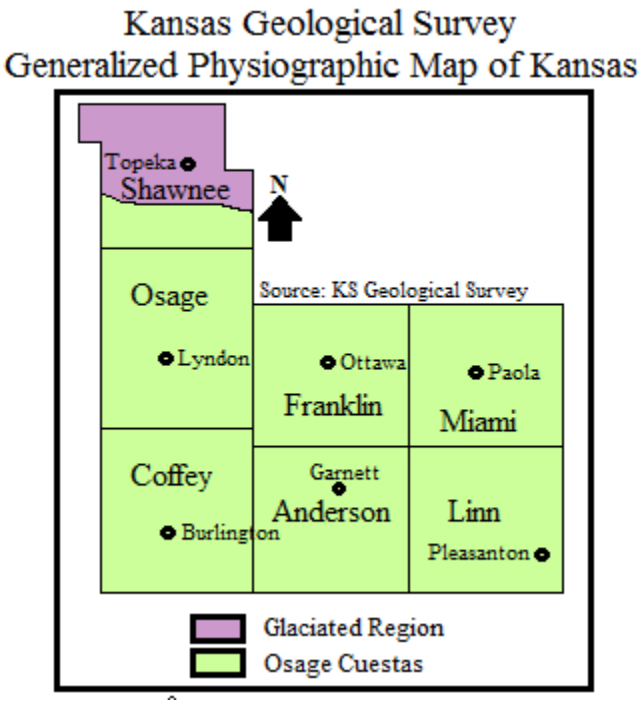
Silver Lake is located near the northwest corner of the county along Highway 24. The city was incorporated in 1871. The 2010 census indicates the city has a total area of 0.60 square miles, with 0.02 square miles of water, and a population of 1,439.

Topeka is located near the center of the county along Interstates 70, 335 and 470 and the Kansas River. Topeka is both the State Capital and the County Seat of Shawnee County. The city is well known for the landmark United States Supreme Court case Brown vs. Board of Education of Topeka which declared segregation in public schools on a ccount of race to be unconstitutional. On June 8, 1966, Topeka was struck by an F5 tornado Total dollar cost was put at $100,000,000. The 2010 census indicates the city has a total area of 61.47 square miles, with 1.30 square miles of water, and a population of 127,473.

Willard is located in the northwest corner of the county along the Kansas River. The 2010 census indicates the city has a total area of 0.11 square miles and a population of 92.

2.4 REGIONAL GEOLOGY AND HYDROLOGY

The Kansas landscape was formed by alternating periods of deposition and erosion. The east-central region of Kansas contains two distinct physiographic regions. Each region is differentiated by underlying rock formations, overlying soil types, and land use suitability. The following physiographic regions are found within east-central Kansas.





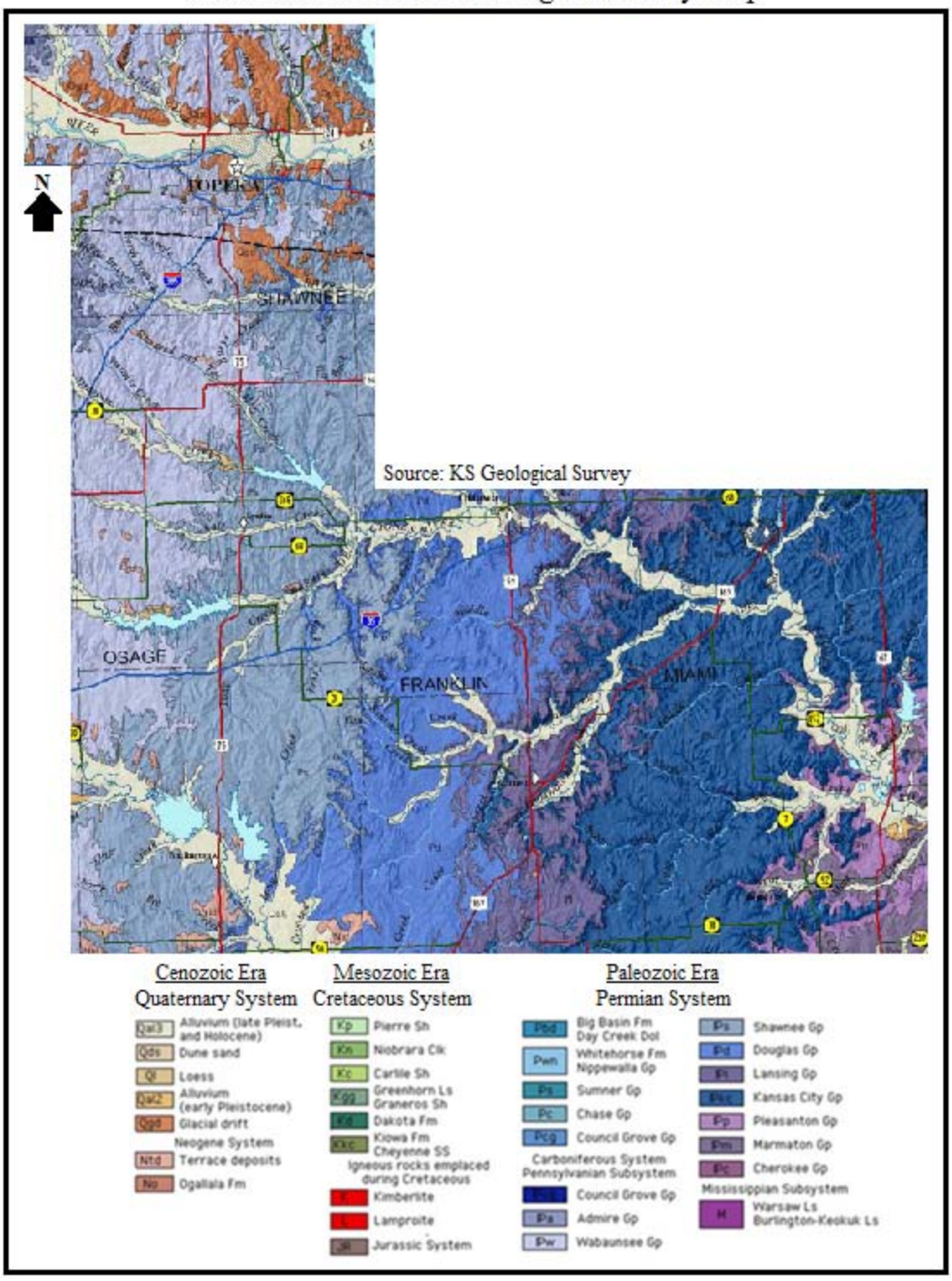
The **Glaciated Region** was covered by at least two of the eight or nine glaciers that encroached upon much of the northern United States during the Pleistocene Epoch, between 1.6 million and 10 thousand years ago. The underlying bedrock is generally limestone and shale. These rock have been covered by thick glacial deposits, or glacial drift, including silt and loose rock referred. These glacial drifts tend to form deep soils.



The **Osage Cuesta** region covers a large portion of east-central Kansas. The region is characterized by east facing ridges or cliffs with gentle slopes on the other (generally west) side of the ridge. The region derives its name from the Spanish word Cuesta, meaning hill or cliff. During the Pennsylvanian and Permian periods this area was covered by shallow seas. These seas would grow and shrink over time resulting in the deposition of differing sediment layers of hard and soft materials. Uplift and erosion have now exposed these strata resulting in the distinctive surface topography.

The soils of Kansas are very diverse, with over 300 different soil types across 52 million-acres. In general, the soils of east-central Kansas are deep, glacial drift soils. The following map shows the predominant soils types identified in east-central Kansas.

East-Central Kansas Geological Survey Map

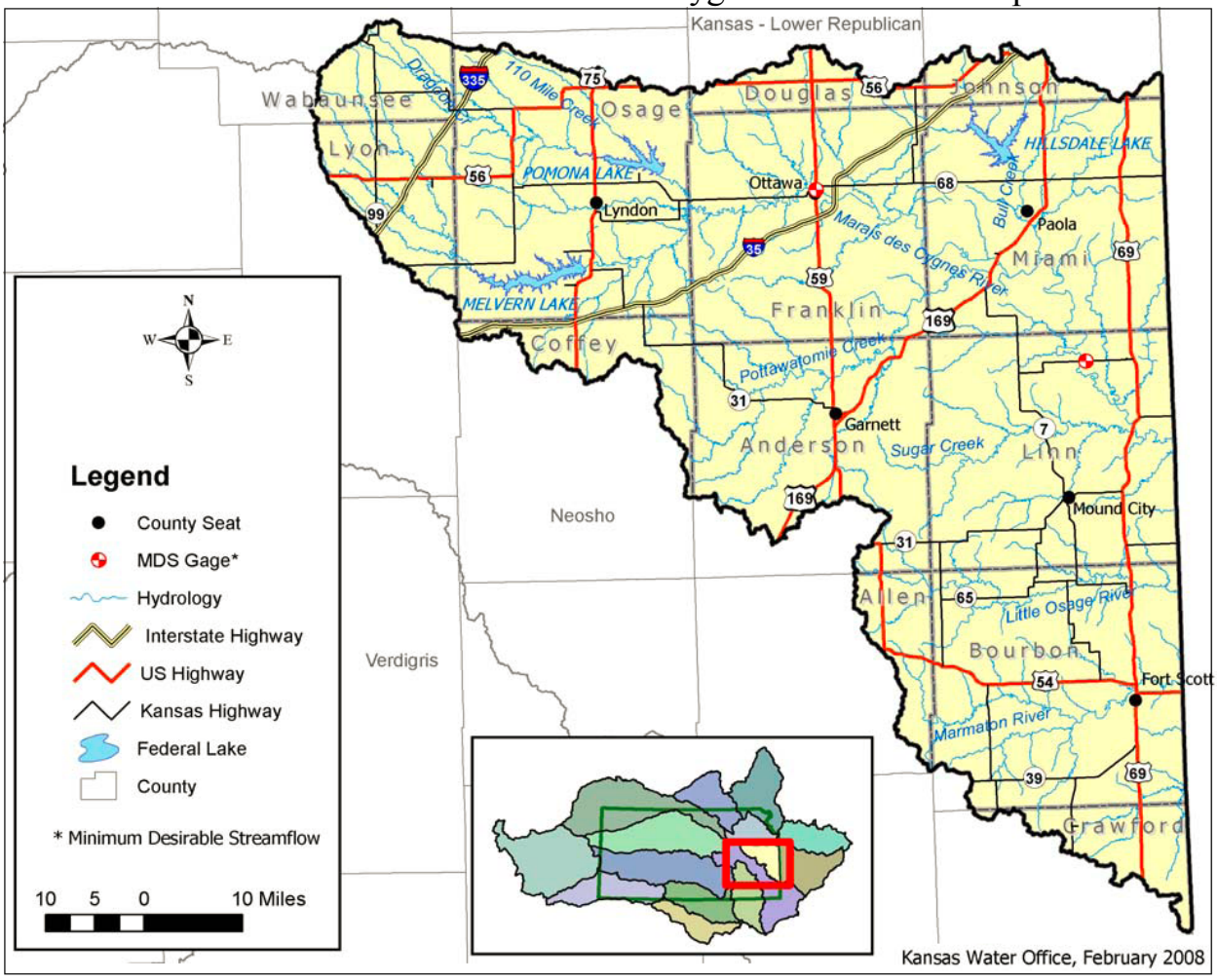


Kansas soils are known around the world for their exceptional qualities. But even though Kansas has abundant and productive soils, erosion by wind and water continue to diminish this resource. According to the United States Department of Agriculture (USDA) Natural Resources

Conservation Service about 190 million tons of topsoil are degraded each year through human activities. Unfortunately, soils are not easily renewed and it takes about 500 years for an inch of topsoil to develop under prairie grasses.

Three river basins cover east-central Kansas, the Marais des Cygnes, Neosho and the Kansas-Lower Republican Basins. Brief descriptions of each of these basins are presented below.

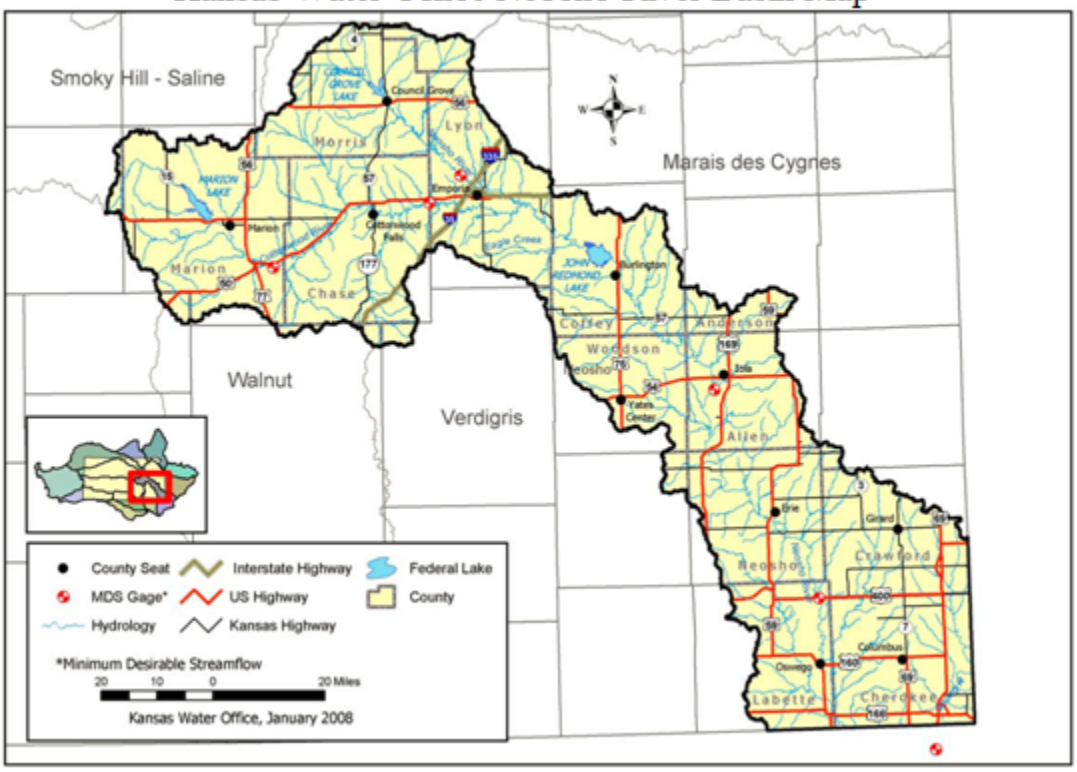
Kansas Water Office Marais des Cygnes River Basin Map



The **Marais des Cygnes River** (basin) rises in Wabaunsee County and flows east and south to join the Little Osage River in Bates County, Missouri. According to the Kansas Water Office (KWO), the basin covers 4,304 square miles of east-central and southeast Kansas and covers a majority of the planning region. Dragoon Creek, Bull Creek, Pottawatomie Creek and Sugar Creek are major tributaries in Kansas. The Marmaton and Little Osage Rivers originate in Kansas and exit the state in Cherokee County on the eastern border with Missouri. The two rivers then join in Missouri just above their confluence with the Marais des Cygnes to become the Osage River. Major federal reservoirs in the basin are Melvern, Pomona and Hillsdale. Other significant lakes include the La Cygne Power Station Lake and impoundments within the Marais

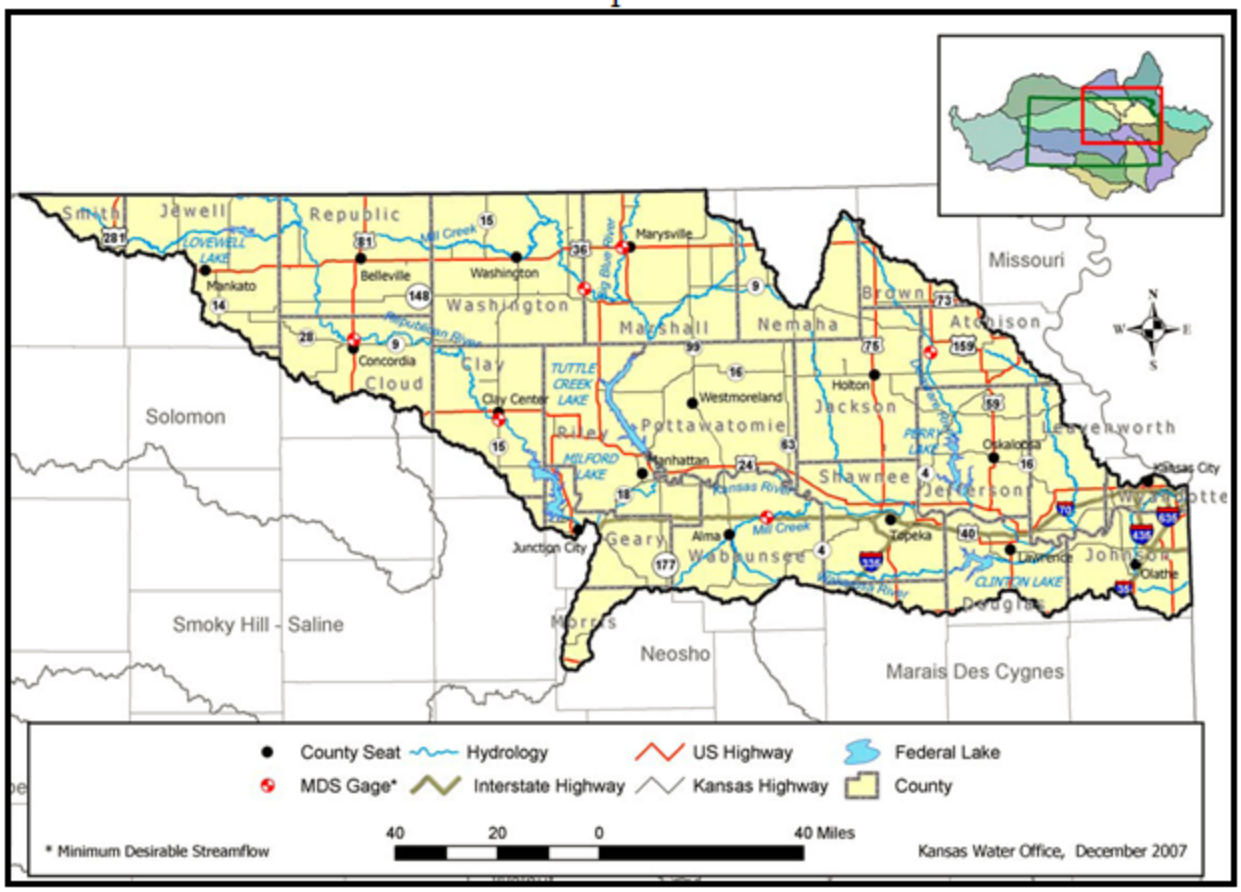
des Cygnes Wildlife Management Area and Refuge. There were an estimated 125,000 residents in the basin in the year 2000 (KWO estimate). The 13 counties either partly or wholly located within the basin had a combined population of 761,561 in 2000 (U.S. Census) and projected population of 1,076,146 in 2040.

Kansas Water Office Neosho River Basin Map



According the to the KWO, the **Neosho River Basin** covers approximately 6,300 square miles and encompasses parts Anderson and Coffey Counties. The major rivers draining the basin are the Neosho River, Cottonwood River and Spring River. The Neosho River forms in Morris County and flows to the southeast and exits Kansas just south of Chetopa (Labette County) in Cherokee County. It then joins the Arkansas River near Muskogee, Oklahoma. The Cottonwood River rises in Marion County and joins the Neosho River in Lyon County. The Spring River originates in Missouri and drains about 500 square miles of Cherokee County in Kansas. It enters Cherokee County in the east, flows across the southeastern corner and exits the state south of Baxter Springs. It then joins the Neosho River in Oklahoma just over the state line. There are three major federal reservoirs in the river system: Marion Reservoir is on the Cottonwood River and Council Grove and John Redmond Reservoirs are on the main stem of the Neosho River.
There were an estimated 174,000 residents in the basin in the year 2000. The population of 13 of the counties that have significant land area in the basin was 204,349 in 2000 and is projected to decline to 189,127 by the year 2040. No counties in the basin are expected to gain population during this time but the more rural counties are projected to lose proportionally more population than the counties having regional urban centers.

Kansas-Lower Republican River Basin



According the to the KWO, the **Kansas-Lower Republican River Basin** covers nearly 10,500 square miles and includes portions drained by the Republican River downstream of Harlan County Dam in Nebraska and the Kansas River which originates at the junction of the Republican and Smoky Hill rivers. Major rivers and streams within the basin are: the Upper Kansas, including Vermillion, Mill and Soldier Creeks; Lower Republican; Blue, including the Little Blue River; Delaware; and Lower Kansas, including the Wakarusa River and Stranger Creek. Major reservoirs in the basin are Lovewell, Milford, Tuttle Creek, Perry and Clinton. The basin has the largest population of all the twelve major river basins, estimated 1,025,644 residents in the year 2000. This population is projected to grow to nearly 1,583,584 in the year 2040. However, regional county population trends indicate that rural counties are shrinking while urban counties are growing. There are 65 soil associations occurring in the basin. In general, the more coarsely textured soils occur in the floodplains of the larger rivers. Finer soils are found in the uplands, particularly in the Glaciated Region and Flint Hills uplands physiographic regions.

2.5 REGIONAL CLIMATE

The Midwest climate region is known for extremes in both temperature and precipitation. In particular, Kansas lacks any mountain ranges that could act as a barrier to cold air masses from the north or hot, humid air masses from the south or any oceans or large bodies of water that

could provide a moderating effect on the climate. The polar jet stream is often located over the region during the winter, bringing frequent storms and precipitation. In the summer the jet stream migrates north, resulting in the collision of air masses with differing temperatures and moisture levels. The result if this is often severe thunderstorms, high winds and tornados, with peak severe weather season from May to June.

Kansas summers are generally warm and humid due to the clockwise air rotation caused by Atlantic high pressure systems bringing warm humid air up from the Gulf of Mexico. In general, summer also tends to have the most rain. Historically, precipitation has been reasonably predicable and adequate, however the region is noted for severe droughts such as is occurring now. Winter months can bring severe weather in the form of snow and ice storms. All seasons are noted for damaging high winds.

Data from the following High Plains Regional Climate Center weather stations from the first available date (in parenthesis) to 2012 was obtained to create a regional average:

- Garnett, Anderson County (1906)
- Burlington, Coffey County (1894)
- Ottawa, Franklin County (1895)
- Mound City, Linn County (1949)
- Paola, Miami County (1895)
- Osage City, Osage County (1896)
- Topeka, Shawnee County (1948)

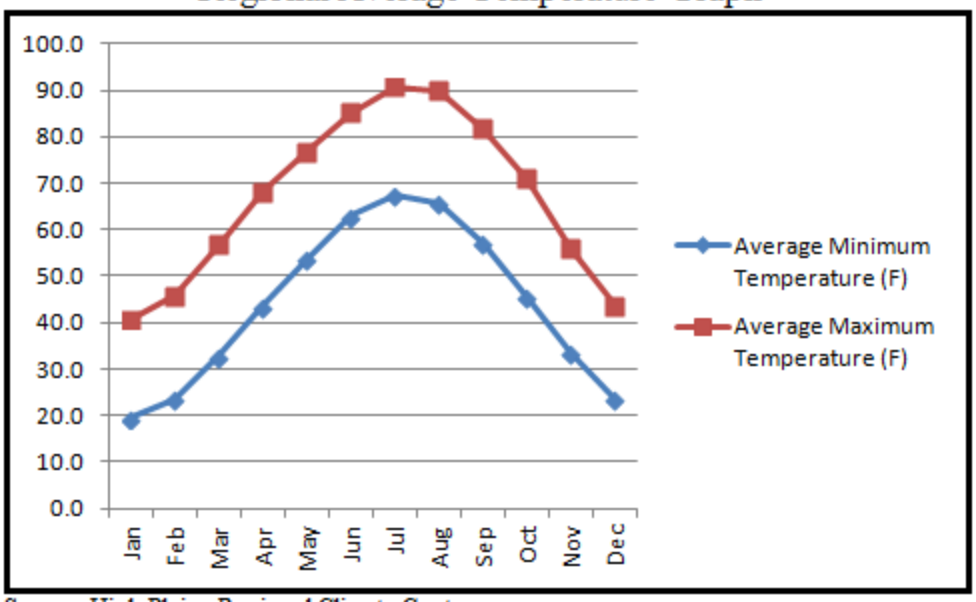
The following tables and charts present average climate data for east-central Kansas.

Regional Average Temperatures

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Minimum Temperature (F)	19.6	23.6	32.9	43.7	53.7	63.0	67.4	65.7	57.1	45.6	33.4	23.6	44.1
Average Maximum Temperature (F)	40.5	45.9	56.8	68.1	76.7	85.2	90.7	89.9	81.8	71.0	56.0	43.6	67.2

Source: High Plains Regional Climate Center

Regional Average Temperature Graph



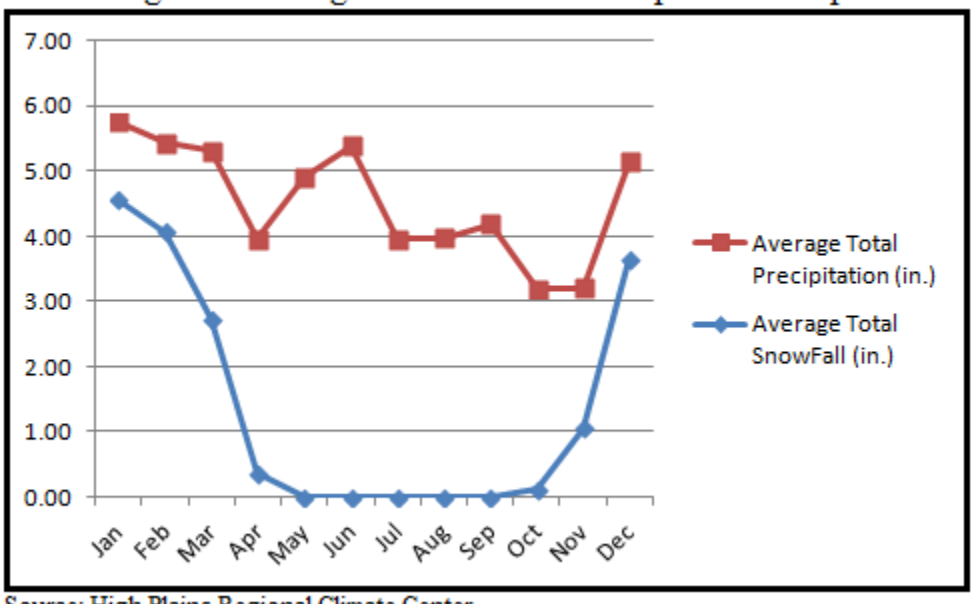
Source: High Plains Regional Climate Center

Regional Average Snowfall and Precipitation

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Total Snowfall (in.)	4.56	4.07	2.74	0.37	0.00	0.00	0.00	0.00	0.00	0.11	1.06	3.66	16.57
Average Total Precipitation (in.)	1.20	1.36	2.57	3.60	4.92	5.39	3.95	3.98	4.19	3.08	2.15	1.48	37.87

Source: High Plains Regional Climate Center

Regional Average Snowfall and Precipitation Graph



Source: High Plains Regional Climate Center

When discussing weather patterns climate change should be taken into account as it may markedly change future weather related events. There is a scientific consensus that climate change is occurring, and recent climate modeling results indicate that extreme weather events may become more common. Rising average temperatures produce a more variable climate system which may result in an increase in the frequency and severity of some extreme weather events including longer and hotter heat waves (and by correlation, an increased risk of wildfires), higher wind speeds, greater rainfall intensity, and increased tornado activity. As climate modeling improves, future plan updates should include climate change as a factor in the ranking of natural hazards as these are expected to have a significant impact on east-central Kansas communities.

2.6 REGIONAL POPULATION AND DEMOGRAPHICS

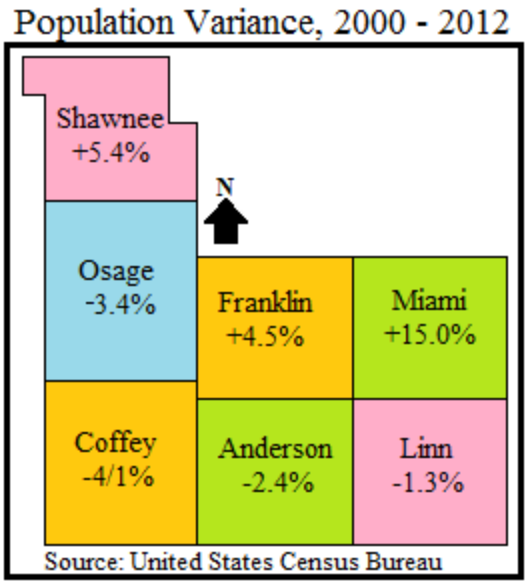
In general, east-central Kansas is a rural area with a few larger metropolitan areas. According to the United States Census Bureau, the estimated regional population for 2012 is 279,511 persons. This represents a 4.98% regional increase from the 2000 census.

The region accounts for approximately 9.7% of the State of Kansas' 2012 estimated population. Additionally, the region occupies approximately 4,271 square miles (representing 5.2% of the total land area of the state, at 81,759 square miles). The 2012 regional population density is calculated at 65 people per square mile. It should be noted that the high population density of Shawnee County (322 people per square mile) skews the regional average. Excluding Shawnee County, the regional average population density is 27 people per square mile.

Regional Population Data

County	Population (2000)	Population (2012 Estimate)	Percentage Change (2000-2012)	Population (2040 Projection)
Anderson	8,110	7,917	-2.4%	7,247
Coffey	8,865	8,502	-4.1%	7,392
Franklin	24,784	25,906	+4.5%	28,438
Linn	9,570	9,441	-1.3%	7,966
Miami	28,351	32,612	+15.0%	41,381
Osage	16,712	16,142	-3.4%	14,462
Shawnee	169,871	178,991	+5.4%	190,626
Kansas	2,688,418	2,885,905	+7.4%	3,238,356

Source: United States Census Bureau



The following table indicates the levels of education for citizens of the region.

Regional Educational Data

County	High school graduate or higher, age 25+ (2008-2012)	Bachelor's degree or higher, age 25+ (2008-2012)
Anderson	88.40%	17.60%
Coffey	92.20%	19.80%
Franklin	91.30%	19.60%
Linn	88.80%	15.60%
Miami	93.30%	23.80%
Osage	90.00%	20.10%
Shawnee	90.50%	28.60%
Kansas	89.50%	29.70%

Source: United States Census Bureau

The following information provides a snapshot of regional housing trends. In general, the region enjoys a high percentage of home ownership. Additionally, available data indicates a small proportion of available housing units are in the form of multi-unit spaces.

Regional Housing Data

County	Housing Units (2000)	Housing Units (2012)	Multi Unit Percentage (2008-2012)	Homeownership Rate (2008-2012)	Households (2008-2012)	Persons per Household (2008-2012)	Issued Building Permits, All Categories (2012)
Anderson	3,596	3,709	5.50%	79.80%	3,280	2.4	10
Coffey	3,876	3,990	6.50%	76.90%	3,494	2.4	24
Franklin	10,229	11,126	11.30%	70.70%	10,108	2.5	25
Linn	4,720	5,445	3.60%	82.30%	4,246	2.2	20
Miami	10,984	13,225	9.60%	80.90%	12,154	2.6	57
Osage	7,018	7,504	6.30%	79.10%	6,557	2.5	16
Shawnee	73,768	79,287	21.30%	65.10%	73,213	2.4	232
Kansas	1,131,200	1,238,719	17.60%	68.20%	1,109,391	2.5	6,252

Source: United States Census Bureau

2.7 REGIONAL ECONOMY

Data from the University of Kansas Institute for Policy and Social Research Kansas County Profile reports indicate that in general, the number of business establishments in east-central region are decreasing on a yearly basis. From 2000 to 2010 the average rate of decrease for the region was -3.5%. Major sources of employment include construction, manufacturing, retail, transportation, health care, and utilities. The average regional unemployment rate of 8.14% in 2011 was higher than the average State of Kansas unemployment rate of 6.5%.

Regional Business and Unemployment Data

County	Total Number of Business (2000)	Total Number of Business (2010)	01 - 19 Staff (2010)	20 - 99 Staff (2010)	100+ Staff (2010)	Average Wage (2010)	Unemployment Rate (2011)
Anderson	237	218	202	15	1	$27,608	8.00%
Coffey	261	240	224	14	2	$43,662	6.70%
Franklin	583	566	498	54	14	$33,414	8.50%
Linn	193	179	171	7	1	$38,719	10.70%
Miami	618	718	660	51	7	$33,134	7.60%
Osage	349	270	253	14	3	$24,741	8.50%
Shawnee	4,600	4,413	3,720	580	113	$40,741	7.00%
Regional Total	6,841	6,604	5,728	735	141	$34,574	8.14%

Source: University of Kansas Institute for Policy and Social Research Kansas County Profile

2.8 REGIONAL AGRICULTURE AND LIVESTOCK

Agriculture is a major component of the economy of east-central Kansas. According to the Kansas Department of Agriculture:

- Kansas farmers typically produce more wheat than any other state in the nation
- In 2009, Kansas wheat accounted for more than 16 percent of all wheat produced

- Kansas ranks first in grain sorghum produced
- Kansas ranks second in cropland
- Kansas ranks sixth in hay produced
- One in five Kansans work in jobs related to agriculture and food production

The following table presents information from the USDA National Agricultural Statistics Service relating to farm totals and agricultural acreage for east-central Kansas.

Regional Farm Data, 2002 to 2007

County	Number of Farms, 2002	Number of Farms, 2007	Percent Change	Farm Acreage, 2002	Farm Acreage, 2007	Percentage Change
Anderson	654	715	9.00%	378,786	367,192	-3.00%
Coffey	607	681	12.00%	335835	324,827	-3.00%
Franklin	977	1,051	8.00%	338,901	313,546	-7.00%
Linn	903	918	2.00%	310,836	265,319	-15.00%
Miami	1,424	1,538	8.00%	320,186	307,083	-4.00%
Osage	925	1,092	18.00%	367,260	380,156	4.00%
Shawnee	903	885	-2.00%	216,812	206,243	-5.00%
Regional	6,393	6,880	6%	2,268,616	2,164,366	-4%

Source: United States Department of Agriculture National Agricultural Statistics Service

Regional Cropland and Pastureland Information

County	Percentage Cropland	Cropland Acreage	Percentage Pastureland	Pasture Acres
Anderson	58.5%	214,807	32.3%	118,603
Coffey	51.9%	168,585	40.1%	130,256
Franklin	53.5%	167,747	33.5%	105,038
Linn	50.4%	133,721	31.4%	83,310
Miami	50.5%	155,077	35.9%	110,243
Osage	53.6%	203,764	35.6%	135,336
Shawnee	60.7%	125,190	29.9%	61,667
Regional	54.2%	1,168,890	34.1%	744,452

Source: United States Department of Agriculture National Agricultural Statistics Service

Major production crops include corn, forage, soybeans, wheat, and sorghum. Information was obtained from the USDA National Agricultural Statistics Service for 2007, the latest year for which this data was available on a county basis.

Top Crop Items, 2007

County	Wheat	Sorghum	Soybeans	Forage	Corn
Anderson	37,954	5,292	69,383	44,492	40,350
Coffey	25,801	6,805	54,720	41,435	22845
Franklin	21,098	4,546	53,685	41,017	21,933
Linn	14,957	3,299	36,233	35,958	8,281
Miami	11,574	2,856	41,969	54,025	20,693
Osage	23,179	9,106	61,974	51,173	32,132
Shawnee	9,681	3,476	37,426	28,003	36,332
Regional	144,244	35,380	355,390	296,103	182,566

Source: United States Department of Agriculture National Agricultural Statistics Service

Additionally, the rearing of livestock play a major role in the regional economy. According to the Kansas Department of Agriculture (KDA):

- Kansas produces more than 19 percent of all U.S. beef
- Kansas ranks third in cattle and calves on farms and third in cattle and calves on grain feed
- Kansas ranks 16th in milk produced

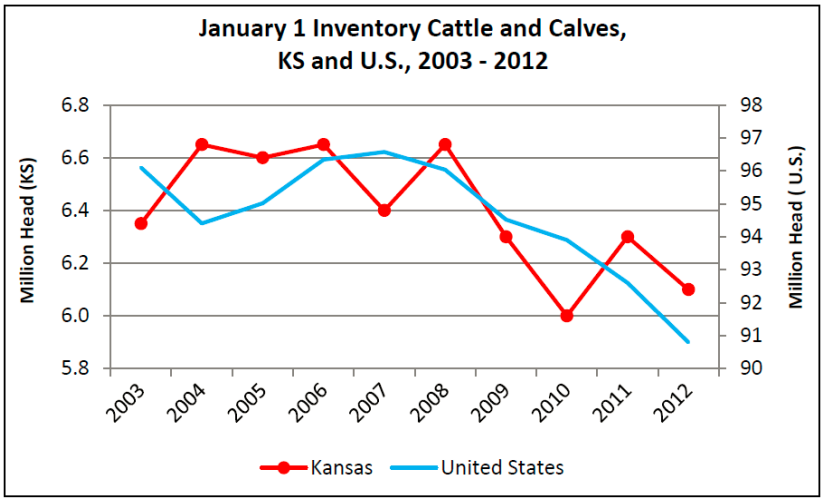
The following table presents information relating to livestock production in east-central Kansas, with data obtained from the USDA National Agricultural Statistics Service.

Top Livestock Inventory Items, 2007

County	Cattle and Calves	Hogs and Pigs	Horses and Ponies	Sheep and Lambs
Anderson	47,714	3,806	-	-
Coffey	46,132	-	1,363	1,448
Franklin	41,293	22,662	1,882	-
Linn	34,826	2,060	-	-
Miami	43,635	1,657	3,416	-
Osage	36,693	1,363	1,599	-
Shawnee	13,692	-	1,601	-
Regional	263,985	31,548	9,861	1,448

Source: United States Department of Agriculture National Agricultural Statistics Service

Regional data indicate that the number of cattle has been falling over the past five years, following a trend in the State of Kansas and the United States as a whole. The following chart from the USDA National Agricultural Statistics Service Kansas Field Office produced in 2012 indicates this trend.



Source: US Department of Agriculture National Agricultural Statistics Service, Kansas Field Office, 2012

Regional data indicate that the number market value of agricultural products sold has increased dramatically over the past five years, following a trend in the State of Kansas. The following data from the USDA National Agricultural Statistics Service Kansas Field Office produced in 2012 indicates this trend.

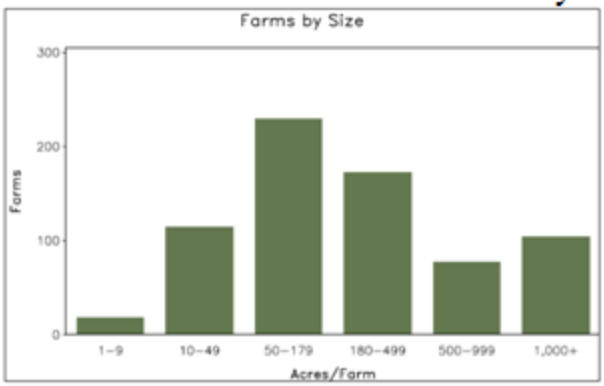
Market Value of Agricultural Products Sold

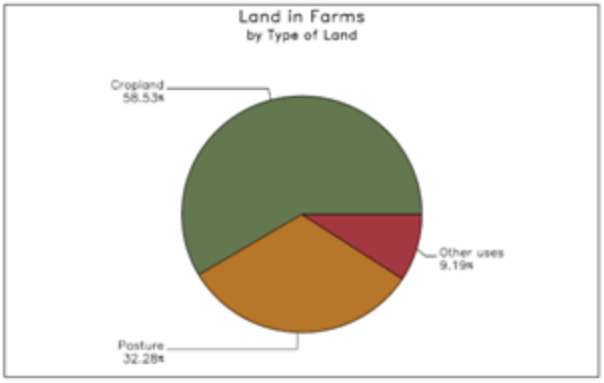
County	Market Value of Products Sold (2002)	Market Value of Products Sold (2007)	Percentage Change
Anderson	$44,370,000	$61,105,000	38.00%
Coffey	$38,359,000	$48,494,000	26.00%
Franklin	$40,557,000	$67,209,000	66.00%
Linn	$23,063,000	$32,009,000	39.00%
Miami	$44,092,000	$62,672,000	42.00%
Osage	$32,827,000	$44,449,000	48.00%
Shawnee	$21,975,000	$39,673,000	81.00%
Regional	$245,243,000	$355,611,000	37.78%

Source: USDA National Agricultural Statistics Service

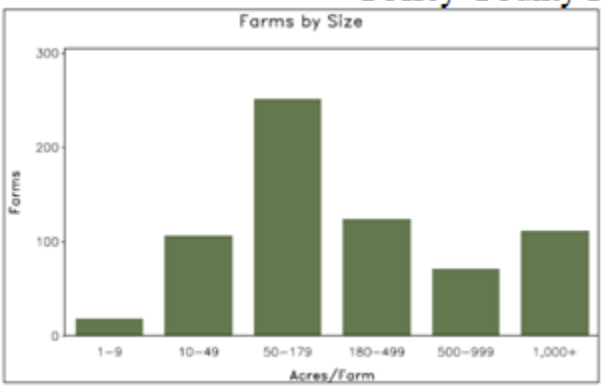
The following charts present an overview of agricultural production for each county in the region. Information comes from the USDA National Agricultural Statistics Service 2007 Crop Year County Farm Facts booklet.

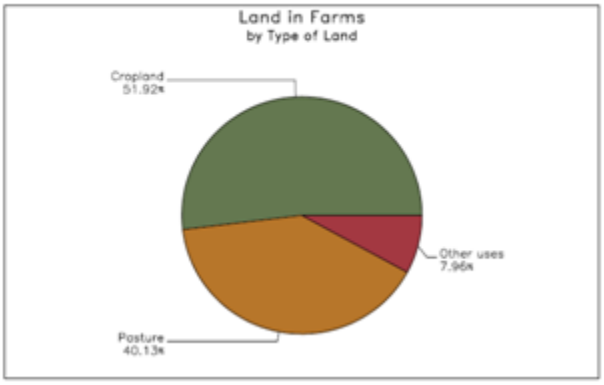
Anderson County Farm Information, 2007



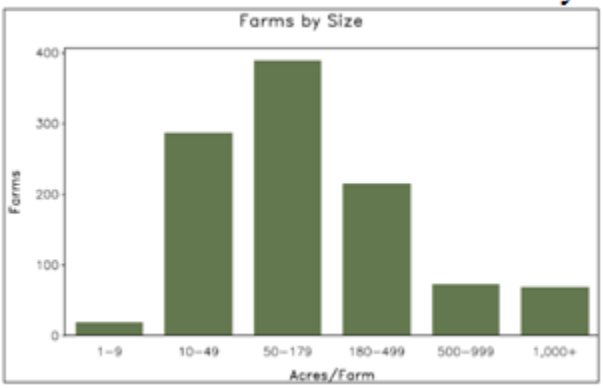


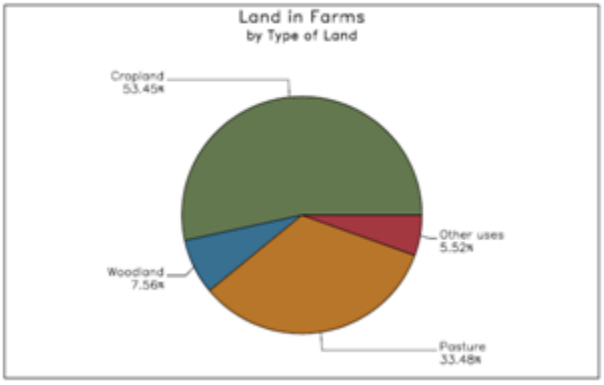
Coffey County Farm Information, 2007



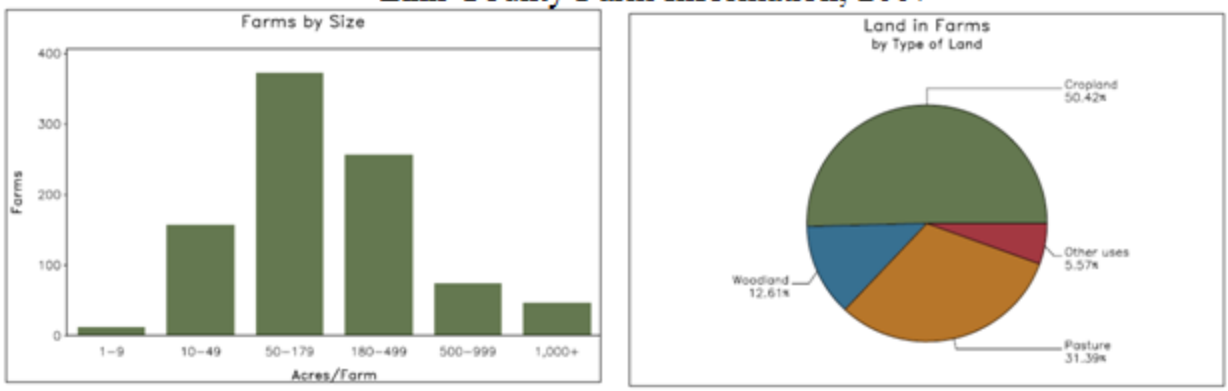


Franklin County Farm Information, 2007

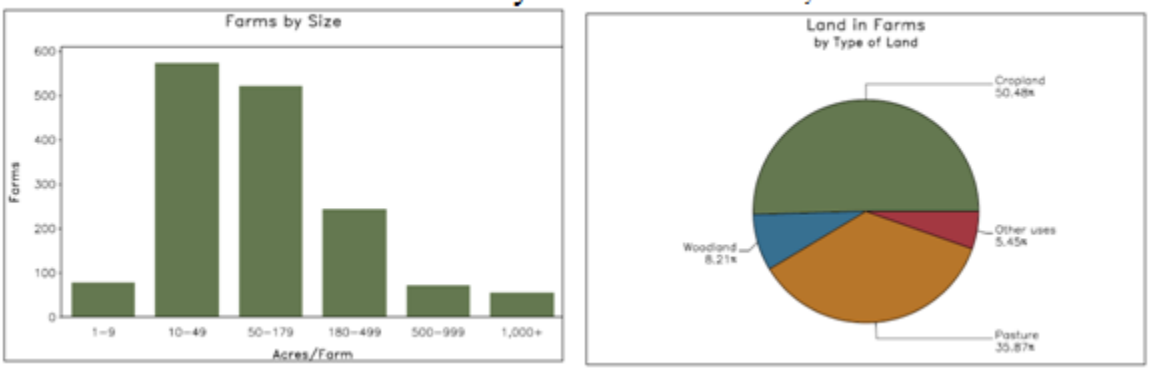




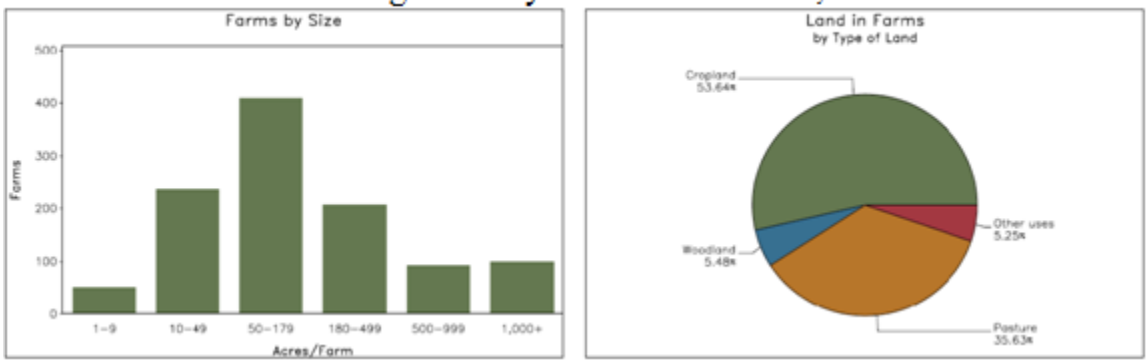
Linn County Farm Information, 2007



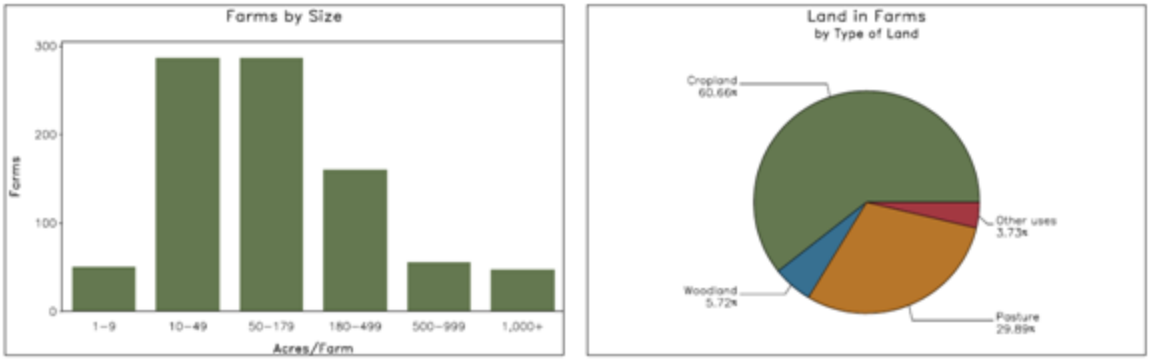
Miami County Farm Information, 2007



Osage County Farm Information, 2007



Shawnee County Farm Information, 2007

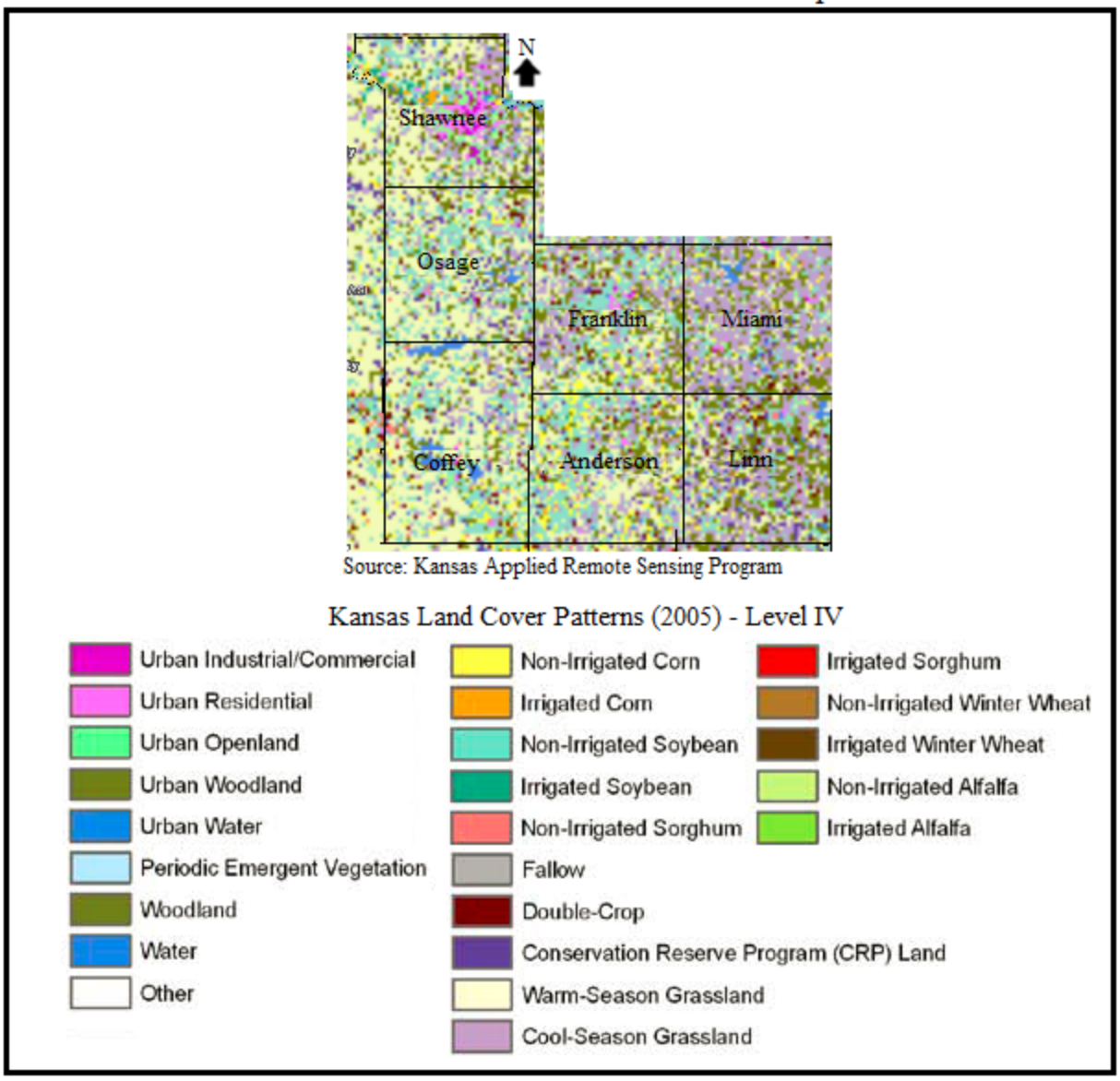


2.9 REGIONAL LAND USE AND DEVELOPMENT TRENDS

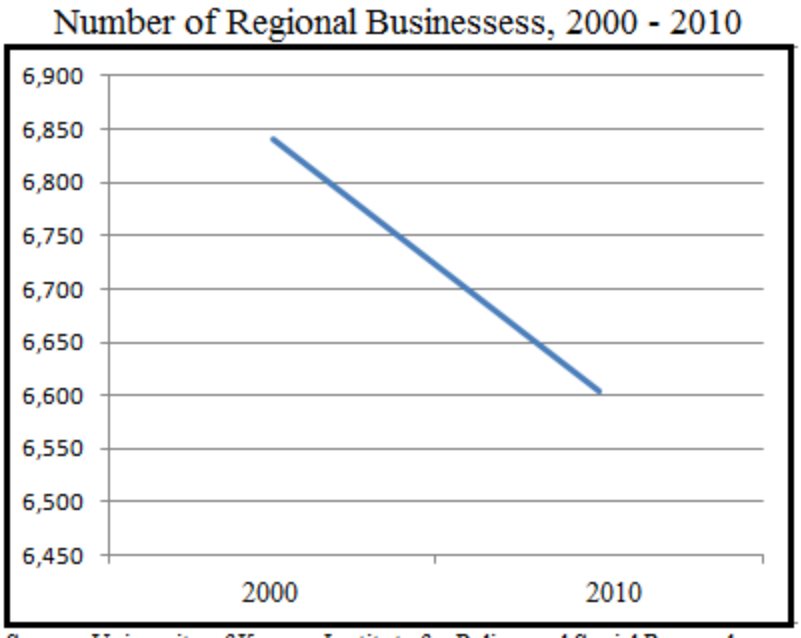
44 CFR 201.6 (C) Plan Content. The plan shall include the following: (2)(ii)(C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Land use patterns in east-central Kansas have remained relatively stable over many years. The 2005 Kansas Applied Remote Sensing Kansas Land Cover Patterns map shows the majority of the region is covered by cropland and grassland. Urban, residential, commercial and industrial uses comprise a small percentage of the land cover and are primarily found around the major towns and cities. In general, most development is regulated by local entities. However, it should be noted that large sections of the region are unregulated as to building and development.

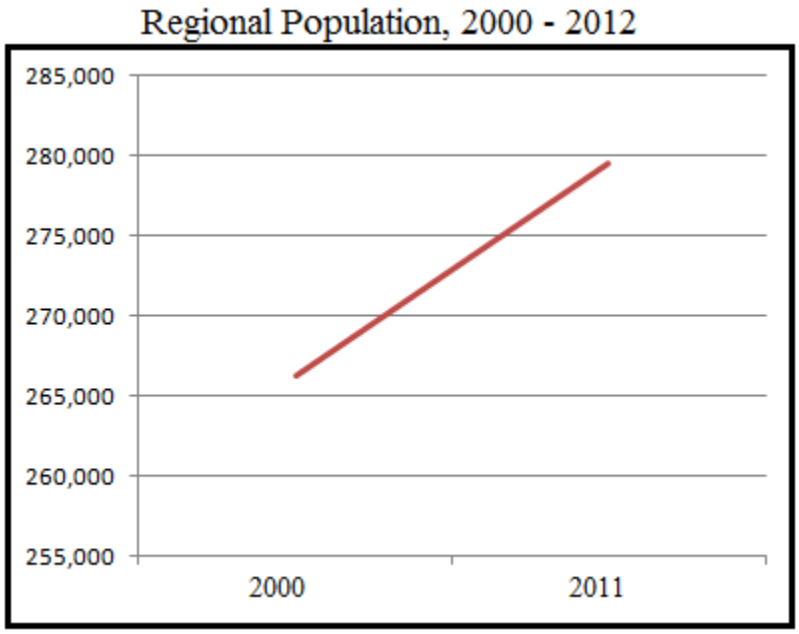
East-Central Kansas Land Cover Map



East-central Kansas has experienced an overall increase in population, with a 4.98% regional increase from the 2000 to estimated 2012 census. In addition, the region has seen the number of businesses decline from 2000 to 2010 at around 6,604. While forecasting future population movement and growth is challenging, past trends can be used to assist in predicting future development. The following graphs indicate total number of business in the region and regional population using data from the above referenced tables.



Source: University of Kansas Institute for Policy and Social Research
Kansas County Profile



Source: United States Census

Based on these historical rates, it is possible that that minor land use changes and minor land development initiatives will be completed to accommodate the increasing population in the region. It is worth noting that Miami County is currently experiencing greater than average population growth (15% versus the state average of 7.4%), which will likely lead to greater urbanization.

Data was obtained from the Office of Local Government, Kansas State Research and Extension office concerning capital expenditures on infrastructure. The data indicates that there is no regional trend in infrastructure spending. However, where the capital expenditures have increased the data and general observations indicate that the increase is being spent on maintenance rather than new construction.

Regional Capital Infrastructure Expenditures, 2001 to 2011

County	Road & Bridge Expenditure (2001)	Road & Bridge Expenditure (2011)	Percent Change
Anderson	$2,278,207	$3,101,351	36%
Coffey	$4,961,606	$6,496,551	31%
Franklin	$4,338,836	$4,119,843	-5%
Linn	$2,340,347	$2,795,617	19%
Miami	$6,839,597	$6,171,807	-10%
Osage	$2,129,820	$2,807,884	32%
Shawnee	$7,420,407	$4,266,333	-43%

Source: Office of Local Government, Kansas State Research and Extension

2.10 STRUCTURES EXPOSED TO POTENTIAL HAZARDS

This section quantifies the buildings exposed to potential hazards in east-central Kansas. The following tables provide the value of the region's built environment and contents, which in addition to the population information presented above, forms the basis of the vulnerability and risk assessment presented in this plan. This information was derived from inventory data associated with FEMA's loss estimation software HAZUS-MH 2.1 (February 2012). HAZUS-MH 2.1 classifies building stock types into seven categories: residential, commercial, industrial, agriculture, religion, government, and education. Values associated with each of these categories reflect 2006 valuations, published by R.S. Means Company (Means Square foot Costs", 2006) with replacement costs. According to the HAZUS-MH 2.1 inventory, the total estimated replacement value of buildings within the east-central Kansas region is $18,358,101,000 and the total buildings content's estimated value within the east-central Kansas region is $12,019,293,000. The exposure value of buildings is incorporated as a factor in vulnerability assessments for hailstorm, tornado, windstorm, and winter storm hazards that are profiled later in this plan.

Estimated Replacement Value of Buildings by Category (2006 Valuations)

County	Residential ($1,000s)	Commercial ($1,000s)	Industrial ($1,000s)	Agriculture ($1,000s)	Religion ($1,000s)	Government ($1,000s)	Education ($1,000s)
Anderson	$374,936	$80,463	$26,248	$13,788	$8,577	$5,810	$8,579
Coffey	$467,667	$100,314	$17,202	$17,164	$12,467	$7,897	$48,242
Franklin	$1,187,525	$225,030	$91,924	$20,991	$37,711	$12,642	$22,181
Linn	$511,695	$86,859	$22,767	$9,621	$12,173	$7,807	$8,204
Miami	$1,638,010	$251,249	$90,307	$22,057	$41,539	$8,617	$54,487
Osage	$783,384	$110,509	$12,490	$17,345	$25,749	$9,628	$18,005
Shawnee	$8,607,175	$2,087,339	$408,573	$39,816	$281,705	$235,600	$168,033
Regional Total	$13,570,392	$2,941,763	$669,511	$140,782	$419,921	$288,001	$327,731

Estimated Replacement Value of Building's Contents by Category (2006 Valuations)

County	Residential ($1,000s)	Commercial ($1,000s)	Industrial ($1,000s)	Agriculture ($1,000s)	Religion ($1,000s)	Government ($1,000s)	Education ($1,000s)
Anderson	$187,967	$87,455	$37,016	$13,788	$8,577	$6,561	$8,579
Coffey	$234,811	$105,379	$23,446	$17,164	$12,467	$8,484	$48,242
Franklin	$594,591	$235,059	$127,047	$20,991	$37,711	$14,819	$24,559
Linn	$256,791	$87,877	$30,312	$9,621	$12,173	$9,885	$8,204
Miami	$819,770	$265,233	$116,486	$22,057	$41,539	$10,309	$54,570
Osage	$392,611	$111,968	$15,414	$17,345	$25,749	$10,770	$18,559
Shawnee	$4,306,889	$2,237,525	$546,253	$39,816	$281,705	$240,146	$175,003
Regional Total	$6,793,430	$3,130,496	$895,974	$140,782	$419,921	$300,974	$337,716

2.11 REGIONAL CRITICAL FACILITIES

This section details the critical facilities and assets that may be at risk by county and available jurisdiction for the region. A critical facility is essential in providing utility or direction either during the response to an emergency or during the recovery operation. Facilities were determined from jurisdictional feedback, historic research, available data from the State of Kansas and HAZUS-MH 2.1. Critical assets are equipment or systems that may be needed during a response or recovery effort and may be at risk of damage or destruction from a hazard. In addition, jurisdictions considered facilities that, if damaged or destroyed, would result in a high economic, human, or societal losses. Finally, jurisdictions also considered transportation facilities and corridors that would provide critical lifelines in the event of a hazard event. The following are examples of critical facilities and assets:

- Hospitals and other medical facilities
- Police stations

- Fire stations
- Emergency operations centers
- Power plants
- Dams and levees
- Military installations
- Hazardous material sites
- Schools
- Shelters
- Day care centers
- Nursing homes
- Highways, bridges, and tunnels
- Railroads and facilities
- Airports
- Water treatment facilities
- Natural gas and oil facilities and pipelines
- Communications facilities
- Community facilities

Participating jurisdictions were given the option to supply as much information as possible relating to critical facilities, however they were not compelled to provide any information, up to and including name, address, replacement value and occupancy. A detailed list of critical facilities may be found in Appendix D. Appendix D has been deemed sensitive information, and as such is restricted and unavailable to the public.

2.12 HISTORICALLY SIGNIFICANT STRUCTURES AND LOCATIONS

The following sections detail structures that have local historical significance. Historic structure means any structure that is:

- Listed in the National Register of Historic Places or preliminarily determined as meeting the requirements for listing
- Certified as contributing to the historical significance of a registered historic district
- Listed on a state inventory of historic places
- Listed on a local inventory of historic places
- Deemed by the community as a locally historic structure

These structures may warrant a greater degree of protection due to their unique and irreplaceable nature. Additionally, the rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.

2.12.1 ANDERSON COUNTY

Name of Historic Property	Address or Location	City
Anderson County Courthouse	4th and Oak Sts.	Garnett
Kirk, Sennett and Bertha, House	145 W. Fourth Ave.	Garnett
Shelley-Tipton House	812 W. 4th St.	Garnett
Spencer's Crossing Bridge	Over Pottawatomie Creek, NW of Greeley	Greeley
Tipton, Samuel J., House	4 mi. SW of Harris	Harris

2.12.2 COFFEY COUNTY

Name of Historic Property	Address or Location	City
Burlington Carnegie Free Library	201 N. Third	Burlington
Plaza Theater	404 Neosho St.	Burlington
US Post Office--Burlington	107 S. Fourth St.	Burlington
Neosho River Bridge	E of Hartford	Hartford
Williamson Archeological Site	Address Restricted	Hartford
Miller, Cleo F., House	Jct. of Broadway and Coffey Sts.	Lebo

2.12.3 FRANKLIN COUNTY

Name of Historic Property	Address or Location	City
Hanway, Judge James, House	658 Virginia Rd.	Lane
Dietrich Cabin	Ottawa City Park	Ottawa
Downtown Ottawa Historic District	E side of S. Main St. from No. 135 to 3rd St.	Ottawa
Eight Mile Creek Warren Truss Bridge	Osborne Terrace, 0.2 mi. W of int. with Eisenhower Terrace, 1.0 W of Main St.	Ottawa
Franklin County Courthouse	Main St.	Ottawa
Historic Ottawa Central Business District	Roughly bounded by Marias des Cygnes R., S 5th St., Walnut St. and Hickory St.	Ottawa
Jones, Tauy, House	3 mi. NE of Ottawa on Tauy Creek	Ottawa
Old Santa Fe Railroad Depot	135 W. Tecumseh St.	Ottawa
Ottawa High School and Junior High School	526 and 506 S. Main St.	Ottawa
Ottawa Library	5th and Main Sts.	Ottawa
Ransom, James H., House	318 S. Locust St.	Ottawa
Tauy Creek Bridge	Over Tauy Cr. N of I-35	Ottawa
Tauy Jones Hall	Ottawa University campus, 10th and Cedar Sts.	Ottawa
Middle Creek Tributary Bridge	5.8 mi. W of Princeton	Princeton
Pleasant Valley School District #2	2905 Thomas Rd.	Wellsville
Walnut Creek Bridge	Off KS 33 1 mi. S of Wellsville	Wellsville
Wellsville Bank Building	418 Main St.	Wellsville
Silkville	2.5 mi. SW of Williamsburg on U.S. 50	Williamsburg

2.12.4 LINN COUNTY

Name of Historic Property	Address or Location	City
Landers Creek Bridge	S edge of Goodrich	Goodrich
Linn County Courthouse	4th and Main	Mound City
Mine Creek Bridge	E of Mound City	Mound City
Old Linn County Jail	312 Main St.	Mound City
Battle of Mine Creek Site	2.5 mi. SW of Pleasanton off U.S. 69	Pleasanton
Prescott Rural High School	202 West 4th St	Prescott
Prescott School	3rd and Main Sts.	Prescott
Marais des Cygnes Massacre Site	5 mi. NE of Trading Post	Trading Post

2.12.5 MIAMI COUNTY

Name of Historic Property	Address or Location	City
Jake's Branch of Middle Creek Bridge	Off US 69	Louisburg
Asylum Bridge	First St. over Marais des Cygnes	Osawatomie
Brown, John, Cabin	John Brown Memorial Park	Osawatomie
Carey's Ford Bridge	Over Marais des Cygnes River, E of Osawatomie	Osawatomie
Congregational Church	315 6th St.	Osawatomie
Creamery Bridge	FAS 456	Osawatomie
Mills, William, House	212 First St.	Osawatomie
Pottawatomie Creek Bridge	FAS 1604	Osawatomie
Soldiers' Monument	NE corner of Main & 9th Sts.	Osawatomie
Hillsdale Archeological District	Address Restricted	Paola
Jackson Hotel	139 W. Peoria St.	Paola
Miami County Courthouse	E of jct. of Miami and Silver Sts.	Paola

2.12.6 OSAGE COUNTY

Name of Historic Property	Address or Location	City
Hunt, Samuel, Grave	KS 31 E of crossing of I-335 (Kansas Tpk.), Burlingame Township	Burlingame
Schuyler Grade School	117 S Dacotah	Burlingame
Karnes Stone Barn	4204 E. 129th St.	Carbondale
Arvonia School	S. 9th St.	Lebo
Calvinistic Methodist Church	8090 W. 9th St.	Lebo
Lyndon Carnegie Library	127 E. Sixth	Lyndon
Osage County Courthouse	717 Topeka Ave.	Lyndon
Atchison, Topeka, and Santa Fe Pratt Truss Bridge	SE Pine St., 0.1 mi. S of int. with E. Emporia St.	Melvern

Name of Historic Property	Address or Location	City
Cow-Killer Archeological Site	Address Restricted	Melvern
Osage City Santa Fe Depot	508 Market	Osage City
Rapp School District No. 50	US 56 NW of Osage City	Osage City
Banner Hereford Farm	19355 S. Berryton Rd.	Scranton

2.12.7 SHAWNEE COUNTY

Name of Historic Property	Address or Location	City
McCauley Bridge	0.5 mi. S of Auburn	Auburn
Thomas Arch Bridge	Jct. of Wanamaker Rd. and 105th St., across the Wakarusa R.	Auburn
Lyons, Horace G., House	4831 SE 61st St.	Berryton
Sage Inn	57th St. and Douglas Rd.	Dover
Hard Chief's Village	Address Restricted	Silver Lake
Hopkins House	6033 SE US Hwy. 40	Tecumseh
Albaugh, Morton, House	1331 SW Harrison St.	Topeka
Alt, Solomon A., House	1335 SW College Ave.	Topeka
Anton--Woodring House	1011 Cambridge Ave.	Topeka
ATSF Motive Power Building	1001 NE. Atchison	Topeka
Blacksmith Creek Bridge	W of Topeka	Topeka
Bowker House	1200 SE Quincy	Topeka
Brown v. Board of Education National Historic Site	424 S. Kansas Ave. Suite 220	Topeka
Cedar Crest	Cedar Crest Rd.	Topeka
Central Motor and Finance Corporation Building	222 W. 7th St.	Topeka
Central National Bank	701--703 Kansas Ave.	Topeka
Church of the Assumption and Rectory	204 SW 8th St	Topeka
Church of the Holy Name	1110 SW. 10th Ave.	Topeka
College Avenue Historic District	College Ave. bet. Huntoon St. and 17th St.	Topeka
Columbian Building	112--114 W. 6th St.	Topeka
Constitution Hall--Topeka	429 S. Kansas Ave.	Topeka
Crawford Building	501 Jackson St.	Topeka
Crosby, William T. and Delora, House	1109 SW. Topeka Blvd.	Topeka
Curtis Junior High School	316 NW Grant St.	Topeka
Curtis, Charles, House	1101 Topeka Ave.	Topeka
Davies Building	725--727 Kansas Ave.	Topeka
Devon Apartments	800-808 W. 12th St.	Topeka
Dillon House	404 W. Ninth St.	Topeka
East Topeka Junior High School	1210 E. 8th St.	Topeka

Name of Historic Property	Address or Location	City
England Farm	4619 SE 37th St.	Topeka
Fire Station No. 2--Topeka	719-723 Van Buren	Topeka
Gem Building	506-510 SW 10th Ave.	Topeka
Giles--Nellis House	915 SW. Munson	Topeka
Gordon Building	900, 902, 904 S Kansas Ave	Topeka
Grand Opera House	615 Jackson St.	Topeka
Harmon, John C., House	915 SW. Buchanan	Topeka
Hicks Block	600 W. 6th Ave.	Topeka
Holliday Park Historic District I	Roughly bounded by 10th Ave., Taylor, Polk, Huntoon , Clay and Fillmore Sts.	Topeka
Holliday Park Historic District II	1009, 1015, 1019,1021,1025, 1031, 1035 SW Fillmore St.	Topeka
Hughes Conoco Service Station	400 SW. Taylor St.	Topeka
Jayhawk Hotel, Theater and Walk	700 Jackson Ave.	Topeka
Kansas State Capitol	Bound by 8th and 10th Aves. and Jackson and Harrison Sts.	Topeka
Luttjohann, Fred and Cora, House	2053 S. Kansas Ave.	Topeka
Memorial Building	120 W. 10th Ave.	Topeka
Menninger Clinic Building	3535 W. 6th Ave.	Topeka
Morgan House	1335 SW Harrison St.	Topeka
North Topeka Baptist Church	123 NW Gordon	Topeka
Old German-American State Bank	435 Kansas Ave.	Topeka
Pottawatomie Baptist Mission Building	Off W. 6th St., 0.5 mi. W of Wanamaker Rd.	Topeka
Pottawatomie Baptist Mission Building and Site (Boundary Increase)	On Urish Rd., 0.3 mi. N of 10th St.	Topeka
Potwin Place Historic District	Roughly bounded by Elmwood, Grove, Broadmoor, and Willow Sts.	Topeka
Ross Row Houses	513, 515, 517, 517 1/2, 519, 521 Van Buren St.	Topeka
Sargent, John, House	225 SW. Clay St.	Topeka
Security Benefit Association Hospital Building	5800 SW 6th, 5 mi. NW on private road	Topeka
Shoemaker, J.A., House	1434 SW. Pass Ave.	Topeka
St. John African Methodist Episcopal Church	701 SW Topeka Blvd.	Topeka
St. John's Lutheran School	315 W. 4th St.	Topeka
St. Joseph's Catholic Church	235 Van Buren St.	Topeka
Sumner Elementary School and Monroe Elementary School	330 Western Ave. and 1515 Monroe St.	Topeka
Thacher Building	110 E. 8th St.	Topeka
Topeka Cemetery--Mausoleum Row	1601 E. 10th St.	Topeka

Name of Historic Property	Address or Location	City
Topeka Council of Colored Women's Clubs Building	1149 SW Lincoln	Topeka
Topeka High School	800 SW 10th Ave.	Topeka
Union Pacific Railroad Passenger Depot	701 N. Kansas Ave.	Topeka
Veale, Tinkham, Building	909-911 S. Kansas Ave.	Topeka
Ward-Meade House	124 N. Fillmore	Topeka
Washburn University Carnegie Library Building	Off Seventeenth St. and Washburn Ave.	Topeka
Wea Creek Bowstring Arch Truss Bridge	Grounds of the Kansas State Historical Society, 6425 SE 6ht Ave.	Topeka
Westminster Presbyterian Church	1275 Boswell Ave.	Topeka
Willits House	1035 SW. Fillmore	Topeka
Woman's Club Building	420 W. 9th St.	Topeka
Woodward, Chester B., House	1272 SW. Fillmore St.	Topeka
Wakarusa Hotel	Main St.	Wakarusa
Uniontown Cemetery	NW Douglas Rd	Willard

2.13 REGIONAL AT RISK POPULATIONS

In general, at risk populations may have difficulty with medical issues, poverty, extremes in age, and communications due to language barriers. Several principles may be considered when discussing potentially at risk populations, including:

- Not all people who are considered at risk are at risk
- Outward appearance does not necessarily mark a person as at risk
- The hazard event will, in many cases, affect at risk population in differing ways

The National Response Framework defines at risk populations as "populations whose members may have additional needs before, during, and after an incident in functional areas, including but not limited to: maintaining independence, communication, transportation, supervision, and medical care."

The following tables present information on potential at risk populations within east-central Kansas.

Potential At Risk Population Data

County	2012 Population	Population 5 and Under (2010)	Population 18 and Under (2012)	Population 65+ (2012)	Population 85+ (2010)	Food Stamp Beneficiaries (2012)	Estimated People in Poverty (2012)	Person Speaking Language Other Than English At Home (2012)
Anderson	7,917	546	1,995	1,599	288	928	1,211	325
Coffey	8,502	425	1,930	1,573	221	798	842	145
Franklin	25,906	1,684	6,502	3,834	509	3,344	3,161	674
Linn	9,441	481	2,134	1,907	240	1,173	954	227
Miami	32,612	2,055	8,512	4,631	554	2,762	2,935	554
Osage	16,142	969	3,923	2,857	380	1,767	1,582	387
Shawnee	178,991	12,171	43,853	27,028	3,790	25,144	28,460	14,677

Source: University of Kansas Institute for Policy and Social Research Kansas County Profile and the United States Census Bureau

Potential At Risk Population Data, Care Facilities

County	Number of Hospitals (2011)	Number of Hospital Beds (2011)	Adult Care Homes (2011)	Adult Care Beds (2011)	Assisted Living Homes (2011)	Assisted Living Beds (2011)	Child Care Facilities (2011)
Anderson	1	41	1	51	1	30	14
Coffey	1	78	1	77	1	24	24
Franklin	1	47	3	216	3	135	65
Linn	0	0	1	58	1	25	21
Miami	2	194	4	322	4	152	95
Osage	0	0	3	178	3	91	40
Shawnee	6	1,253	17	1,538	19	824	480

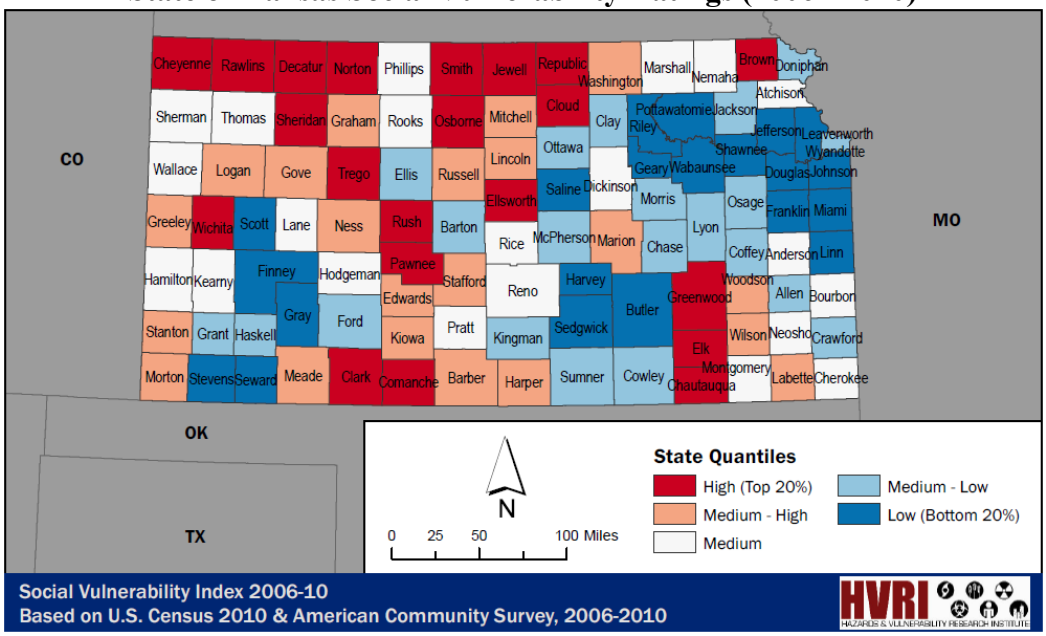
Source: University of Kansas Institute for Policy and Social Research Kansas County Profile and the United States Census Bureau

The Social Vulnerability Index (SoVI) 2006 - 2010 compiled by the Hazards and Vulnerability Research Institute in the Department of Geography at the University of South Carolina measures the social vulnerability of counties to environmental hazards. Th e index synthesizes 30 socioeconomic variables, including social, economic, demographic, and housing characteristics, which may contribute to reduction in a community's ability to prepare, respond and recover from a hazard. The major data source for this index is primarily the United States Census Bureau.

After obtaining the relevant data, a principle components analysis is used to reduce the data into set of components. All components are added together to determine a n umerical value that represents the social vulnerability for each county. Scores in the top 20% of the United States are more vulnerable counties (red) and scores in the bottom 20% of t he United States indicate the least vulnerable counties (blue).

The following map illustrates social vulnerability ratings for Kansas counties.

State of Kansas Social Vulnerability Ratings (2006 - 2010)



The following table presents the SoVi rating and national percentile for each county. In general, the higher the national percentile the higher the vulnerability.

County Social Vulnerability Ratings

County	SoVI Score (2006 - 2010)	National Percentile (2006 - 2010)
Anderson	0.217449	55.07 %
Coffey	-0.349525	43.05 %
Franklin	-1.830268	21.41 %
Linn	-1.373621	26.41 %
Miami	-3.158557	10.21 %
Osage	-0.792193	35.38 %
Shawnee	-1.240762	28.44 %

Source: Hazards and Vulnerability Research Institute, University of South Carolina

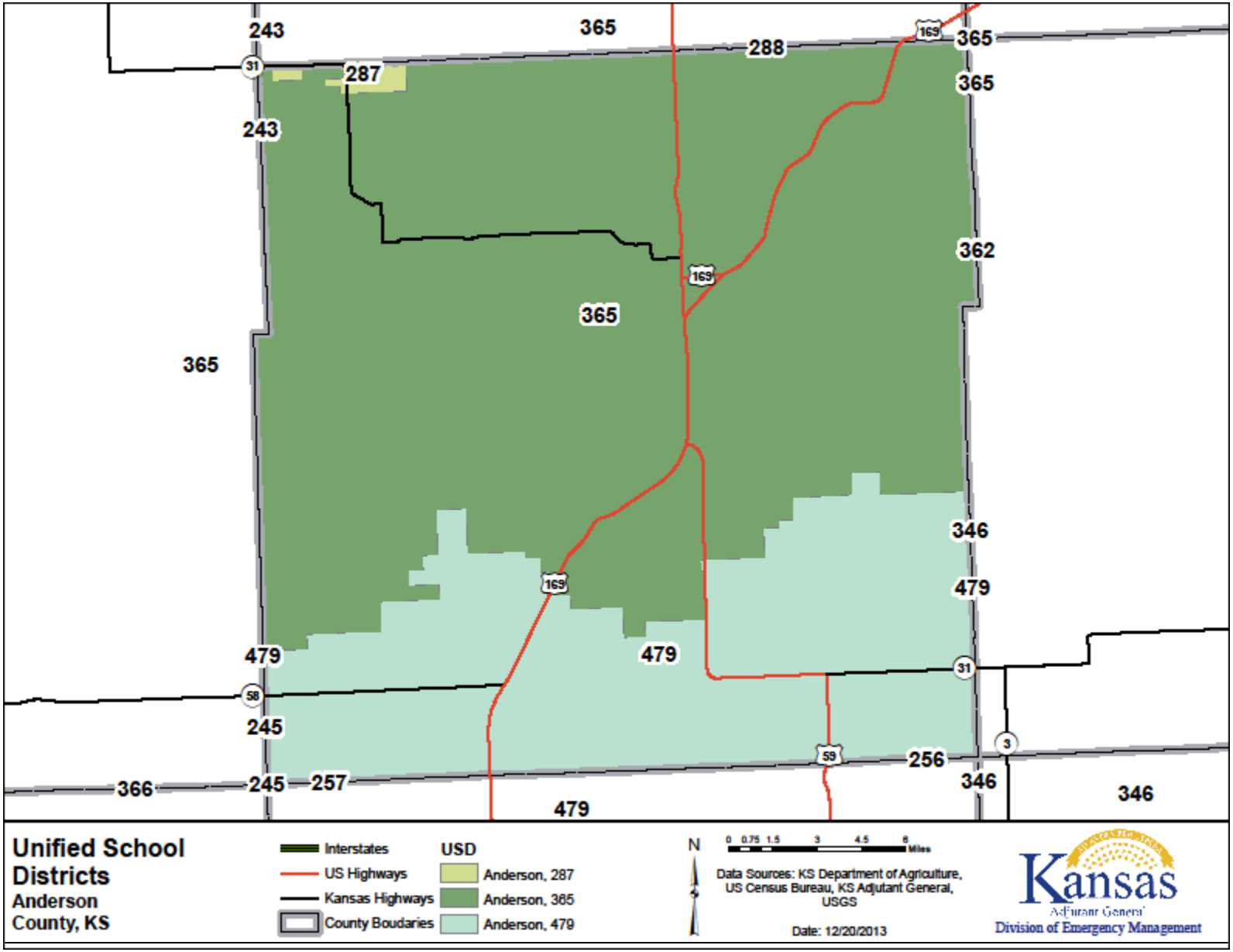
2.14 SCHOOL DISTRICT INFORMATION AND BOUNDARIES

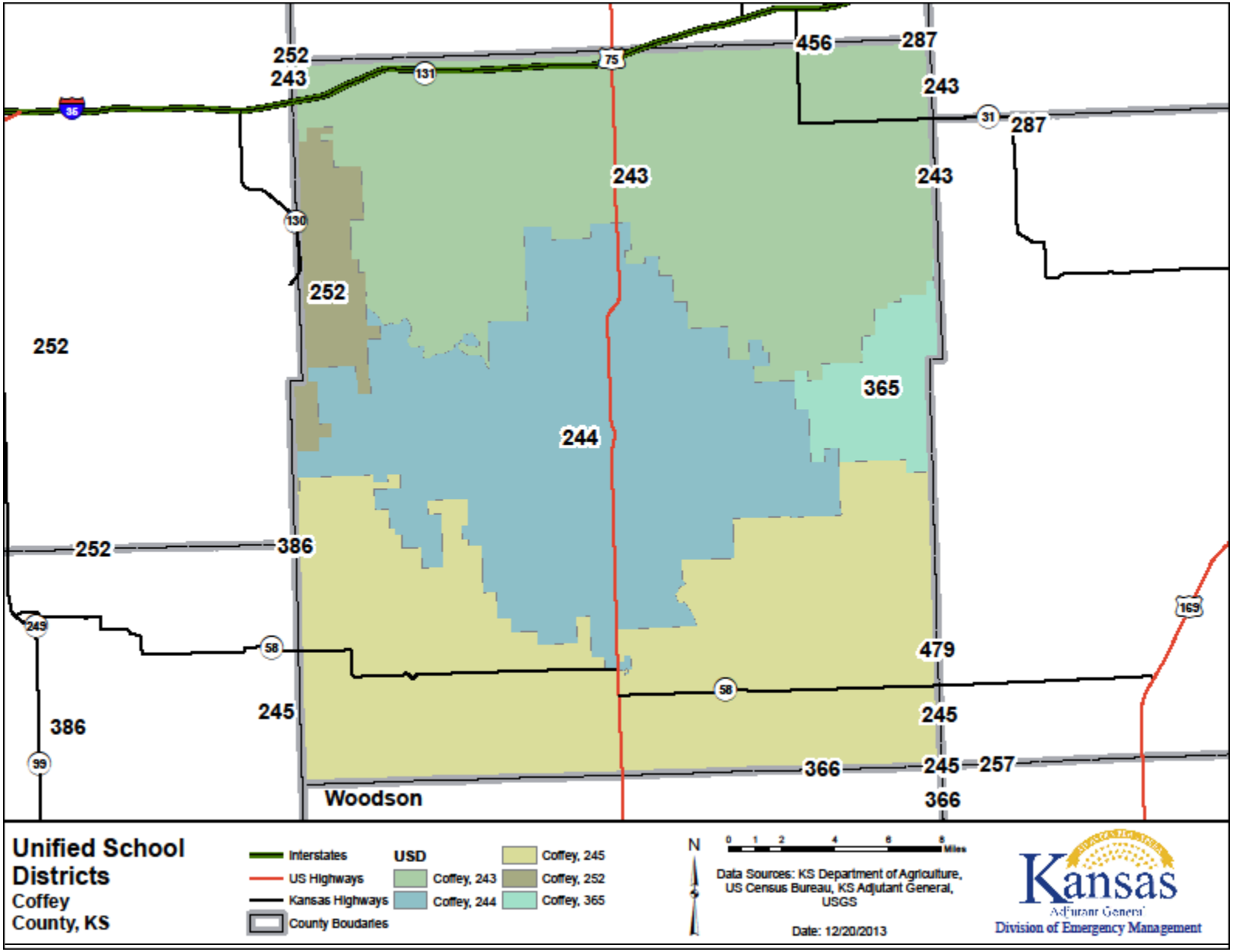
The following tables present participating USD enrollment information, the number of staff and faculty, and the number of offices and schools.

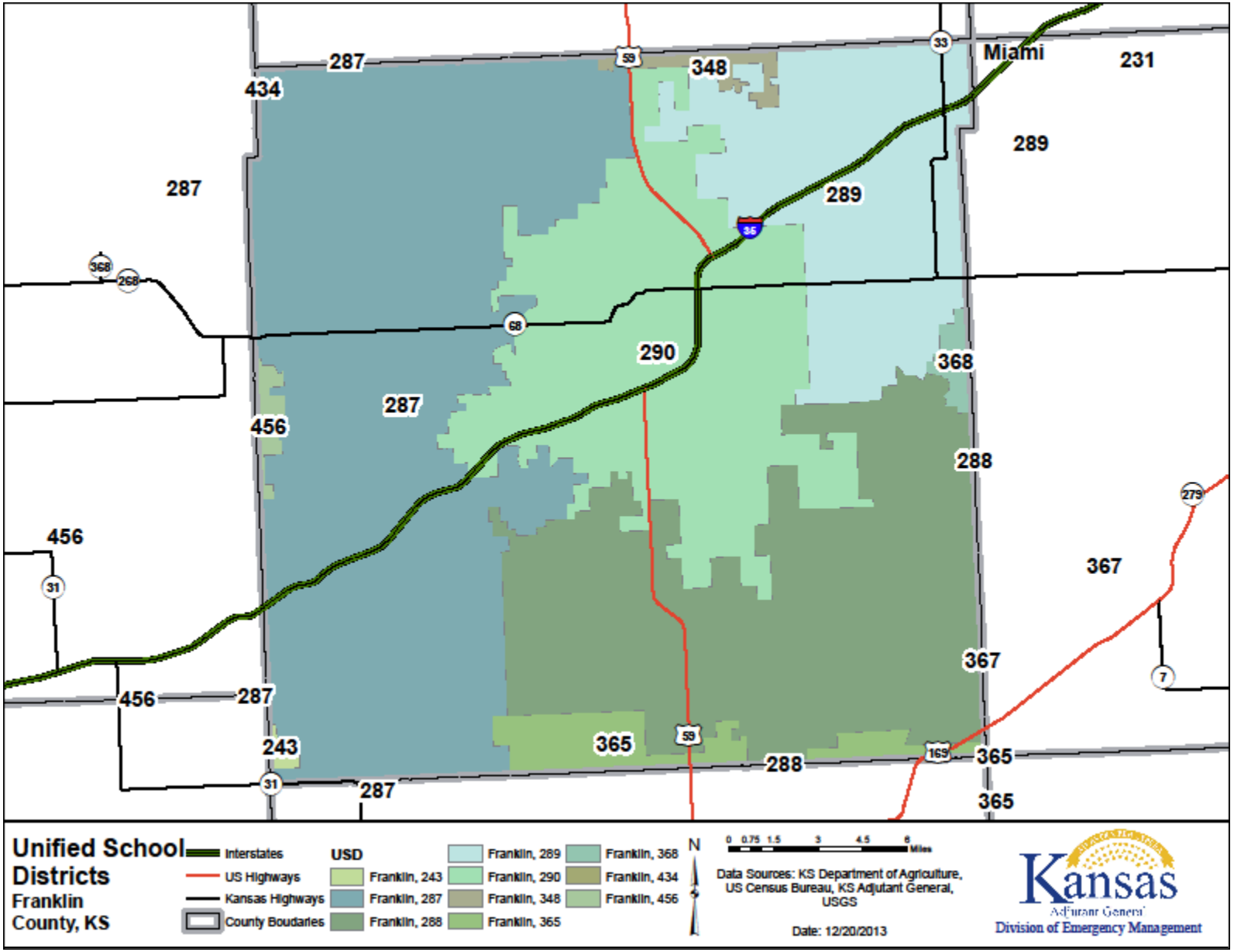
Participating USD Information

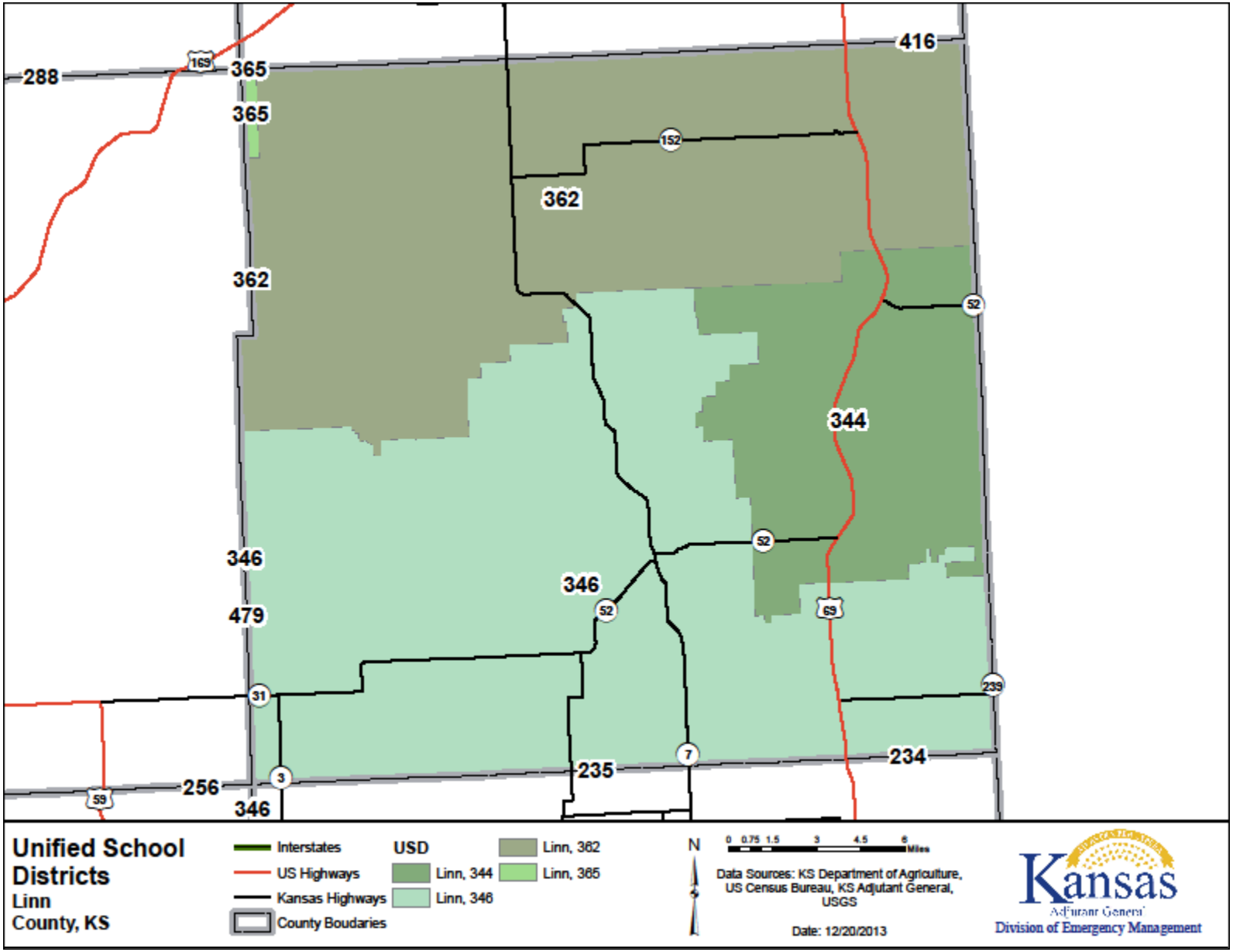
School , College or University	Total Enrollment (2013-2104)	Staff and Faculty (2011-2012)	Number of Offices and Schools (2013)
Anderson County			
USD #365 - Garnett	1,126	97	12
USD #479 - Crest	222	25	7
Coffey County			
USD #243 - Lebo / Waverly	524	61	12
USD #244 - Burlington	854	90	12
USD #245 - LeRoy / Gridley	219	26	12
Franklin County			
USD #287 - West Franklin	604	64	10
USD # 288 - Central Heights	587	52	6
USD #289 - Wellsville	810	70	7
USD #290 - Ottawa	2,520	205	22
Linn County			
USD #344 - Pleasanton	404	50	7
USD #346 - Mound City	558	47	9
USD #362 - Prairie View	486	84	9
Miami County			
USD #367 - Osawatomie	1,253	88	13
USD #368 - Paola	1,964	236	13
USD #416 - Louisburg	1,825	104	10
Osage County			
USD #420 - Osage City	650	79	8
USD #421 - Lyndon	454	39	7
USD #434 - Santa Fe Trail	1,043	87	9
USD #454 - Burlingame	327	31	7
USD #456 - Marais des Cygnes Valley	301	30	7
Three Lakes Educational Cooperative	-	-	-
Shawnee County			
USD #321 - Kaw Valley	454	39	7
USD #337 - Royal Valley	951	79	10
USD #345 - Seaman	3,938	334	17
USD #372 - Silver Lake	730	61	6
USD #437 - Auburn / Washburn	6,078	506	18
USD #450 - Shawnee Heights	3,625	277	12
USD #501 - Topeka	14,095	1,352	43

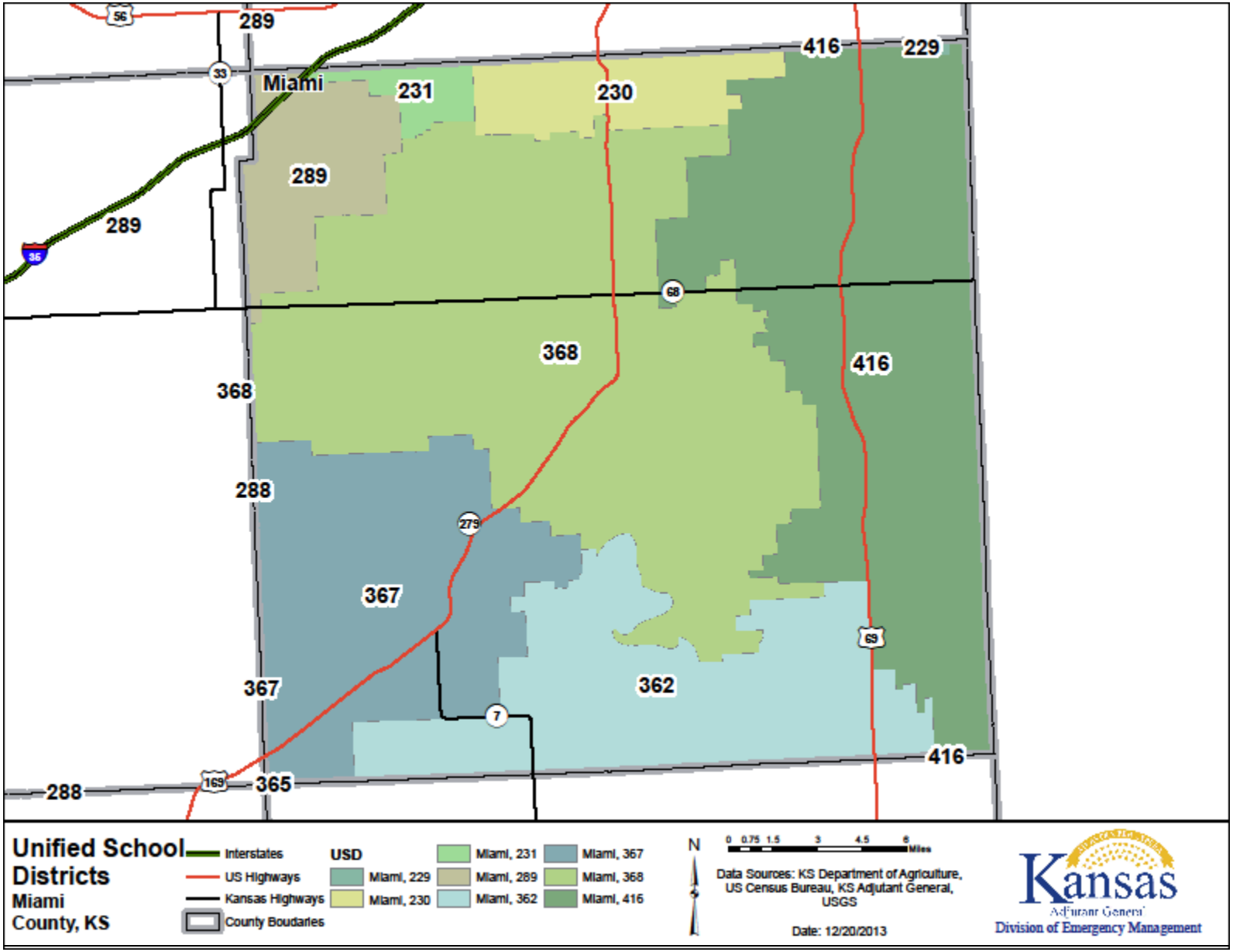
The following maps present regional school district boundaries by county. Ca pability information for each participating district is presented Section 4.

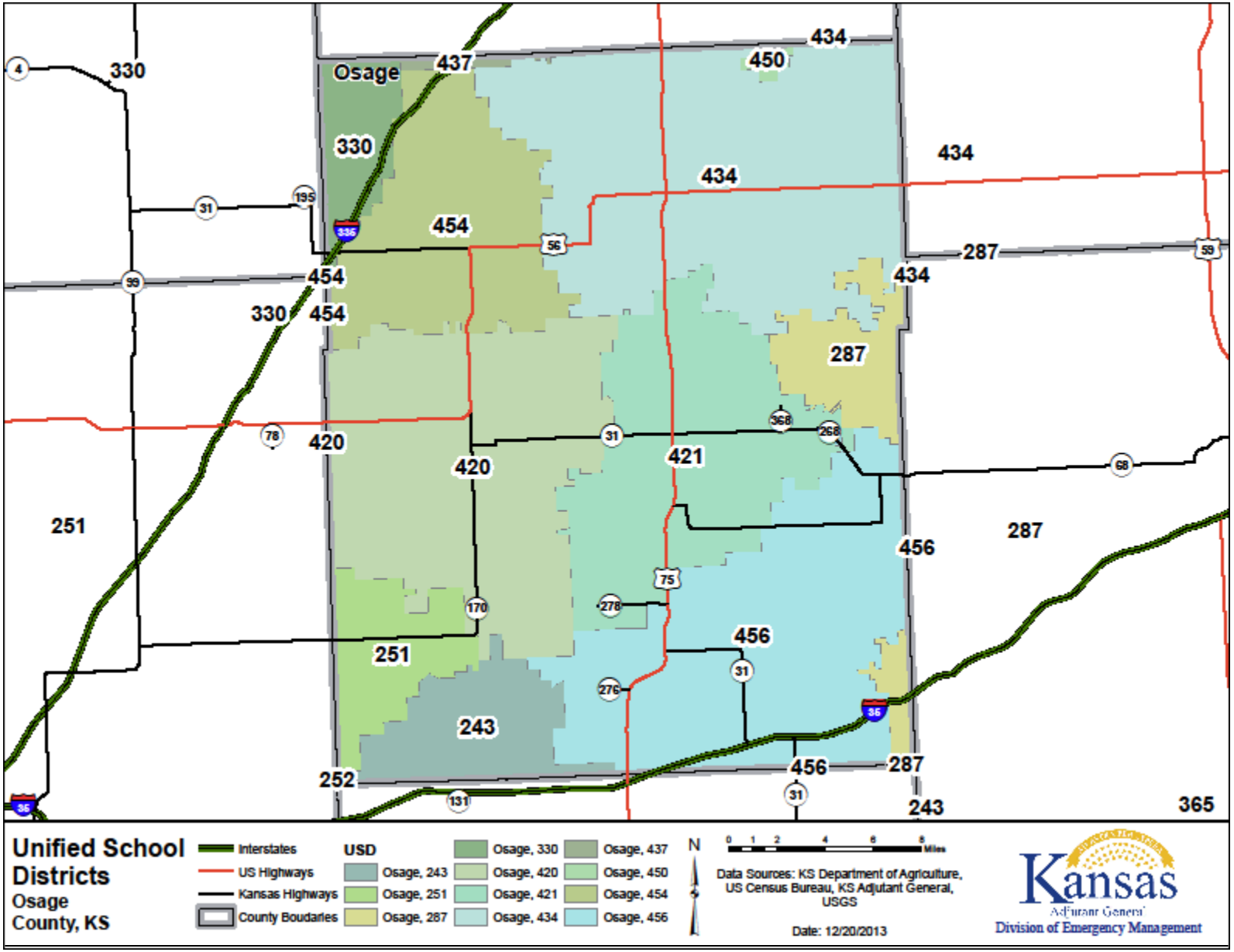

243
365
288
365
287
365
243
362
365
365
346
479
479
479
58
245
59
256
366
245
257
346
346
479
Unified School Districts
Anderson County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
USD
Anderson, 287
Anderson, 365
Anderson, 479
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/20/2013
Kansas
Adjutant General
Division of Emergency Management

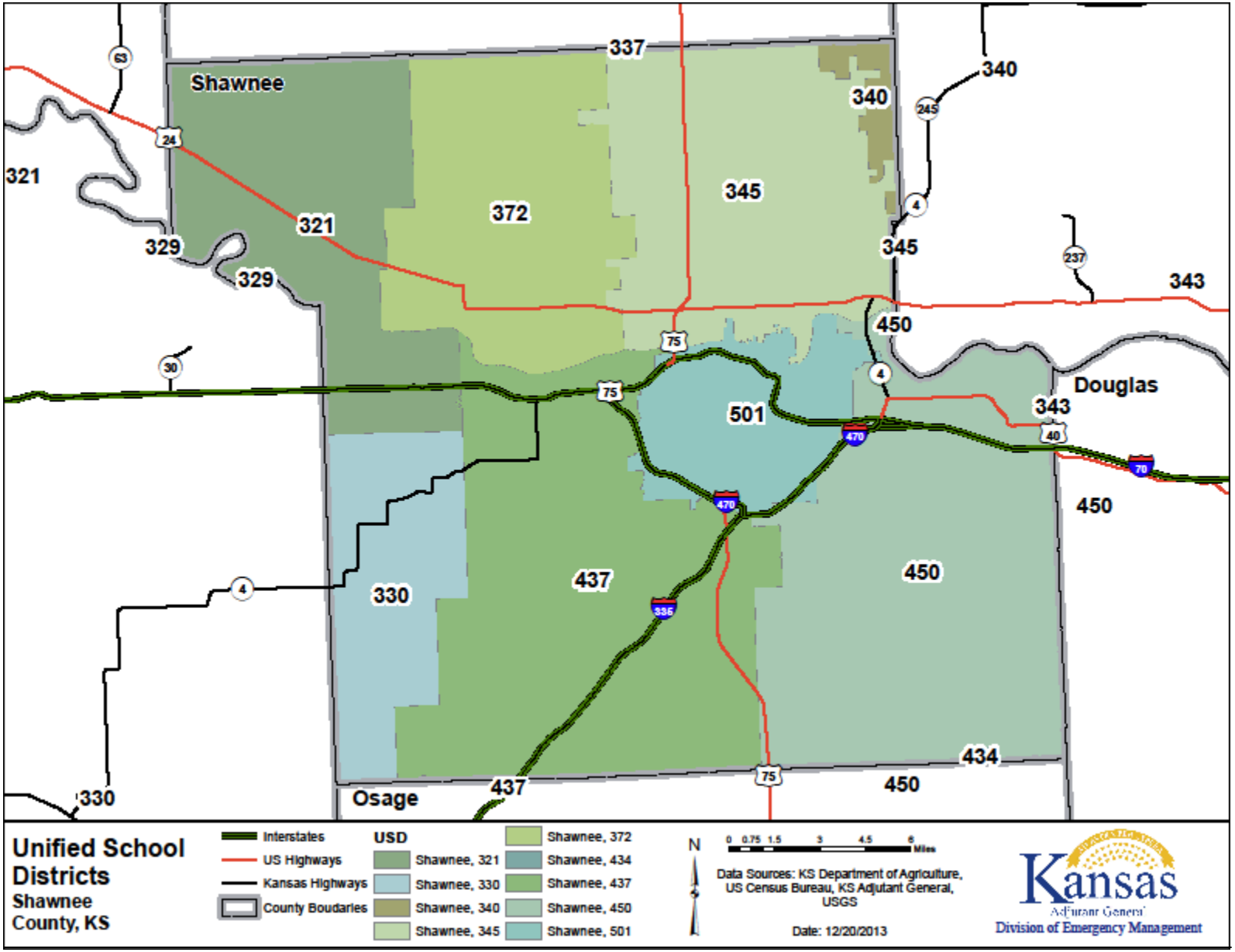

252
243
131
75
456
287
243
31
287
243
243
130
252
252
365
244
252
386
169
249
58
479
58
386
245
245
99
366
245
257
Woodson
366
Unified School Districts
Coffey County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
USD
Coffey, 243
Coffey, 244
Coffey, 245
Coffey, 252
Coffey, 365
N
0 1 2 4 6 8 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/20/2013
Kansas
Adjutant General
Division of Emergency Management


Miami
287
434
348
231
289
287
289
290
368
287
456
288
456
367
456
287
367
243
365
288
365
287
365
Unified School Districts
Franklin County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
USD
Franklin, 243
Franklin, 287
Franklin, 288
Franklin, 289
Franklin, 290
Franklin, 348
Franklin, 365
Franklin, 368
Franklin, 434
Franklin, 456
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/20/2013
Kansas
Adjutant General
Division of Emergency Management


288
169
365
365
416
152
362
362
52
344
346
52
346
52
69
479
31
239
7
234
235
3
256
59
346
Unified School Districts
Linn
County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
USD
Linn, 344
Linn, 346
Linn, 362
Linn, 365
N
0 0.75 1.5 3 4.5 6
Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/20/2013
Kansas
Adjutant General
Division of Emergency Management

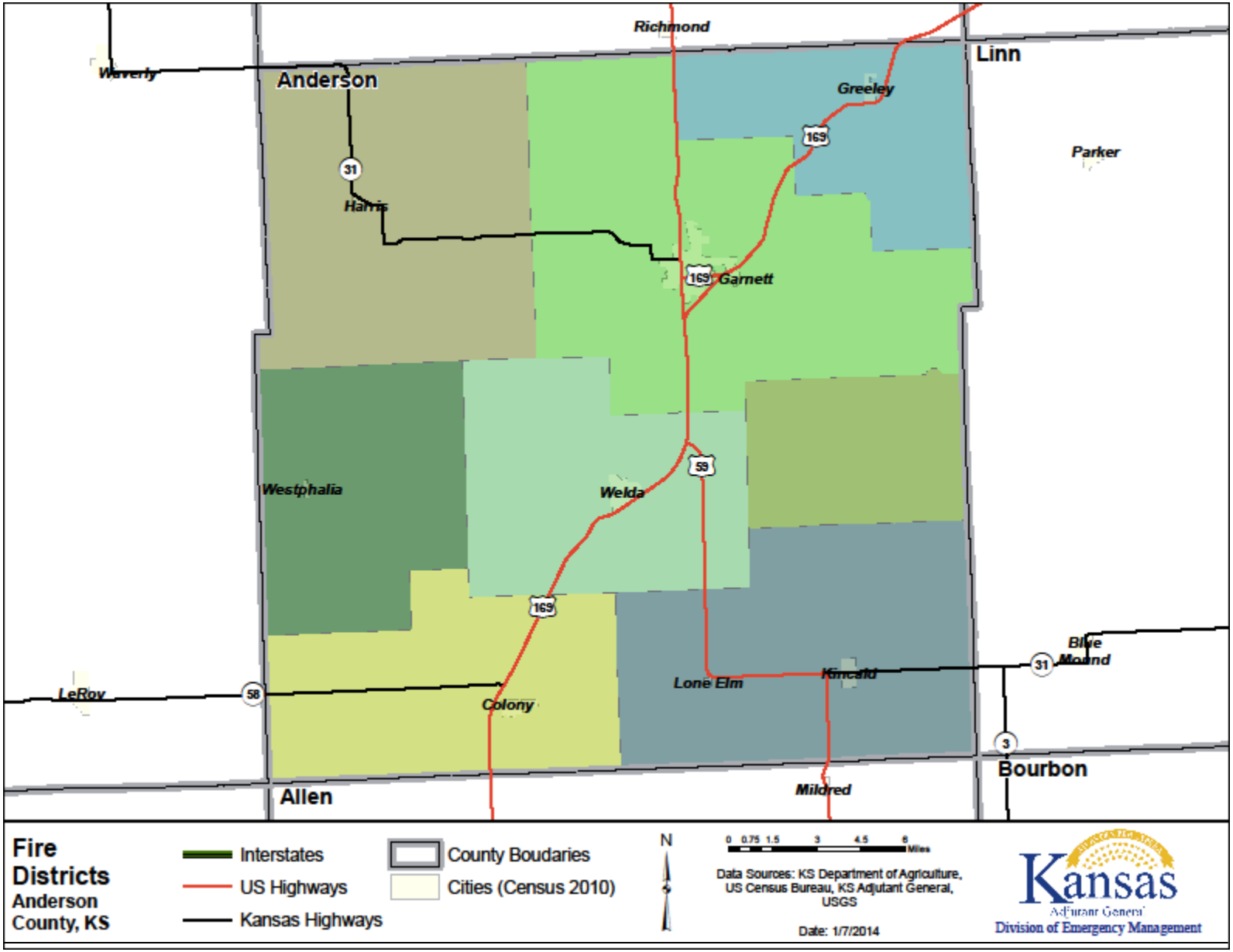

289
Miami
231
230
416
229
289
289
368
368
416
288
279
367
69
362
367
7
416
288
169
365
Unified School Districts
Miami County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
USD
Miami, 229
Miami, 230
Miami, 231
Miami, 289
Miami, 362
Miami, 367
Miami, 368
Miami, 416
N
0 0.75 1.5 3 4.5 6
Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/20/2013
Kansas
Adjutant General
Division of Emergency Management

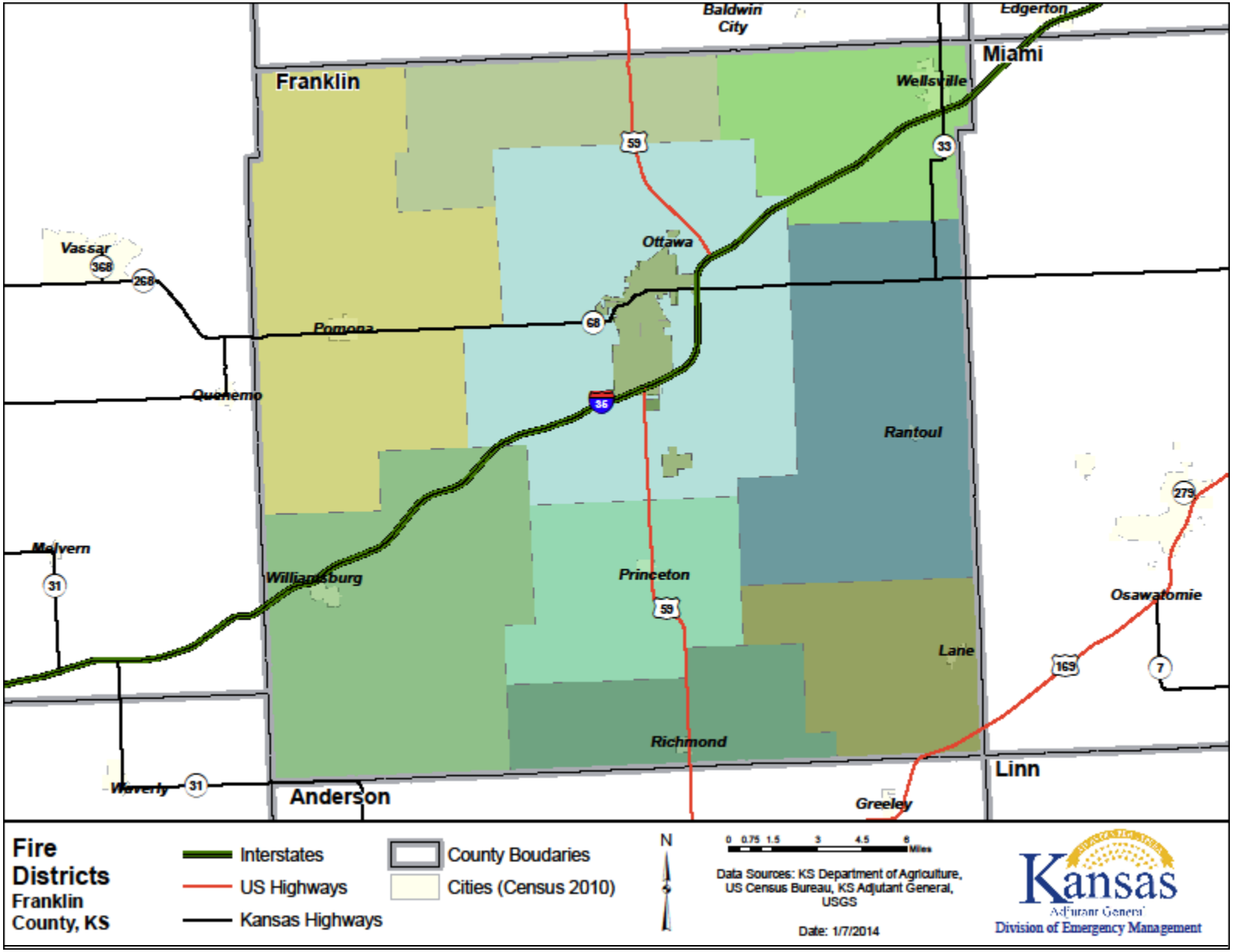

Osage
330
437
434
450
434
330
434
454
56
287
59
454
434
330
454
287
78
420
31
368
268
421
420
68
251
287
456
75
278
170
456
251
31
276
35
243
456
287
252
131
31
243
365
Unified School Districts
Osage County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
USD
Osage, 243
Osage, 251
Osage, 287
Osage, 330
Osage, 420
Osage, 421
Osage, 434
Osage, 437
Osage, 450
Osage, 454
Osage, 456
N
0 1 2 4 6 8 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/20/2013
Kansas
Adjutant General
Division of Emergency Management

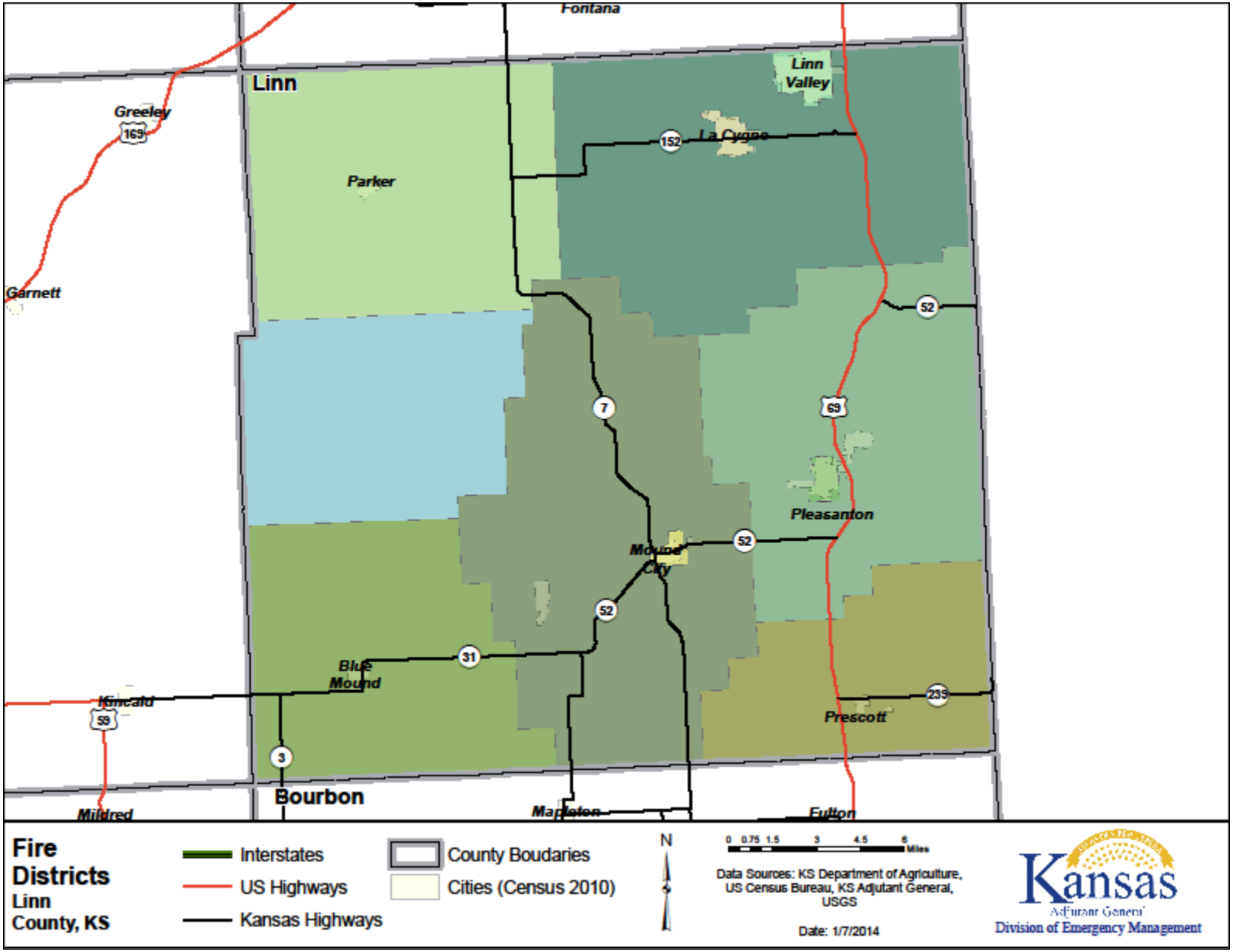

Shawnee
337
340
340
345
372
345
321
321
329
329
343
450
Douglas
343
501
450
437
330
450
434
450
330
Osage
437
Unified School Districts
Shawnee County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
USD
Shawnee, 321
Shawnee, 330
Shawnee, 340
Shawnee, 345
Shawnee, 372
Shawnee, 434
Shawnee, 437
Shawnee, 450
Shawnee, 501
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/20/2013
Kansas
Adjutant General
Division of Emergency Management

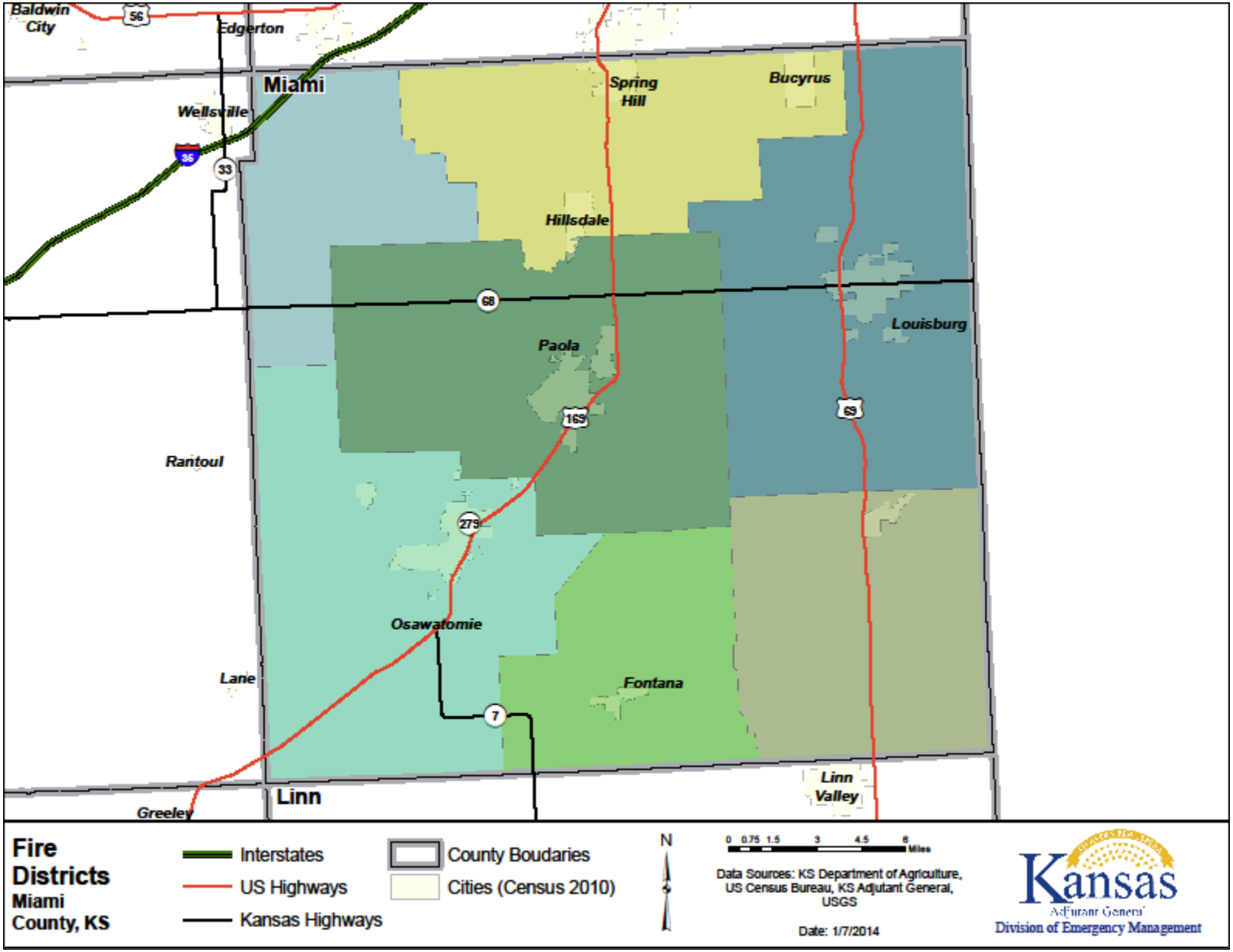
2.15 FIRE DISTRICT BOUNDARIES

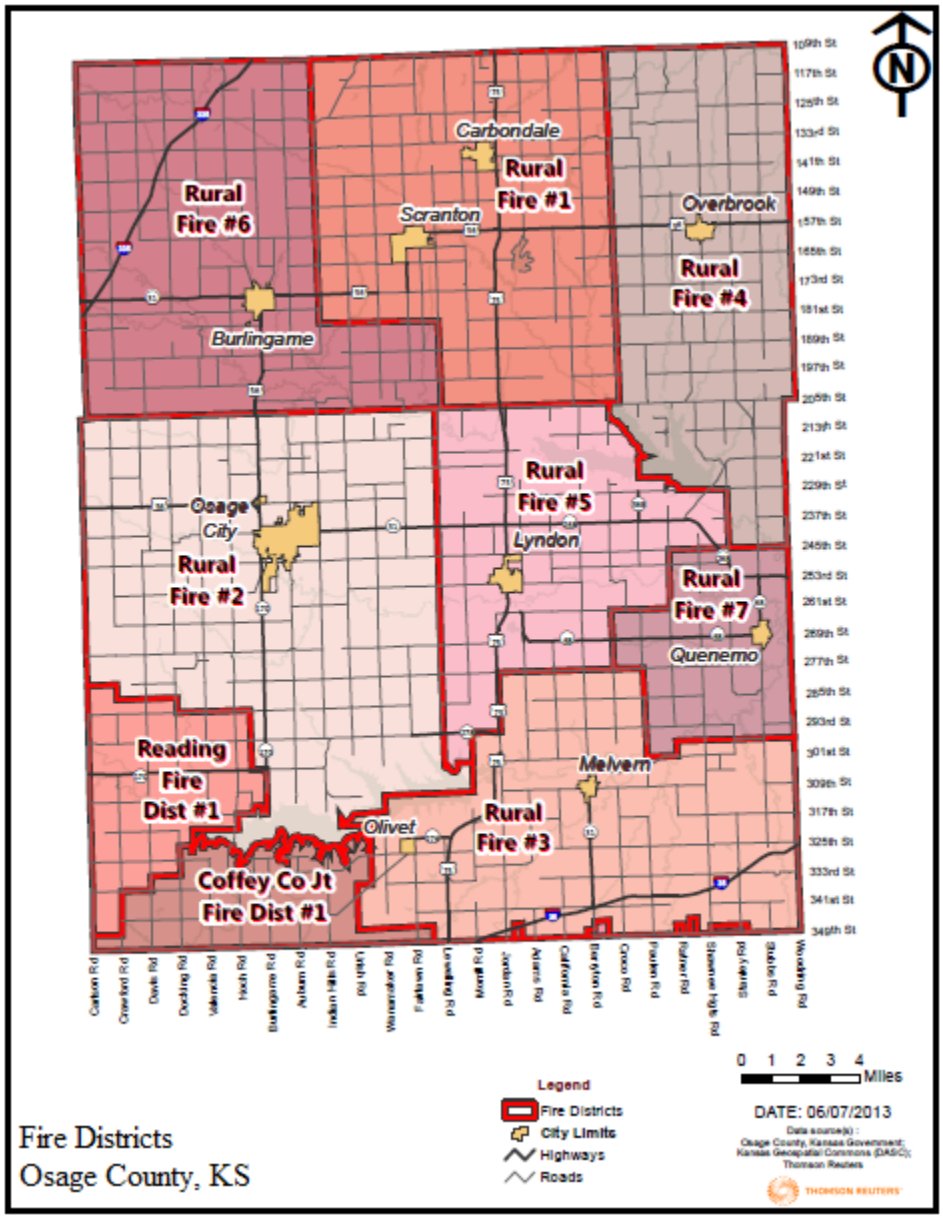
The following maps present regional fire district boundaries by county. Note that not all participating counties and jurisdictions had this information available for use.


Richmond
Linn
Waverly
Anderson
Greeley
169
Parker
31
Harris
169
Garnett
59
Westphalia
Welda
169
Blue Mound
31
Lone Elm
Kincaid
LeRoy
58
Colony
3
Bourbon
Allen
Mildred
Fire Districts
Anderson County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
Cities (Census 2010)
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 1/7/2014
Kansas
Adjutant General
Division of Emergency Management


Baldwin City
Edgerton
Franklin
Miami
Wellsville
Ottawa
Vassar
Pomona
Quenemo
Rantoul
Melvern
Williamsburg
Princeton
Osawatomie
Lane
Richmond
Waverly
Anderson
Greeley
Linn
59
33
368
268
68
35
31
59
279
169
7
Fire Districts
Franklin County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
Cities (Census 2010)
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 1/7/2014
Kansas
Adjutant General
Division of Emergency Management

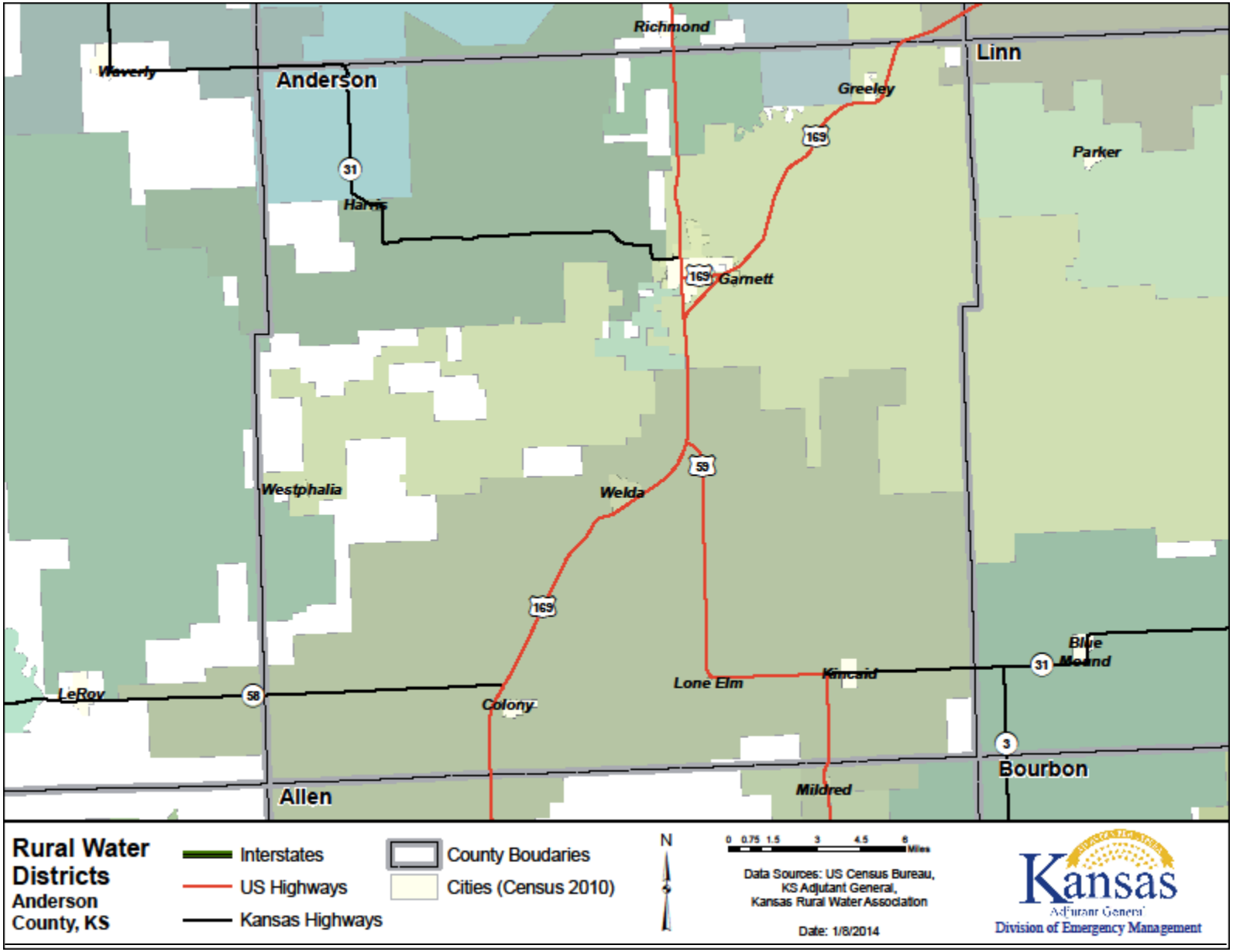

Fontana
Linn
Linn Valley
Greeley
169
152
La Cygne
Parker
Garnett
52
7
69
Pleasanton
Mound City
52
52
31
Blue Mound
Kincaid
59
235
Prescott
3
Bourbon
Mildred
Fulton
Fire Districts
Linn County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
Cities (Census 2010)
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 1/7/2014
Kansas
Adjutant General
Division of Emergency Management

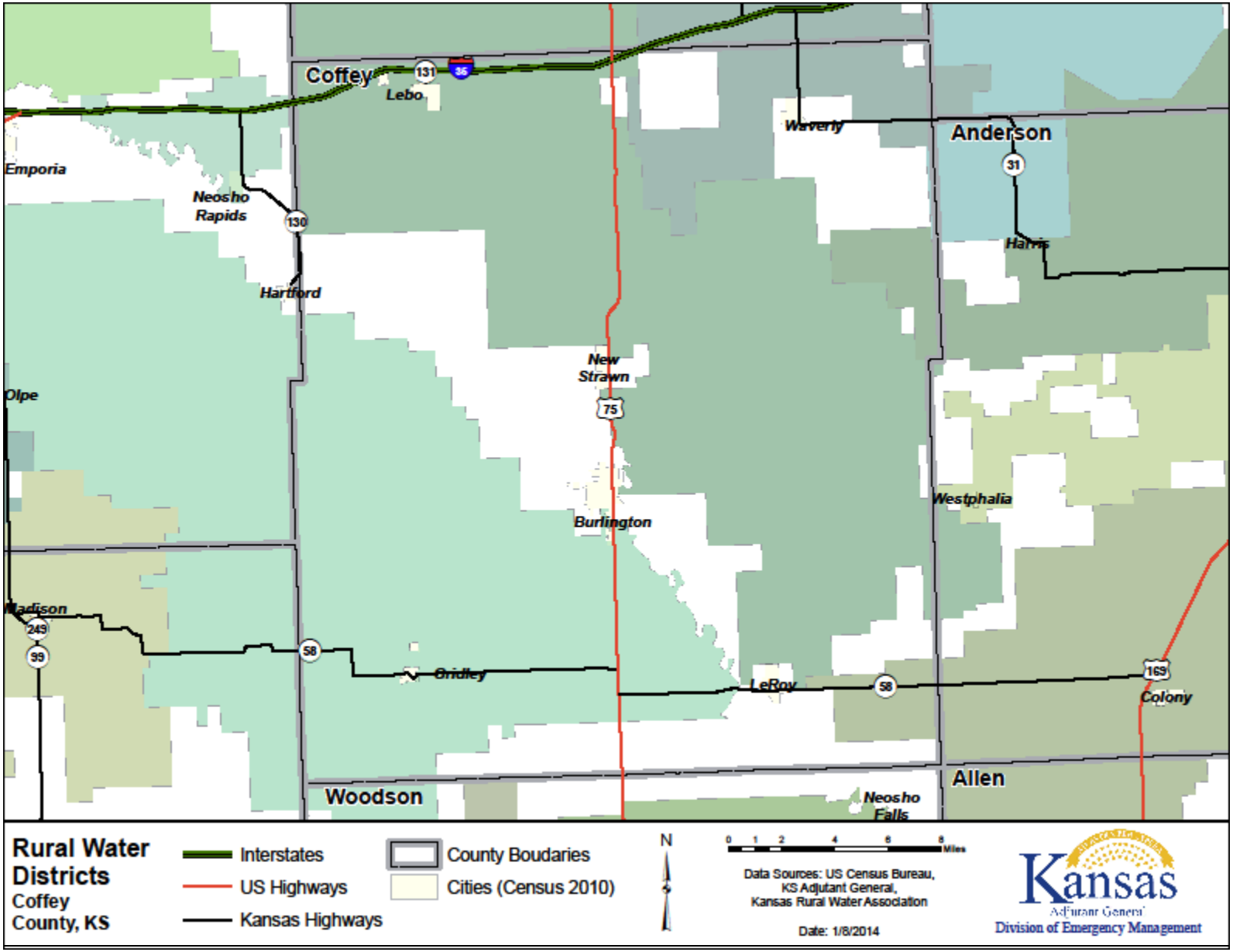

Baldwin City
56
Edgerton
Miami
Wellsville
35
33
Spring Hill
Bucyrus
Hillsdale
68
Louisburg
Paola
69
169
Rantoul
279
Osawatomie
Lane
Fontana
7
Linn
Linn Valley
Greeley
Fire Districts
Miami County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
Cities (Census 2010)
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 1/7/2014
Kansas
Adjutant General
Division of Emergency Management

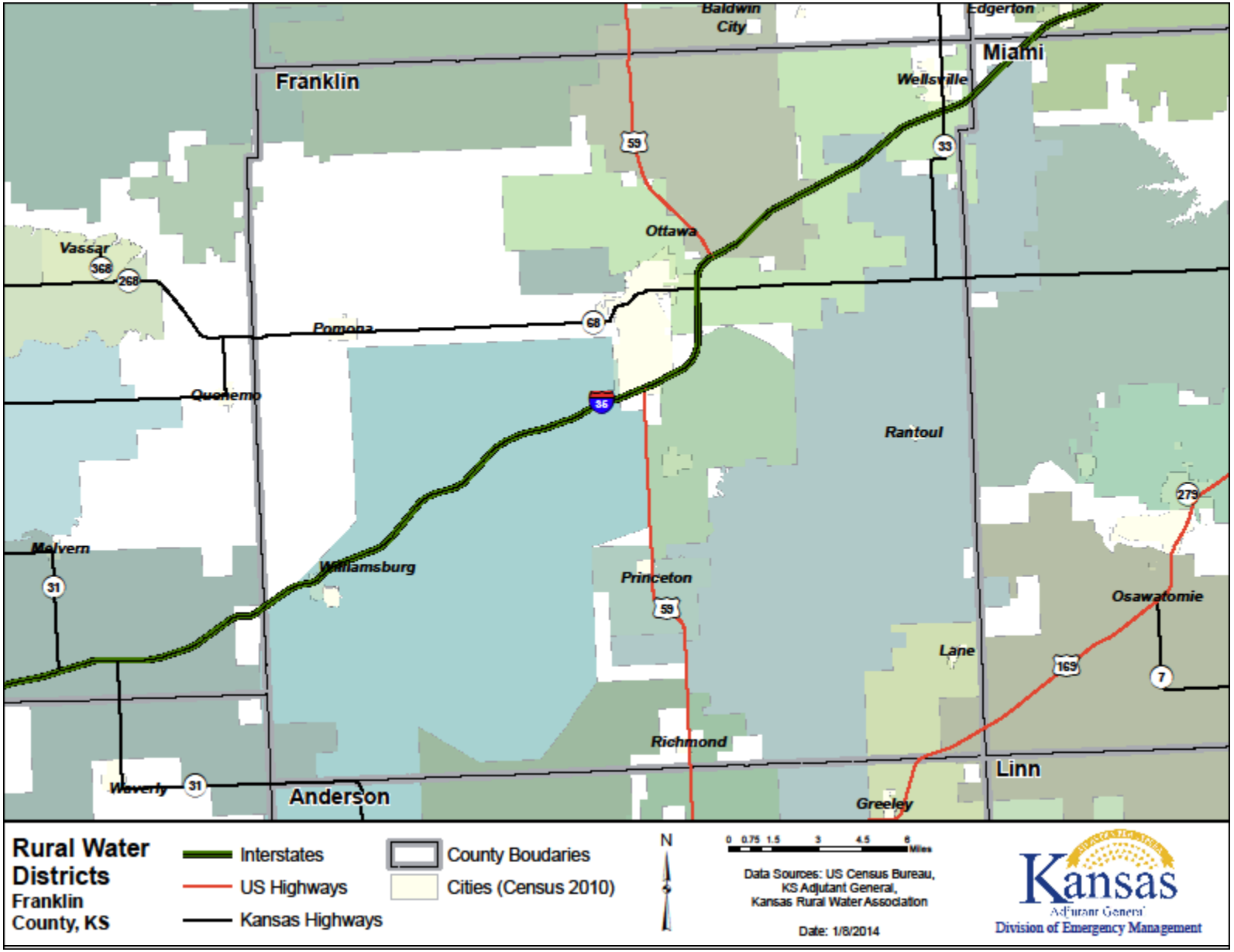


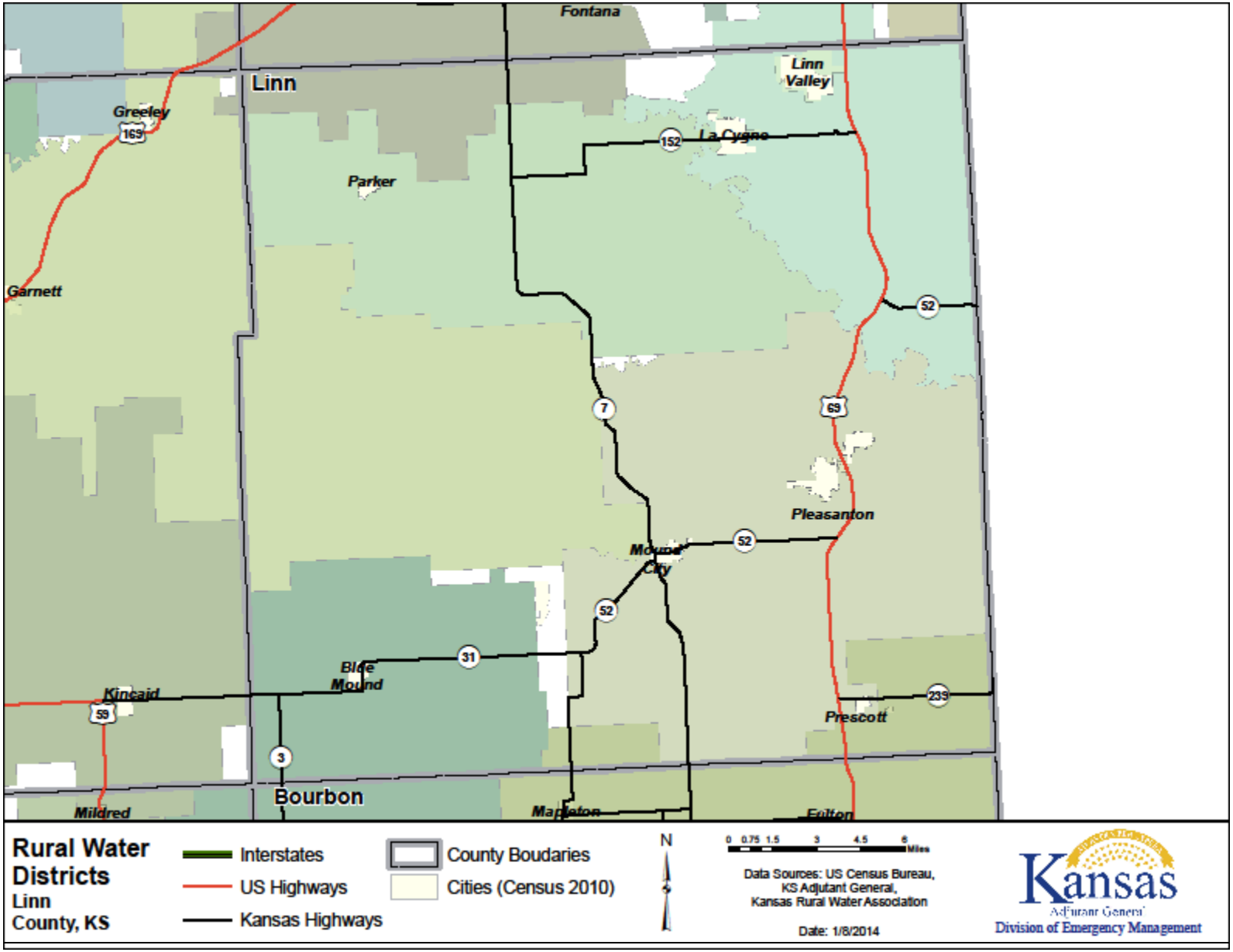
2.16 WATER DISTRICT BOUNDARIES

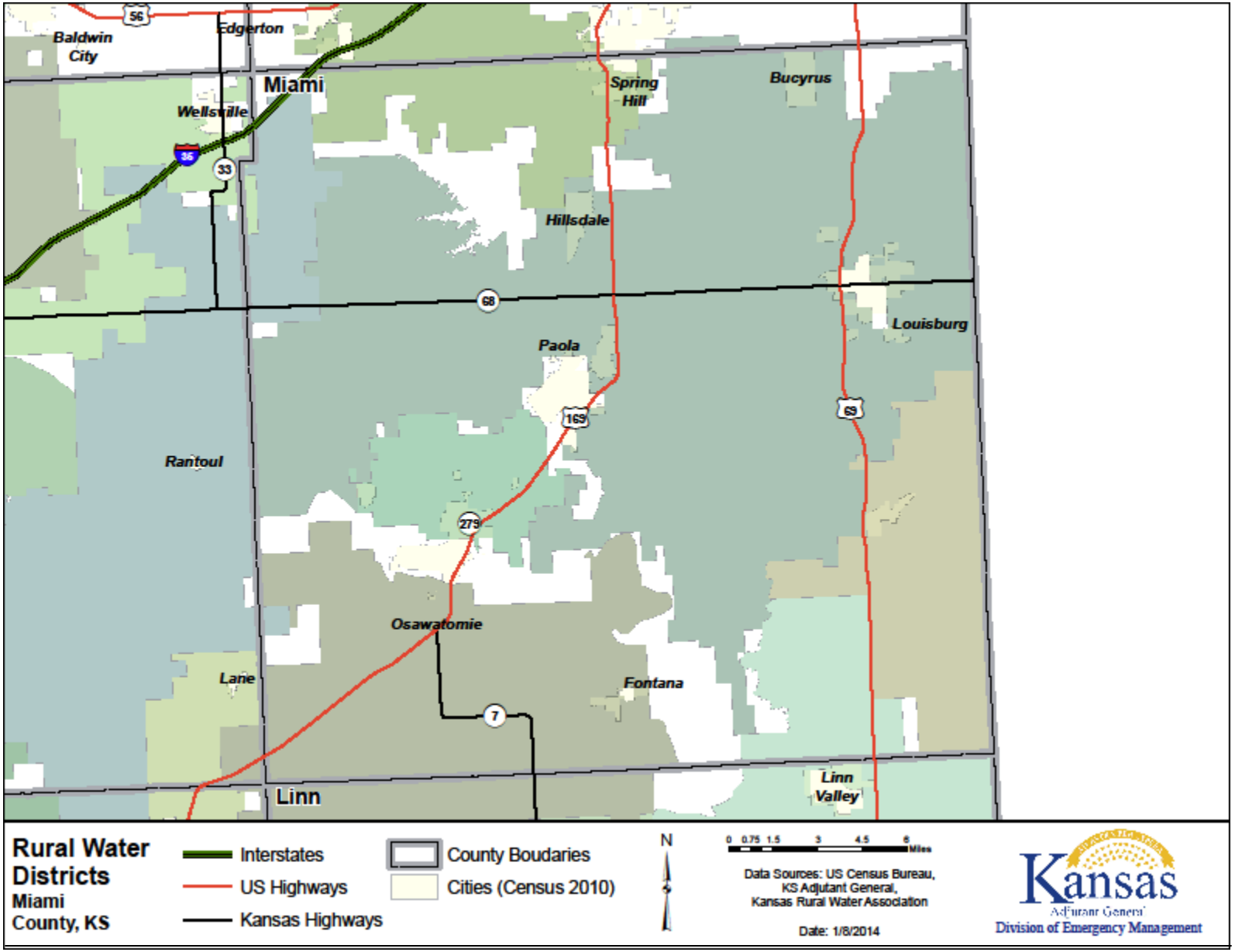
The following maps present regional water district boundaries by county.

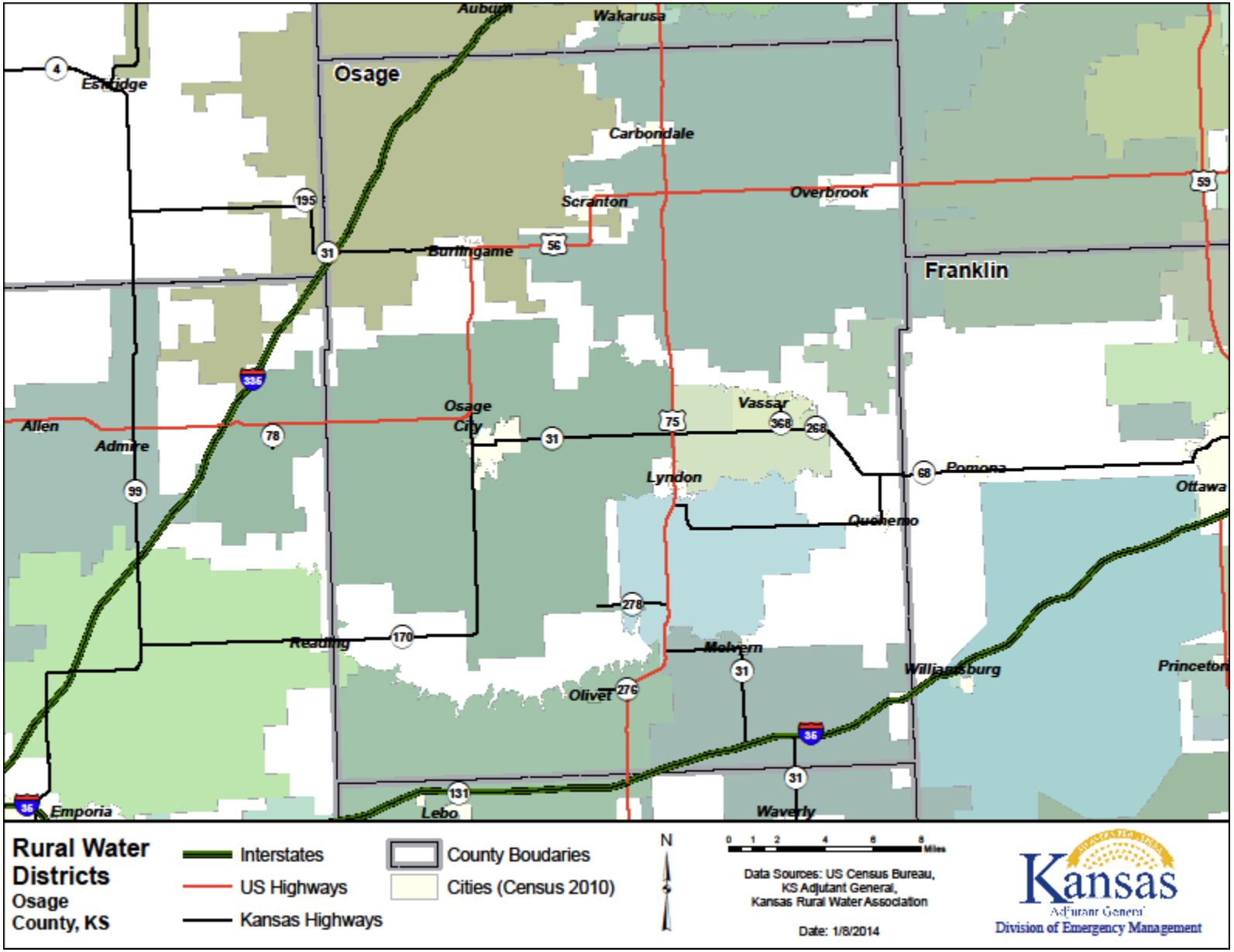

Richmond
Linn
Waverly
Anderson
Greeley
169
Parker
31
Harris
169
Garnett
59
Westphalia
Welda
169
Blue Mound
31
Kincaid
Lone Elm
LeRoy
58
Colony
3
Bourbon
Allen
Mildred
Rural Water Districts
Anderson County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
Cities (Census 2010)
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: US Census Bureau, KS Adjutant General, Kansas Rural Water Association
Date: 1/6/2014
Kansas
Adjutant General
Division of Emergency Management

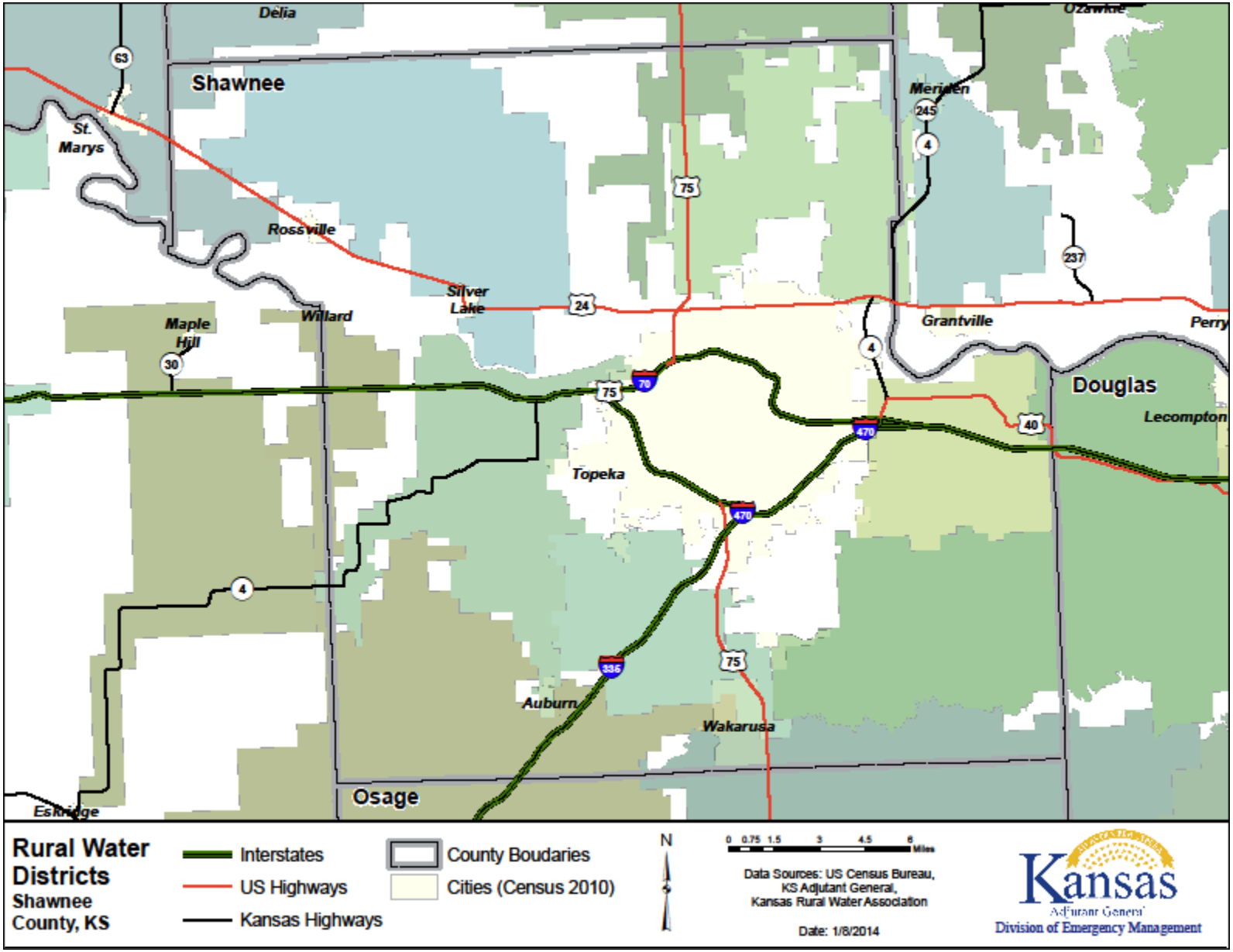

Coffey
Lebo
Waverly
Anderson
Emporia
Neosho Rapids
Harris
Hartford
New Strawn
Olpe
Westphalia
Burlington
Madison
Gridley
LeRoy
Colony
Allen
Woodson
Neosho Falls
Rural Water Districts
Coffey County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
Cities (Census 2010)
N
Data Sources: US Census Bureau, KS Adjutant General, Kansas Rural Water Association
Date: 1/8/2014
Kansas
Adjutant General
Division of Emergency Management


Baldwin City
Edgerton
Franklin
Miami
Wellsville
59
33
Ottawa
Vassar
368
268
Pomona
68
Quenemo
35
Rantoul
273
Melvern
31
Williamsburg
Princeton
59
Osawatomie
Lane
169
7
Richmond
Linn
Waverly
31
Anderson
Greeley
Rural Water Districts
Franklin County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
Cities (Census 2010)
N
0 0.75 1.5 3 4.5 6
Miles
Data Sources: US Census Bureau, KS Adjutant General, Kansas Rural Water Association
Date: 1/8/2014
Kansas
Adjutant General
Division of Emergency Management


Fontana
Linn
Linn Valley
Greeley
169
152
La Cygne
Parker
Garnett
52
7
69
Pleasanton
Mound City
52
52
31
Blue Mound
Kincaid
59
239
Prescott
3
Bourbon
Mildred
Fulton
Rural Water Districts
Linn County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
Cities (Census 2010)
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: US Census Bureau, KS Adjutant General, Kansas Rural Water Association
Date: 1/8/2014
Kansas
Adjutant General
Division of Emergency Management


Baldwin City
Edgerton
Miami
Wellsville
Spring Hill
Bucyrus
Hillsdale
Louisburg
Paola
Rantoul
Osawatomie
Lane
Fontana
Linn
Linn Valley
56
33
35
68
69
169
279
7
Rural Water Districts
Miami County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
Cities (Census 2010)
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: US Census Bureau, KS Adjutant General, Kansas Rural Water Association
Date: 1/8/2014
Kansas
Adjutant General
Division of Emergency Management


Auburn
Wakarusa
Osage
Carbondale
Overbrook
Scranton
Burlingame
Franklin
Osage City
Vassar
Lyndon
Pomona
Ottawa
Quenemo
Allen
Admire
Reading
Melvern
Olivet
Williamsburg
Princeton
Emporia
Lebo
Waverly
Rural Water Districts
Osage County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
Cities (Census 2010)
N
Data Sources: US Census Bureau, KS Adjutant General, Kansas Rural Water Association
Date: 1/6/2014
Kansas
Adjutant General
Division of Emergency Management


Delia
Shawnee
St. Marys
Rossville
Silver Lake
Willard
Maple Hill
Topeka
Auburn
Wakarusa
Osage
Eskridge
Meriden
Ozawkie
Grantville
Perry
Douglas
Lecompton
63
24
30
75
70
470
4
40
237
245
336
Rural Water Districts
Shawnee County, KS
Interstates
US Highways
Kansas Highways
County Boudaries
Cities (Census 2010)
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: US Census Bureau, KS Adjutant General, Kansas Rural Water Association
Date: 1/6/2014
Kansas
Adjutant General
Division of Emergency Management

2.17 REGIONAL THREATENED AND ENDANGERED SPECIES

The Endangered Species Act (ESA) established a Federal program to conserve, protect, and restore threatened or endangered plants and animals, as well as their habitats. ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened or endangered species. Jurisdictions using funding from the Federal government cannot authorize any actions that jeopardize the existence of an endangered or threatened species, or result in the destruction of habitats for these species. The following provide definitions for endangered and threatened species:

- **Endangered species:** any species of wildlife whose continued existence as a viable component of the state's wild fauna is determined to be in jeopardy. That term shall also include any species of wildlife determined to be an endangered species pursuant to Pub. L. No. 93-205 (December 28, 1973), the Endangered Species Act of 1973, and amendments thereto

- **Threatened species:** any species of wildlife which appears likely, within the foreseeable future, to become an endangered species. That term shall also include any species of wildlife determined to be a threatened species pursuant to Pub. L. No. 93-205 (December 28, 1973), the Endangered Species Act of 1973, and amendments thereto.

The following table is a list of the endangered or threatened species for the region.

- Least Tern (Sterna antillarum)
- Mead's milkweed (*Asclepias meadii*)
- Neosho Madtom (*Noturus placidus*)
- Neosho Mucket (*Lampsilis rafinesqueana*)
- Spectacleacase (mussel) (Cumberlandia monodonta)
- Western prairie fringed Orchid (*Platanthera praeclara*)

3.0 RISK ASSESSMENT

3.1 INTRODUCTION

44 CFR 201.6(C) Plan content. The plan shall include the following: (2) risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.

The ultimate purpose of this Hazard Mitigation Plan is to minimize the loss of life and property in the planning region. In order to accomplish this all relevant hazards, potential vulnerabilities and exposures for the region have been identified. Once potential hazards, vulnerabilities and exposure have been identified communities within the region are able to conceptualize their potential risks as part of a risk assessment process. Based on this understanding of risk, communities can then develop a strategy to identify and prioritize mitigation action to defend against these potential risks. The following table presents a definition of terms used within this section.

Definition of Terms

Term	Definition
Hazard	A potential source of injury, death or damage
Vulnerability	Susceptibility to injury, death or damage
Exposure	People and property within the area the potential hazard could affect
Risk	Function of potential hazard, vulnerability and exposure, it is the likelihood of a hazard event resulting in injury, death or damage
Risk Mitigation	A systematic reduction in the exposure and vulnerability to a potential hazard

3.2 METHODOLOGY

The risk assessment for east-central Kansas followed the methodology described in the FEMA "Local Mitigation Planning Handbook" (March 2013). FEMA recommends the following steps be taken, with each step described in further detail in the following sections:



Each step is described in detail in the following sections, with Inventory Assets and Estimate Losses being combined into Hazard Vulnerability and Impact.

3.3 IDENTIFY POTENTIAL HAZARDS

44 CFR 201.6(C)(2)(i) A description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

The hazard identification was compiled by investigating the various hazard occurrences within the east-central Kansas region. The HMPC identified 21 natural hazards that may affect the planning area and organized these hazards to be consistent with the Kansas Hazard Mitigation Plan (2013). These hazards are listed below and profiled in further detail in the next sections.

- Agricultural Infestation
- Civil Disorder
- Dam/Levee Failure
- Drought
- Earthquake
- Expansive Soils
- Extreme Temperatures
- Flood
- Hailstorm
- Hazardous Materials
- Land Subsidence
- Landslide
- Lightning
- Major Disease Outbreak
- Radiological
- Soil Erosion and Dust
- Terrorism/Agri-terrorism
- Tornado
- Utility/Infrastructure Failure
- Wildfire
- Wind Storm
- Winter Storm

For purposes of this multi-jurisdictional plan, hazards were identified initially by county to include all participating jurisdictions within that county, and then expanded to a regional basis.

Based on discussion with the HMPC and a lack of identified risk or history, numerous FEMA identified hazards, such as avalanche, coastal erosion, hurricane, tsunami and volcano, were not included in the scope of this plan.

3.4 PROFILE HAZARD EVENTS

Based on the identification of potential hazards, each hazard is profiled to provide data concerning previous occurrences, the probability of future occurrence and the threat to the planning area. As east-central Kansas is generally uniform in terms of climate, topography, building characteristics and development trends, overall hazards and vulnerability do not vary greatly across the planning area. Weather-related hazards such as drought, extreme temperatures, hail, tornados, windstorms and winter storms affect the entire planning area. As such, one general profile will be created for these hazards. However, some hazards such as dam and levee failure, flood and landslide may have local variances and multiple profiles may be developed if the risk does not match with the entire planning area .

For each identified hazard the following information is provided:

- Hazard Description: a general discussion of the hazard and includes information on potential warning time, the potential duration of the event, and potential impacts
- Hazard Location: the geographic extent or location of the hazard in the planning area
- Previous Occurrences and Extent: information on historic incidents and their impacts
- Hazard Vulnerability and Impact: discussion of the vulnerability of the region, or specific jurisdiction as appropriate, and potential impacts of identified hazards
- Future Development: potential results of future development related to hazards
- Probability of Future Occurrence: frequency of past events used to gauge the likelihood of future occurrences
- Consequence Analysis: analysis the potential impacts using set criteria

Calculated Priority Risk Index

The east-central Kansas HMPC used the calculated priority risk index (CPRI) methodology to prioritize each of the identified hazards. CPRI prioritization considers the following four elements of risk:

- Probability
- Magnitude/Severity
- Warning Time
- Duration

The following tables provide a summary for each of the risk elements, including a rationale behind each numerical rating.

	Rating	Rating Parameters
Probability	**4** Highly Likely	Event is probable within the calendar year
		Event has up to 1 in 1 year chance of occurring (1/1=100%)
		History of events is greater than 33% likely per year
		Event is "Highly Likely" to occur
	3 Likely	Event is probable within the next three years
		Event has up to 1 in 3 years chance of occurring (1/3=33%)
		History of events is greater than 20% but less than or equal to 33% likely per year
		Event is "Likely" to occur
	2 Occasional	Event is probable within the next five years
		Event has up to 1 in 5 years chance of occurring (1/5=20%)
		History of events is greater than 10% but less than or equal to 20% likely per year
		Event could "Possibly" occur
	1 Unlikely	Event is possible within the next 10 years
		Event has up to 1 in 10 years chance of occurring (1/10=10%)
		History of events is less than or equal to 10% likely per year
		Event is "Unlikely" but is possible of occurring

	Rating	Rating Parameters
Magnitude /Severity	**4** Catastrophic	Multiple deaths
		Complete shutdown of facilities for 30 or more days
		More than 50 percent of property is severely damaged
	3 Critical	Injuries and/or illnesses result in permanent disability
		Complete shutdown of critical facilities for at least two weeks
		25–50 percent of property is severely damaged
	2 Limited	Injuries and/or illnesses do not result in permanent disability
		Complete shutdown of critical facilities for more than one week
		10–25 percent of property is severely damaged
	1 Negligible	Injuries and/or illnesses are treatable with first aid
		Minor quality of life lost
		Shutdown of critical facilities and services for 24 hours or less
		Less than 10 percent of property is severely damaged

Warning Time	Rating	Rating Parameters
	4	Less than 6 hours
	3	6-12 hours
	2	12-24 hours
	1	24+ hours

Duration	Rating	Rating Parameters
	4	More than 1 week
	3	Less than 1 week
	2	Less than 1 day
	1	Less than 6 hours

Using the rankings described in the tables above, the following weighted formula was used to determine each hazard's CPRI:

(Probability x 0.45) + **(Magnitude/Severity x 0.30)** + **(Warning Time x 0.15)** + **(Duration x 0.10)**

Based on their CPRI, each hazard was assigned a planning significance category. Each planning significance category was assigned a CPRI range, with a higher score indicating greater planning criticality. The following table details planning significance CPRI ranges.

CPRI Range Planning Significance

	CPRI Range	
Planning Significance	**Low CPRI**	**High CPRI**
High	3.0	4.0
Moderate	2.0	2.9
Low	1.0	1.9

The terms high, moderate and low indicate the level of prioritization of planning effort for each hazard, and do not indicate the potential impact of a hazard occurring. Hazards rated with moderate or high planning significance were more thoroughly investigated and discussed due to the availability of data and historic occurrences, while those with a low planning significance were generally addressed due to lack of available data and historical occurrences. The following table shows previous CPRI ratings for each county. Based on discussions with the HMPC, the CPRIs were reviewed and approved or modified as required

	County Specific Hazard CPRI Planning Significance						
	Anderson	**Coffey**	**Franklin**	**Linn**	**Miami**	**Osage**	**Shawnee**
Agricultural Infestation	1.60	1.60	1.60	1.60	1.60	2.50	1.60
Civil Disorder	1.75	1.75	1.75	1.75	1.75	1.75	2.20
Dam and Levee Failure	2.05	2.05	2.05	2.35	2.20	2.25	2.50
Drought	2.65	1.90	1.90	2.50	1.90	2.80	1.75
Earthquake	1.45	1.45	1.45	1.75	1.45	1.75	1.45
Expansive Soils	1.30	1.30	1.30	1.30	1.30	1.75	1.30
Extreme Temperature	2.40	3.09	2.25	3.25	2.50	2.95	2.40
Flood	3.00	3.30	3.00	3.33	2.78	3.45	3.23
Hailstorm	3.03	3.40	3.40	3.40	3.14	2.80	3.18
Hazardous Materials	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Land Subsidence	1.45	1.45	1.45	1.45	1.45	1.30	1.45
Landslide	1.45	1.45	1.45	1.45	1.45	1.45	1.45
Lightning	1.75	1.75	1.75	1.75	1.75	3.40	1.75
Major Disease Outbreak	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Radiological	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Soil Erosion & Dust	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Terrorism, Agri-Terrorism	1.75	1.75	1.75	1.75	1.75	1.75	2.20
Tornado	2.95	2.95	2.95	2.95	2.95	3.70	3.18
Utility / Infrastructure Failure	2.75	2.10	2.80	2.84	2.63	2.85	2.85
Wildfire	3.31	3.45	3.06	3.45	3.35	2.75	3.46
Windstorm	2.45	3.05	3.13	2.90	3.31	3.35	3.20
Winter Storm	3.00	3.15	3.40	2.69	2.85	3.30	3.08

Based on the above noted county specific CPRIs, a regional CPRI was calculated for the region. The following table summarizes CPRI rating for each identified hazard.

Hazard CPRI Planning Significance

Hazard	Probability	Magnitude/ Severity	Warning Time	Duration	CPRI
Agricultural Infestation	1.29	2.00	1.00	4.00	1.73
Civil Disorder	1.14	2.00	4.00	1.00	1.81
Dam and Levee Failure	1.29	3.00	2.29	3.86	2.21
Drought	2.43	1.86	1.00	4.00	2.20
Earthquake	1.00	1.29	4.00	1.00	1.54
Expansive Soils	1.14	1.00	1.00	4.00	1.36
Extreme Temperature	3.39	2.21	1.14	3.29	2.69
Flood	3.36	3.14	2.57	3.14	3.15
Hailstorm	3.89	2.75	3.43	1.00	3.19
Hazardous Materials Event	2.00	2.00	4.00	2.00	2.30
Land Subsidence	1.00	1.00	1.86	4.00	1.43
Landslide	1.00	1.00	3.71	1.43	1.45
Lightning	2.29	1.29	3.14	1.00	1.99
Major Disease Outbreak	1.00	3.00	1.00	4.00	1.90
Radiological Event	1.00	1.00	4.00	4.00	1.75
Soil Erosion & Dust	2.00	1.00	1.00	4.00	1.75
Terrorism, Agri-Terrorism	1.14	2.00	4.00	1.00	1.81
Tornado	3.21	3.14	4.00	1.00	3.09
Utility / Infrastructure Failure	2.61	2.14	3.71	3.14	2.69
Wildfire	3.39	3.07	4.00	2.14	3.26
Windstorm	3.61	2.61	3.00	2.00	3.06
Winter Storm	3.54	2.82	2.00	3.29	3.07

Emergency Management Accreditation Program Consequence Analysis

The Emergency Management Accreditation Program (EMAP) is a voluntary review process for local emergency management program. EMAP accreditation is a means of demonstrating that a program meets national standards for emergency management programs. In an effort to foster EMAP accreditation, a consequence analysis of the potential for detrimental impacts of hazard was conducted. In this analysis the potential impacts of all 21 of the above referenced hazards have been addressed in regards to:

- Health and safety of persons in the area of the incident
- Responders
- Continuity of Operations
- Property, Facilities, and Infrastructure
- Delivery of Services

- Environment
- Economic Conditions
- Public Confidence in Governance

Available data and estimations of potential future events for each of the identified hazards was used to provide guidance for a consequence analysis. The ranking elements are categorized as Minimal, Moderate, or Severe, with a methodology for the rankings provided in the following table.

EMAP Ranking Methodology

Impact On	Minimal	Moderate	Severe
Public	Less than 5 people	Between 5 to 14 people	15 people or greater
Responders	Less than 5 people	Between 5 to 14 people	15 people or greater
Continuity of Operations	0 days	1 to 7 days	8 or greater days
Delivery of Services	Less than 1 day	1 to 7 days	8 or greater days
Property, Facilities, & Infrastructure	Less than $1.37 per capita	$1.37 to $10.00 per capita	Greater than $10.01 per capita
Environment	Less than 10%	10% to 20%	Greater than 20.01%
Economy	Less than 8% unemployment	8% to 15% unemployment	Greater than 15% unemployment
Public Confidence	Less than 1%	1.0% to 10%	Greater than 10.01%

The ratings are meant to be only a guide due to the variances that could apply such as population, location, time, hazard type, and the amount of jurisdictions within the hazard area. The results of the EMAP consequence analysis are presented in each hazard profile's Consequence Analysis Section.

3.5 REGIONAL VULNERABILITY ASSESSMENT

(ii) A description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008 must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:
(A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;
(B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate;
(C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
(iii) For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

Each identified hazard is detailed to meet the above stated criteria, including potential regional variances. For these variances, where the risk may vary on a local basis, a discussion is included identifying the unique risk or concern under the relevant hazard. In addition, a complete discussion of regional population, business, land use, special needs and development trends as part of the regional vulnerability assessment is presented in Section 2.

3.6 HISTORICAL DISASTER DECLARATIONS

The HMPC reviewed federal and state disaster declarations to assist in hazard identification. Federal and state declarations may be enacted when local governments are unable to cope with the magnitude of an event. In those cases a state disaster declaration may be issued, allowing for state assistance. In more extreme cases, when both the local and state governments' abilities are inadequate; a federal disaster declaration may be issued allowing federal assistance. These federal disaster declarations may be issued through a variety of agencies based on the scale and sectors affected.

The following information on past declared disasters is presented to provide a historical perspective on potential hazards that could impact east-central Kansas. The information was obtained from the FEMA and KDEM. Many of the disaster events reported in the following tables were multi-regional or statewide. As a result, the reported costs do not solely reflect losses to east-central Kansas. Further discussion of disasters and events may be found under the relevant hazard in the following sections.

Major Disaster Declarations

Declaration Number	Declaration Date*	Disaster Description	Regional Counties Involved	Disaster Cost**
4150	10/22/2013 (7/22/2013 - 08/16/2013)	Severe Storms, Winds, Tornados and Flooding	Coffey and Linn	-
4112	04/26/13 (02/20-23/2013)	Snowstorm	Osage	$1,269,251
4010	07/29/2011 (5/19-6/4/2011)	Severe Storms, Straight-line Winds, Tornadoes and Flooding	Osage	$8,259,620
1932	08/10/2010 (6/7-7/21/2010)	Severe Storms, Flooding and Tornadoes	Franklin, Miami and Osage	$9,279,257
1885	03/09/2010 (12/9/2009-1/8/2010)	Severe Winter Storms and Snowstorm	Anderson, Franklin, Linn, Miami, Osage and Shawnee	$19,100,658
1860	09/30/2009 (7/8-7/14/2009)	Severe Storms and Flooding	Anderson, Franklin and Linn	$3,347,662

Major Disaster Declarations, Continued

Declaration Number	Declaration Date*	Disaster Description	Regional Counties Involved	Disaster Cost**
1849	06/25/2009 (4/25-5/16/2009)	Severe Storms, Flooding, Straight-line Winds, and Tornadoes	Anderson, Coffey and Linn	$15,013,488
1848	06/24/2009 (3/26-29/2009)	Severe Winter Storm and Record and Near Record Snow	Coffey	$20,174,657
1808	10/31/2008	Severe Storms, Flooding, and Tornadoes	Anderson	$4,167,044
1776	07/09/2008	Severe Storms, Flooding, and Tornadoes	Franklin and Linn	$70,629,544
1741	02/01/2008	Severe Winter Storms	Miami, Osage, Osborne and Shawnee	$359,557,345
1711	7/2/2007 (6/26-30/2007)	Severe Storms and Flooding	Anderson, Coffey, Franklin, Linn, Miami and Osage	$40,238,600
1699	5/6/2007 (5/4/2007)	Severe Storms, Tornadoes, and Flooding	Osage and Shawnee	$117,565,269
1615	11/21/2005 (10/1-2/2005)	Severe Storms and Flooding	Shawnee	$10,286,064
1579	2/8/2005 (1/4-6/2005)	Severe Winter Storm, Heavy Rains, and Flooding	Anderson, Coffey, Franklin, Osage and Shawnee	$106,873,672
1535	8/3/2004 (6/12-7/25/2004)	Severe Storms, Flooding, and Tornadoes	Shawnee	$12,845,892
1462	5/6/2003 (5/4-30/2003)	Severe Storms, Tornadoes, and Flooding	Anderson, Miami and Osage	$988,056
1402	2/6/2002 (1/29-2/15/2002)	Ice Storm	Anderson, Coffey, Franklin, Linn, Miami, Osage and Shawnee	$60,185,754
1258	11/5/1998 (10/30-11/15/1998)	Severe Storms and Flooding	Coffey and Franklin	$16,688,650
1254	10/14/1998 (10/1-10/8/1998)	Severe Storms, Flooding, and Tornadoes	Franklin and Linn	$9,770,769

Major Disaster Declarations, Continued

Declaration Number	Declaration Date*	Disaster Description	Regional Counties Involved	Disaster Cost**
1000	7/22/1993 (6/28-10/5/1993)	Flooding, Severe Storms	Osage and Shawnee	$99,790,368
663	6/28/1982	Severe Storms, Flooding	Shawnee	$804,048
539	9/20/1977	Severe Storms, Flooding	Shawnee	$4,041,566
403	9/28/1973	Severe Storms, Tornadoes, Flooding	Coffey, Franklin, Linn, Miami, Osage and Shawnee	$4,296,913
378	5/2/1973	Severe Storms, Flooding	Coffey, Franklin, Linn, Miami, Osage and Shawnee	$1,954,624
267	7/15/1969	Tornadoes, Severe Storms, Flooding	Anderson, Franklin, Linn, Miami and Osage	$733,524
229	7/18/1967	Tornadoes, Severe Storms, Flooding	Anderson, Coffey, Franklin, Linn, Miami and Osage	$847,439
219	6/10/1966	Tornadoes, Severe Storms	Shawnee	$2,856,131

Sources: FEMA and Kansas Division of Emergency Management

* Incident dates are in parentheses.

** Disaster costs include Public Assistance and Individual Assistance for all affected counties, including those not listed

In addition, the following table presents Emergency Declarations for regional counties.

Emergency Declarations

Declaration Number	Declaration Date	Disaster Description	Regional Counties Involved	Disaster Cost
3282	12/12/2007	Severe Winter Storms	All	N/A
3236	9/1/0/2005	Hurricane Katrina Evacuation	All	N/A

Sources: FEMA and Kansas Division of Emergency Management

3.7 HAZARD PROFILES

Each identified hazard is profiled in this section, with the level of detail varying based on available information. Sources of information have been generally cited in the above sections and are specifically cited in the detailed hazard profiles below.

Each profile describes the hazard and its location, previous occurrences, potential impact, and its probability of fu ture hazard events. Additionally, the profiles explore regional vulnerability

analysis, estimates of potential losses, development in hazard prone areas and the hazard impact overview. The magnitude of the impact caused by a hazard event (actual and perceived) is related directly to the vulnerability of the people, property, and the environment. This is a function of when the event occurs, the jurisdictions and community sectors affected, the resilience of the community, and the effectiveness of the emergency response and disaster recovery efforts.

For this 2014 Hazard Mitigation update, each profile was updated with additional historical impact information, where available. The vulnerability assessment and state estimates of potential losses have been expanded for all hazards addressed in the plan where sufficient data is available. In addition, statewide flood and earthquake losses have been quantified using HAZUS-MH 2.1.

With each update of this plan, new information will be incorporated to provide for better evaluation and prioritization of the hazards that affect east-central Kansas.

The following hazards are presented in alphabetical order, and not by CPRI planning significance rating, for ease of reference.

3.7.1 AGRICULTURAL INFESTATION

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Agricultural Infestation	1.29	2.00	1.00	4.00	**1.73**

Description

Agricultural infestation is a naturally occurring infection of crops or livestock that may cause them to be unusable. Numerous factors influence the severity and longevity of agricultural infestations, including rainfall amount, drought conditions, seasonal patterns, and movement of materials. Typical causes can include:

- Fungus
- Insects
- Rodents and vermin
- Transmissible animal diseases

A reasonable level of agricultural infestation is expected by regional farmers and ranchers who have readily available methods to mitigate against the impact. However, if levels of routine infestation rapidly increase, or a novel form of infestation were to appear, normal methods of mitigation may fail to control the outbreak.

The onset of agricultural infestation can be rapid and controlling the rate of spread is important to limiting impacts. Methods to limit the rate of spread include:

- Early harvest
- Crop destruction
- Culling of a herd
- Quarantine

The duration of an infestation depends on the degree to which the infestation is controlled from the onset, but is generally over a period of weeks and months. The warning time of an infestation is affected by the timely monitoring and reporting of potential outbreaks by both the community, industry groups and governmental agencies.

Animal Disease

The east-central region has a moderate number of cattle, 263,985 as of 2007 according to the USDA National Agricultural Statistics Service. Because cattle are both raised locally and imported into the region from other localities within Kansas and other states the potential for highly contagious diseases poses a threat to the regional economy. Currently the east-central region, and the state of Kansas, is Brucellosis, Tuberculosis and Pseudorabies free. However, of concern are two economically devastating animal diseases, foot and mouth disease and bovine spongiform encephalopathy (BSE). Infection with these, and other animal diseases, could result in a decline in milk production, spontaneous abortion, and animal death. It would not only affect

farmer and ranchers, but support and related industries as well. With a medium sized agricultural industry throughout the region, the potential for infestation of livestock poses a moderate risk to the regional economy.

According to the Kansas Department of Health & Environment, Bureau of Water, Livestock Waste Management the east-central region has 27 confined animal feeding operation (CAFOs) facilities with 300 or more animal units. There have been substantial changes in the animal production industry over the past several decades, with the total number of CAFOs decreasing through consolidation resulting in operations of increasing size. This is a potential concern as high concentration of animals in proximity enhances potential transmission of disease among members of the group. Many experts fear that intentional, criminal introduction of a disease such as foot and mouth would result in very rapid spread of the disease throughout the nation and could have very severe economic consequences to the industry. The following is a list of the number of CAFOs per county in the region:

- Anderson: 5
- Coffey: 3
- Franklin: 7
- Linn: 5
- Miami: 4
- Osage: 3
- Shawnee: 0

Knowing where diseased and at-risk animals are, where they've been and when, is important to ensuring a rapid response when animal disease events take place. The Kansas Department of Agriculture (KDA), Division of Animal Health monitors and reports on animal reportable diseases. Producers are required by state law to report any of the reportable animal diseases. Additionally, the USDA and the KDA, Division of Animal Health have implemented the Animal Disease Traceability system. In order to aid in rapid reporting and identification of animal borne disease, this system establishes minimum national official identification and documentation requirements for the traceability of livestock. Animals moved interstate, unless otherwise exempt, must be officially identified and accompanied by an interstate certificate of veterinary inspection.

There are also several fatal diseases that can affect the deer or captive elk population in Kansas. These disease include Chronic Wasting Disease and Hemorrhagic Disease. There have been 48 positive cases of Chronic Wasting Disease found in Kansas since surveillance started in 1996. The exact number of deaths caused by Hemorrhagic Disease is not known, but generally 25 percent of the deer population affected with this disease die. There are no wildlife management tools or strategies available to prevent or control of these diseases other than the prevention of transport of infected deer.

Other diseases such as bovine tuberculosis and a host of detrimental parasites such as exotic lice, meningeal worms, flukes, and stomach worms are fatal to deer and are transmitted more efficiently when deer are concentrated in a small area. These diseases can seriously damage the

populations of the captive deer and elk farms and the wild deer populations but also affect the annual $350 million dollar hunting economy in Kansas.

Crop Disease and Insect Infestation

The University of Kansas Institute of Policy and Social Research reports that the value of field crops in the region averaged approximately $192,231,000 for the year 2007. This accounts for approximately 4% of the state of Kansas average of $4.9 billion year.

Field crops can be subject to infestation, including leaf rust, wheat streak mosaic, barley yellow dwarf virus, strawbreaker, and tan spot. According to the KDA, Plant Protection and Weed Control Division, the following are the highest risk crop pests to Kansas:

- Corn – Aspergillus Ear Rot (Alfatoxin)
- Soybean – Austro-Asian Rust
- Wheat – Black Stem Rust, Blast – South American strains, Stripe Rust, Leaf Rust, Karnal Bunt

Additionally, both crops in the field and harvested crops may be subject to insect infestation. The estimated damage to stored grain from the lesser grain borer, rice weevil, red flour beetle, and rusty grain beetle in the United States is approximately $500 million annually.

Tree Pests

According to the KDA, Plant Protection and Weed Control Division, the following are the highest risk plant pests by host to Kansas:

- Ash Trees – Emerald Ash Borer
- Maple, Birch, Willow, Mimosa, Ash, Sycamore & Poplar Trees – Asian Longhorned Beetle
- Walnut Trees – Thousand Cankers

The Emerald Ash Borer, a emerald green beetle that is ½ inch long, is a pest of ash trees. This pest is responsible for the destruction of approximately 20 million ash trees in the United States and Canada. In 2012 the pest was confirmed at the Wyandotte County Lake in Wyandotte County, Kansas. Immediately after confirmation by USDA, the Kansas Secretary of Agriculture implemented an emergency intrastate quarantine for Wyandotte County. Financially, the United States risks an economic loss of $20 billion to $60 billion because of this pest. According to the 2011 Kansas Forest Action Plan ash trees are the third most common species of trees, with 56.1 million (60.8 million cubic feet) green and white ash found in Kansas.

The Asian Longhorned Beetle is an exotic insect that threatens a wide variety of hardwood trees. It has not been detected in Kansas yet.

The Thousand Cankers is newly recognized disease in 2008 and first noticed in the western U.S. Currently it is located in both the east and western parts of the United States. It has not been detected in Kansas. This disease is caused by a combination of a fungus and the walnut twig beetle. There are an estimated 26.2 million (35.3 million cubic feet) black walnut trees in Kansas.

Wildlife Pests

Kansas farmers also lose a significant amount of crops each year as a result of wildlife foraging. This can be particularly problematic in areas where natural habitat has been diminished or in years where weather patterns such as early/late frost deep snow, or drought has caused the wild food sources to be limited. Wildlife pests can include:

- Birds
- Deer
- Hogs
- Rodents

Many of these wildlife pests can be controlled through simple measures including fencing, netting, baiting, and herd management through culling. According to the USDA, a particular success story has been the control of feral hogs. Feral hogs caused an estimated $1.6 billion in damage to crops, lawns, wildlife habitat and by introducing diseases to domestic animals in 2011. It is estimated that in 2006, there were 2,500 feral hogs in Kansas. As of 2012 that figure has dropped to 1,000.

	Warning Time
Agricultural Infestation	1.00

	Duration
Agricultural Infestation	4.00

Hazard Location

The entire planning area may be affected by agricultural infestation. The following table presents regional information on farms, agricultural acreage and cattle.

Farm, Crop and Livestock Information, 2007

	Number of Farms	Total Farm Acreage	Total Cropland Acreage	Pasture Acres
Region	6,880	2,164,366	1,168,890	744,452

Source: United States Department of Agriculture National Agricultural Statistics Service

Livestock Information, January 1, 2012

	Cattle	Hogs and Pigs	Horses and Ponies	Sheep and Lamb
Region	263,985	31,548	9,861	1,448

Source: United States Department of Agriculture National Agricultural Statistics Service

While rural areas within the region are more susceptible to crop and livestock infestation, urban and suburban areas are also at risk. Agricultural infestation does not cause damage to buildings or critical facilities.

Previous Occurrences and Extent

The following is a list of notable agricultural infestation events in east-central Kansas.

Summer 2012: Scrapie was found in two sheep at a regulatory slaughter test in Kansas. The sheep were from two unrelated flocks. There had not been any cases in Kansas for more than two years.

August 29, 2012: The emerald ash borer pest was confirmed at the Wyandotte County Lake in Wyandotte County, Kansas. Immediately after confirmation by USDA, the Kansas Secretary of Agriculture implemented an emergency intrastate quarantine for Wyandotte County.

2001: A major infestation of webworms attacked the State's alfalfa crop, particularly in eastern Kansas.

1989: Gray leaf spot of corn was first identified in the State in the Republican River Valley. The disease reached economic threshold levels by 1992 and has caused economic damages somewhere in the State every year from 1992 to 1998. In 1998, it was the most severe in northeast Kansas and in the irrigated areas of south central and southwest Kansas.

Hazard Vulnerability and Impact

The following table provides an indication of the potential magnitude of agricultural infestation east-central Kansas.

Total Insured Crop Insurance Paid per County from 2002-2011, Top Livestock Inventory Number and Top Crop in Acres from USDA Census 2007

County	Annualized Crop Insurance Paid for Infestation Damages	All Goats Inventory	Cattle & Calves Inventory	Hogs & Pigs Inventory	Horses & Ponies Inventory	Sheep & Lambs, Inventory, Wool Production	Corn Harvested in Acres	Forage Harvested in Acres	Sorghum for Grain Harvested in Acres	Soybeans for Beans Harvested in Acres	Wheat Harvested in Acres
Anderson	$37,001	1,568	47,714	3,806	943	452	40,350	44,492	5,292	69,383	37,954
Coffey	$20,201	977	46,132	(D)	1,363	1,448	22,845	41,435	6,805	54,720	25,801
Franklin	$16,396	577	41,293	22,662	1,882	444	21,933	41,017	4,546	53,685	21,098
Linn	$9,357	3,890	34,826	2,060	1,331	79	8,281	35,958	3,299	36,233	14,957
Miami	$4,934	715	43,635	1,657	3,416	379	20,693	54,025	2,856	41,969	11,574
Osage	$6,848	612	36,693	1,363	1,599	275	32,132	51,173	9,106	61,974	23,179
Shawnee	$2,191	720	13,692	195	1,601	266	36,332	28,003	3,476	37,426	9,681
Regional Total	$96,928	9,059	263,985	31,743	12,135	3,343	182,566	296,103	35,380	355,390	144,244

Source: USDA Risk Management Agency, 2012; and USDA National Agricultural Statistics Service, 2007

This table only reflects insured losses that were claimed. According to the 2011 Kansas Crop Insurance profile Report issued by the USDA Risk Management Agency, 82 percent of Kansas row crops were insured in 2011 (there is no information available for the 18 percent of uninsured crop losses). Data regarding the number or value of livestock and wildlife lost to disease or infestation was not available for this planning effort.

	Magnitude/Severity
Agricultural Infestation	2.00

Future Development

Data suggests that the acres of land in farms is slightly decreasing in east-central Kansas. The average regional farm acreage from 2002 to 2007 had a 4.0% decrease. However, the amount of land in the region is a fixed amount, and already a large percentage is used for agricultural purposes. In addition, certain, more urban counties within the region are experiencing population growth. As such, it is believed that the decrease in farm acreage will slow over the coming years.

Probability of Future Occurrences

The region experiences agricultural losses every year as a result of naturally-occurring diseases that impact animals/livestock and crops. However, the occurrence of large scale, economically impactful infestations has not been documented in the region. The probability of this hazard occurring in unlikely.

	Probability
Agricultural Infestation	1.29

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Agricultural Infestation Consequence Analysis

Subject	Ranking	Impacts of Agricultural Infestation
Health and Safety of Persons in the Area of the Incident	Minimal	Impact for this incidence on the Health and Safety of Persons in the area would be minimal. If the infestation is unrecognized, then there is the potential for the food supply to be contaminated.
Responders	Minimal	Impact to responders would be minimal with protective clothing, gloves, etc as these diseases cause no risk to humans.
Continuity of Operations	Minimal	Minimal expectation of execution of the COOP.
Property, Facilities, and Infrastructure	Minimal	Localized impact to facilities and infrastructure in the incident area is minimal to non-existent.
Delivery of Services	Minimal	Impacts to the delivery of services would be non-existent to minimal. Impact could be larger depending on the extent of the contaminated crop/crop loss.
Environment	Minimal to Severe	Impact could be severe to the incident area, specifically, plants, trees, bushes, and crops.
Economic Conditions	Minimal to Severe	Impacts to the economy will depend on the severity of the infestation. The potential for economic loss to the community and state could be severe if the infestation is hard to contain, eliminate, or reduce. Impact could be minimized due to crop insurance.
Public Confidence in Governance	Minimal to Severe	Confidence could be in question depending on timeliness and steps taken to warn the producers and public, and treat/eradicate the infestation.

3.7.2 CIVIL DISORDER

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Civil Disorder	1.14	2.00	4.00	1.00	**1.81**

Description

Civil disorder is a term that generally refers to a public disturbance by three or more people involving acts of violence that cause immediate danger, damage, or injury to others or their property. However, it is important to remember that gatherings in protest are recognized rights of any person or group, and this right is protected under the United States Constitution.

Civil disorder can take many shapes, including demonstrations, civil unrest, public disorder, and riots. These events may happen for a number of reasons, including:

- Economic hardships
- Social injustices
- Objections to organizations or governments
- Political grievances
- Ideological grievances

An event can be triggered by a single or combination of causes, with demonstrations ranging from simple, nonviolent protests to events that turn into full-scale riots. Most protesters are law-abiding citizens who intend that their protests be nonviolent, but some individuals or groups within an organized demonstration may have the intent to cause disruption, incite violence, destroy property, and/or provoke the authorities. Violence is often the result of demonstrators beginning to conduct unlawful or criminal acts and authorities enforcing the laws of the municipality, state, or nation.

A crowd is defined as a large number of persons gathered temporarily together. There are many types of crowds which are based on their reasons for getting together

- **Causal crowds**: This type has no common bond other than the immediate reason for being present. An example would be a football game or a symphony orchestra performance where the only bond is enjoyment.
- **Planned crowds**: Planned crowds are likely to be more organized. A leader will call a meeting to establish a goal in which members have a common interest.
- **Mob**: The extreme crowd behavior is a mob. A mob is a crowd whose members have lost their concern for law and authority and follow their leaders into unlawful and disruptive acts.

Normally, when a crowd is orderly, not violating any laws and not causing a threat to life or property it does not represent a problem. Crowds, however, are subject to control by skillful troublemakers and therefore capable of violence and disregard for law and order. If problems exist, they usually fall into the following three categories:

- Public disorder: Public disorder is a basic breach of civic order. Individuals or small groups assembling have a tendency to disrupt the normal flow of things around them.
- Public disturbance: Public disturbance is designed to cause turmoil on top of the disruption. Individuals and groups assembling into a crowd begin chanting, yelling, singing, and voicing individual or collective opinions.
- Riot: A riot is a disturbance that turns violent. Assembled crowds become a mob that violently expresses itself by destroying property, assaulting others, and creating an extremely volatile environment.

In general, civil disorder has some important similarities. Most disturbances start from minor incidents and can spread quickly and gain in strength and force. Any crowd, regardless of its purpose, is a potentially violent group. As such, there is very little warning time for a crowd to turn violent. However, with effective law enforcement the duration of a civil unrest event would likely be very short.

	Warning Time
Civil Disorder	4.00

	Duration
Civil Disorder	1.00

Hazard Location

In the United States, civil disorder has been most commonly associated with urban areas and college campuses. And while the entire planning area may be affected by civil disorder, with its generally small population and low population density, the magnitude of such an event would likely be limited to the major cities within the region.

With human-caused hazards such as this that can have multiple variables involved, increases in development and increases in the replacement cost of the built environment can be factors that increase the cost of the event. The cost for such an event is largely related to the location and the level of violence the crowd chooses.

Previous Occurrences and Extent

There have been no notable previous occurrences in east-central Kansas which could be described as Civil Disorder.

Hazard Vulnerability and Impact

Economic impacts and human injury or death are the primary concern with civil disorder. Increases in population or the hosting of major political, economic or social events could increase the likelihood and severity of a civil disturbance.

In general, it is difficult to quantify potential losses of Civil Disorder due to the many variables and human elements and lack of historical precedence. Therefore, for the purposes of this plan, the loss estimates will take into account a hypothetical scenario. **Please note that the hypothetical scenario is included for illustrative purposes only.**

> **Event:** City organizers set up a two-block long fan zone near the local sporting arena. Two big screen TVs were set up for fans to watch the game. Temporary fences and gates were set up to provide checkpoints where police could control access to the area and check for alcohol. Crowds, estimated to be at 15,000 people, had been generally well-behaved in the fan zone, however people found ways to enter the zone without being checked for alcohol. Planned corridors to allow movement of emergency vehicles became impassable.
>
> **Riot:** The riot began to take shape as the game came to a close, with some spectators throwing bottles and other objects at the large screens in the viewing area. Flags and jerseys were set alight, and soon some rioters overturned a vehicle A group was heard chanting "let's go riot" as early as the first period of the game were among those responsible for flipping the first car. People began jumping on the car that had been first overturned, and then it was set afire. Fist fights broke out when people standing on porta-potties fell when others tipped them over. With a crowd of onlookers chanting "burn the truck", a second vehicle in the same area was set on fire. Firemen were able to put it out, but the truck was again set alight after it was overturned. In a nearby parking lot, two police cars were later also set on fire. Riot police eventually managed to disperse the rioters.
>
> **Results:** Thirty people required hospitalization for non-life threatening injuries. Numerous rioters had injuries that did not require hospitalization. The Police Department made 300 arrests during the riot. The majority were arrested for disturbing the peace, with additional arrests for public intoxication, breaking and entering, assault and theft. In total, 27 cars were burned, including police cars. Windows were smashed in local businesses along the fan zone corridor, some of which were also looted. After event estimates suggested the losses due to vandalism, theft, and damage to property to be nearly $5 million.

	Magnitude/Severity
Civil Disorder	2.11

Future Development

Future development and population increases would tend to increase the likelihood of a civil disorder event. In addition, future migration to larger cities, such as Topeka in Shawnee County, may also increase the likelihood of a civil disorder event.

Probability of Future Hazard Events

While civil disorder is a fairly rare event, when they do occur they are extremely disruptive and difficult to control. The City of Topeka in Shawnee County is particularly susceptible due to its venues for large gatherings and events and the presence of a the state government. It is possible that east-central Kansas will experience marches, protests, demonstrations, and gatherings in various cities and communities that could lead to some type of civil disorder. However, based on the region's general lack of history of civil disturbance and the various human factors noted above, the probability that such incidents will develop into full-scale events is considered unlikely.

	Probability
Civil Disorder	1.14

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Consequence Analysis of Civil Disorder

Subject	Ranking	Impacts of Civil Disorder
Health and Safety of Persons in the Area of the Incident	Severe	Impact could be severe for persons in the incident area.
Responders	Minimal to Severe	Impact to responders could be severe if not trained and properly equipped. Responders that are properly trained and equipped will have a low to moderate impact.
Continuity of Operations	Minimal to Severe	Depending on damage to facilities/personnel in the incident area, re-location may be necessary and lines of succession execution.
Property, Facilities, and Infrastructure	Severe	Impact within the incident area could be severe for explosion, moderate to low for Hazmat.
Delivery of Services	Minimal to Severe	Delivery of services could be affected within and around the affected area especially if communications, road and railways, and facilities incur damage.
Environment	Minimal to Severe	Localized impact within the incident area could be severe depending on the type of human caused incident.
Economic Conditions	Minimal to Severe	Economic conditions could be adversely affected and dependent upon time and length of clean up and investigation.
Public Confidence in Governance	Minimal to Severe	Impact will be dependent on whether or not the incident could have been avoided by government or non-government entities, clean-up and investigation times, and outcomes.

3.7.3 DAM AND LEVEE FAILURE

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Dam and Levee Failure	1.29	3.00	2.29	3.86	**2.21**

Description

A dam is defined by the National Dam Safety Act as an artificial barrier that impounds or diverts water and is more than 6 feet high and stores 50 acre feet or more or is 25 feet or more high and stores more than 15 acre feet. Dams are usually engineered to withstand a flood with a computed risk of occurrence. If a larger flood occurs, then that structure will likely be overtopped. If during the overtopping the dam fails or is washed out, the water behind it is released as a flash flood. Failed dams can create floods that are catastrophic to life and property because of the tremendous energy of the released water. However, dams are complicated structures, and it can be difficult to predict how a structure will respond to distress. Dams can fail for one or a combination of the following reasons:

- Overtopping caused by floods that exceed the capacity of the dam.
- Deliberate acts of sabotage.
- Structural failure of materials used in dam construction.
- Movement and/or failure of the foundation supporting the dam.
- Settlement and cracking of concrete or embankment dams.
- Piping and internal erosion of soil in embankment dams.
- Inadequate maintenance and upkeep.

There are two categories to describe dam failure.

- **Rainy day failure** involves periods of excessive precipitation leading to an unusually high runoff. This high runoff increases the reservoir of the dam and if not controlled, the overtopping of the dam or excessive water pressure can lead to dam failure. Normal storm events can also lead to rainy day failures if water outlets are plugged with debris or otherwise made inoperable.

- **Sunny day failures** occur due to poor dam maintenance, damage/obstruction of outlet systems, or vandalism. This is the worst type of failure and can be catastrophic because the breach is unexpected and there may be insufficient time to properly warn downstream residents.

Even though both types of failures can be disastrous, it can be assumed that a sunny day failure would be more catastrophic due to its unanticipated occurrence and the lack of time to warn residents downstream.

Over 95 percent of dams are non federal, with most being owned by state governments, municipalities, watershed districts, industries, lake associations, land developers, and private citizens. Dam owners have primary responsibility for the safe design, operation, and

maintenance of their dams. They also have responsibility for providing early warning of problems at the dam, for developing an effective emergency action plan, and for coordinating that plan with local officials.

State-Regulated Dams

In Kansas, the State has regulatory jurisdiction over non-federal dams that meet the following definition of a "jurisdictional" dam as defined by K.S.A. 82a-301 et seq, and amendments thereto:

- *any artificial barrier including appurtenant works with the ability to impound water, waste water or other liquids that has a height of 25 feet or more; or has a height of six feet or greater and also has the capacity to impound 50 or more acre feet. The height of a dam or barrier shall be determined as follows: (1) A barrier or dam that extends across the natural bed of a stream or watercourse shall be measured from the downstream toe of the barrier or dam to the top of the barrier or dam; or (2) a barrier or dam that does not extend across a stream or watercourse shall be measured from the lowest elevation of the outside limit of the barrier or dam to the top of the barrier or dam.*

The KDA Division of Water Resources (KDA-DWR) is the State agency responsible for regulation of jurisdictional dams. Within the Division of Water Resources, the Water Structures Program has the following Responsibilities: reviewing and approving of plans for constructing new dams and for modifying existing dams, ensuring quality control during construction, and monitoring dams that, if they failed, could cause loss of life, or interrupt public utilities or services

Dam classifications have been developed to describe the level of risk associated with dam failure. These classifications do not reflect the physical condition of the dams, but rather describe areas downstream of the dams that could be impacted in the event of failure, which is generally unlikely. The KDA-DWR classifies jurisdictional dams as follows:

- **Class A (low hazard)**: A dam located in an area where failure could damage only farm or other uninhabited buildings, agricultural or undeveloped land including hiking trails, or traffic on low-volume roads that meet the requirements for hazard class A dams.

- **Class B (significant hazard)**: A "hazard class B dam" means a dam located in an area where failure could endanger a few lives, damage an isolated home, damage traffic on moderate volume roads that meet the requirements for hazard class B dams, damage low-volume railroad tracks, interrupt the use or service of a utility serving a small number of customers, or inundate recreation facilities, including campground areas intermittently used for sleeping and serving a relatively small number of persons.

- **Class C (high hazard)**: A "hazard class C dam" shall mean a dam located in an area where failure could result in any of the following: extensive loss of life, damage to more than one home, damage to industrial or commercial facilities, interruption of a public

utility serving a large number of customers, damage to traffic on high-volume roads that meet the requirements for hazard class C dams or a high-volume railroad line, inundation of a frequently used recreation facility serving a relatively large number of persons, or two or more individual hazards described in hazard class B. Emergency Action Plans (EAPs) are required for all High Hazard Dams.

Levees

A levee is an artificial barrier, usually an earthen embankment, constructed along rivers to protect adjacent lands from flooding. Generally, a levee is subjected to water loading (a high water event) only a few days or weeks each year, unlike a dam that is retaining water most of the year. Floodwalls are concrete structures, often components of levee systems, designed for urban areas where there is insufficient room for earthen levees.

Levees are usually engineered to withstand a flood with a computed risk of occurrence. When a larger flood occurs and/or levees and floodwalls and their structures are stressed beyond their capabilities to withstand floods, levee failure can result in loss of life and injuries as well as damages to property, the environment, and the economy.

A levee breach results when a portion of the levee breaks away, providing an opening for water to flood the landward side of the structure. Such breaches can be caused by surface erosion due to water velocities, or they can be the result of subsurface actions. Levee overtopping is similar to dam overtopping in that the flood waters simply exceed the design capacity of the structure. Such overtopping can lead to erosion on the land side which can lead to breaching. In order to prevent this type land side erosion, many levees are reinforced with rocks or concrete.

For purposes of the levee failure hazard profile and risk assessment in this hazard mitigation plan, levees in Kansas will be discussed in four categories:

1. Levees in the United States Army Corps of Engineers (USACE) Levee Safety Program
2. FEMA Accredited Levees
3. Levees that are both in the USACE Levee Safety Program and Accredited by FEMA
4. All other levees

In terms of assessing risk, levees in categories 1, 2, and 3 all undergo or have undergone some sort of inspection, certification, or accreditation that indicates the level of protection and/or structural integrity of the levee system. However, the levees in the category 4 may not be regularly monitored or inspected.

Levees in the USACE Levee Safety Program

The USACE created the Levee Safety Program (LSP) in 2006 to assess the integrity and viability of levees and to make sure that levee systems do not present unacceptable risks to the public, property, and environment. Under the Levee Safety Program, USACE conducts levee inspections (routine, periodic and special event). During these inspections, deficiencies may be identified

such as unsatisfactory culverts, non-compliant vegetation, encroachments, and animal burrows. USACE uses inspection findings to "rate" levee systems to determine compliance with operation and maintenance requirements, understand the overall levee condition, and determine eligibility for federal rehabilitation assistance under P.L. 84-99.

According to the National Levee Database (NLD) managed by USACE, there are currently 15 identified levees in east-central Kansas. Seven of the identified levees are not rated, and eight are rated Minimally Acceptable.

FEMA Accredited Levees

Many levees shown on effective Flood Insurance Rate Maps (FIRM) were mapped in the 1970s and 1980s and have never been remapped by FEMA. Prior to 1986, levees were shown on FIRMs as providing protection from the base flood when they were designed and constructed in accordance with sound engineering practices. Since 1986, levees have been shown as accredited on FIRMs only when they meet the requirements of 44 CFR 65.10 "Mapping Areas Protected by Levee Systems", including certification by a registered professional engineer or a Federal agency with responsibility for levee design.

Levees that do not meet the requirements of 44 CFR 65.10 cannot be shown as accredited on a FIRM. Furthermore, floodplain areas behind the levee are at risk to base flood inundation and are mapped as high risk areas subject to FEMA's minimum floodplain management regulations and mandatory flood insurance purchase requirement.

In 2004, as it initiated work under the Flood Map Modernization Initiative (Map Mod), FEMA determined that analysis of the role of levees in flood risk reduction would be an important part of the mapping efforts. A report issued in 2005 noted that the status of the nation's levees was not well understood and the condition of many levees and floodwalls had not been assessed since their original inclusion in the NFIP. As a result, FEMA established policies to address existing levees.

FEMA Accredited levees generally fall into two types:

- Levees mapped on Digital Flood Insurance Rate Maps (DFIRM) since the Flood Map Modernization Initiative
- Levees, mapped prior to the Flood Map Modernization Initiative and are not mapped on DFIRMs.

As DFIRMs are developed, levees fall under one of the three following categories:

- **Accredited Levee** : With the exception of areas of residual flooding (interior drainage), if the data and documentation specified in 44 CFR 65.10 is readily available and provided to FEMA, the area behind the levee will be mapped as a moderate-risk area. There is no mandatory flood insurance purchase requirement in a moderate-risk area, but flood insurance is strongly recommended.

- **Provisionally Accredited Levee (PAL)**: If data and documentation is not readily available, and no known deficiency precludes meeting requirements of 44 CFR 65.10, FEMA can allow the party seeking recognition up to two years to compile and submit full documentation to show compliance with 44 CFR 65.10. During this two-year period of provisional accreditation, the area behind the levee will be mapped as moderate-risk with no mandatory flood insurance purchase requirement.

- **De-Accredited Levees**: If the information established under 44 CFR 65.10 is not readily available and provided to FEMA, and the levee is not eligible for the PAL designation, the levee will be de-accredited by FEMA. If a levee is de-accredited, FEMA will evaluate the level of risk associated with each non-accredited levee through their Levee Analysis Mapping Procedures (LAMP) criteria to consider how to map the floodplain and which areas on the dry side of the levee will be shown as high risk. The mapping will then be updated to reflect this risk..

According to the Mid-Term Levee Inventory, the following counties have accredited levees in DFIRM:

- Franklin County
- Miami County
- Shawnee County

FEMA Accredited Levees not Mapped on DFIRMs

Throughout the early days of the National Flood Insurance Program (NFIP), little guidance was available associated with the inclusion of existing levees. Decisions were made on whether to accredit hundreds of levees across Kansas. Because there were no levee standards and accreditation of a levee was left largely to the judgments of the study contractors, many levees were accredited as providing flood protection even though they would not meet the current NFIP levee standards as stated in 44 CFR 65.10.

During subsequent re-mapping, many of these levees were re-evaluated and accredited as providing flood protection, but do not meet the standards of 44 CFR 65.10. Additionally, some levees, originally indicated as accredited have never been re-evaluated. If levees are depicted on the paper FIRMS in counties that have not been re-mapped on DFIRMs, their protection level has not been re-evaluated. Until re-evaluation occurs, these levees are considered accredited.

This information was obtained by comparing the levees in the Mid-term Levee Inventory indicated as showing protection on the FIRM against the list of counties that have effective DFIRMs.

All Other Levees

There are also levees throughout the State that are intended to mitigate low-level flooding and/or protect agricultural land that are not in the USACE Levee Safety program. Additionally, since

these levees are not intended to protect populations or development from flooding from the 1% annual chance flood, they are not, nor seek to be accredited by FEMA for flood insurance purposes. These levees may provide a false sense of security to residents behind these levees. Additionally, these levees may not be routinely inspected by levee owners. There is no agency with regulatory authority over these levees.

According to comparative analysis of the MLI and NLD, there are currently 39 levees that are not accredited by FEMA or in the USACE Levee Safety Program. Shawnee county is identified as having some of these unaccredited levees. There are also likely many more levees, such as agricultural levees that have not been inventoried. Populations and development behind these levees could be considered to be at a higher risk since there are no requirements for these levees to be routinely inspected and/or certified.

The inventory of levees has been compiled from the USACE NLD as well as the FEMA MLI. Please note that there may be some duplication as the names of the levees as well as the segmentation of the levees is not consistent in both inventories.

In general, dam and levee failures occur with some warming, with the exception of sunny day failures. Additionally, while the effects can be catastrophic, the duration is generally short.

	Warning Time
Dam and Levee Failure	2.29

	Duration
Dam and Levee Failure	3.86

Hazard Location

At the time this plan was developed there were 539 state-regulated jurisdictional dams in east-central Kansas. Of those, 33 were Class C (High Hazard Dams), 22 were Class B (Significant Hazard Dams), and 484 were Class A (Low Hazard Dams).

Number of State Regulated Dams by Hazard Class in Region

County	Low Hazard Dams	Significant Hazard Dams	High Hazard Dams	High Hazard Dams Without Emergency Action Plan	Total Dams
Anderson	52	1	1	1	54
Coffey	54	2	1	1	57
Franklin	66	2	2	2	70
Linn	66	6	9	7	81
Miami	64	2	4	3	70
Osage	43	6	5	1	54
Shawnee	139	3	11	6	153
Regional Total	**484**	**22**	**33**	**21**	**539**

Source: Kansas Department of Agriculture, Division of Water Resources, Water Structures Program, 2012

The following is a discussion of select high hazard dams within the region. It is worth noting that a many of these dams did not have inundation data completed, or the information is considered classified.

Cedar Creek Reservoir, Anderson County: The Emergency Action Plan (EAP) for the Cedar Creek Reservoir Dam, dated May 18, 2010, indicates that the Cedar Creek Reservoir is located in unincorporated Anderson County, and is owned and operated by the City of Garnett. The dam is located along Cedar Creek approximately 3.5 miles southwest of the City of Garnett. The dam is a zoned embankment with rock, shale, and earthen fill that was constructed in 1984 by the City of Garnett. The embankment is 70-feet tall, 1,750 feet in length, and impounds a reservoir containing 4,400 acre feet of water at normal pool with a maximum pool capacity of 24,000 acre-feet at the top of the dam. The EAP states that a major flood caused by a sudden breach of the dam could inundate homes located along NW 1700 Road, NW 1800 Road, and along Highway 31. Two paved roads, Paved Road 1 and Highway 31, may also be impacted. There was no indication on the inundation map or from Anderson County Emergency Management that the incorporated City of Garnett would be impacted by flood waters resulting from a breach of the dam.

John Redmond Dam, Coffey County: The dam was constructed in 1959 and completed in 1963, on the Neosho River at river mile 343.7, about three miles north-west of Burlington. The primary purpose of the dam was flood control, with secondary purposes of water supply and recreation.

Council Grove Dam, Coffey County: The dam is located one mile northwest of Council Grove in Morris County. The rolled earth-fill embankment is 6,500 feet long and rises 96 feet above the stream bed. A roadway crosses the embankment and spillway. The dam was constructed for flood control, water supply, water quality control, and recreation.

Melvern Dam, Osage County: This high hazard dam on Melvern Lake is owned and maintained by the USACE. The lake is on the Marais des Cygnes River at river mile 175.4 , about four miles west of Melvern, with the dam located on the eastern edge. The dam is 9,650 feet long and 105 feet high, constructed of rolled earth fill and two hydraulically operated gates. Farmland, and approximately ten associated structures surround this dam.

Pomona Dam, Osage County: This high hazard dam is on Pomona Lake and maintained by the USACE. The lake is on 110 Mile Creek with the dam located on the southeast edge of the lake. The dam is 7,750 feet long and 83 feet high. The dam is largely surrounded by open space and farmland.

Osage City Dam, Osage County: This high hazard dam, owned and operated by the City of Osage, was built in 1940 and is located to the south of Osage City. The dam is 1,655 feet long and 29 feet high with a maximum discharge of 7,882 acre feet. According to the EAP there are three homes and a significant amount of farmland in the floodplain.

.

City of Overbrook Dam, Osage County: This high hazard dam, located on Overbrook City Lake, is owned and operated by the City of Overbrook. The EAP for the dam indicated there are no structures that would be affected by floodwaters from a breach or failure. The dam is 200 feet long and 22 feet high.

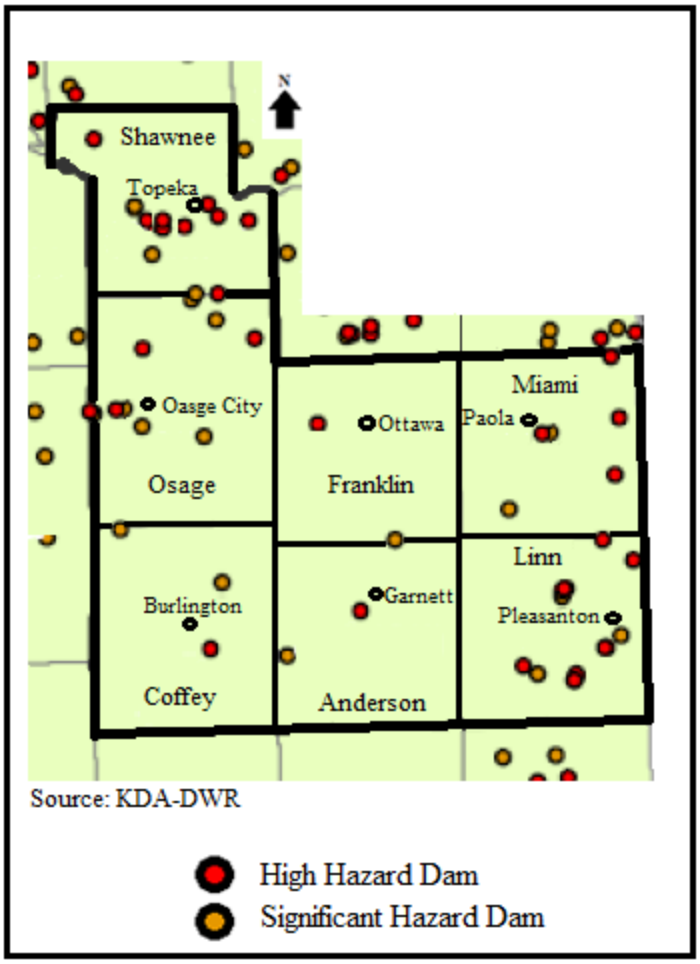
Lake Shawnee Dam, Shawnee County: This dam is owned and operated by Shawnee County and was constructed in 1937. An EAP for this dam was unavailable for review.

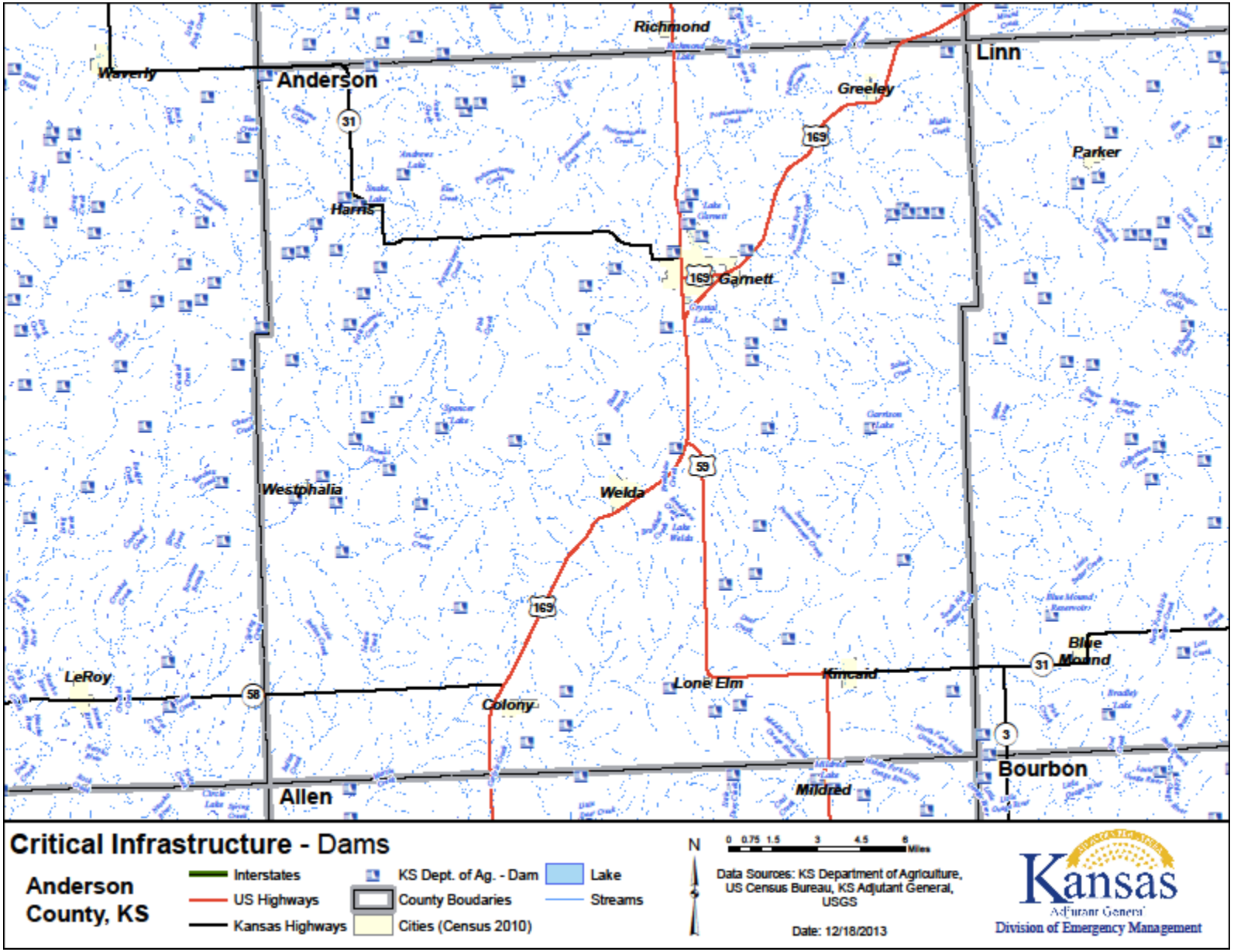
Lake Sherwood Dam, Shawnee County: This dam is subject to state regulations and is owned and operated by the Sherwood Lake Club, and was constructed in 1964. An EAP for this dam was unavailable for review.

City of Topeka (unnamed dam), Shawnee County: This dam is owned and operated by the City of Topeka, and was constructed in 1977. An EAP for this dam was unavailable for review.

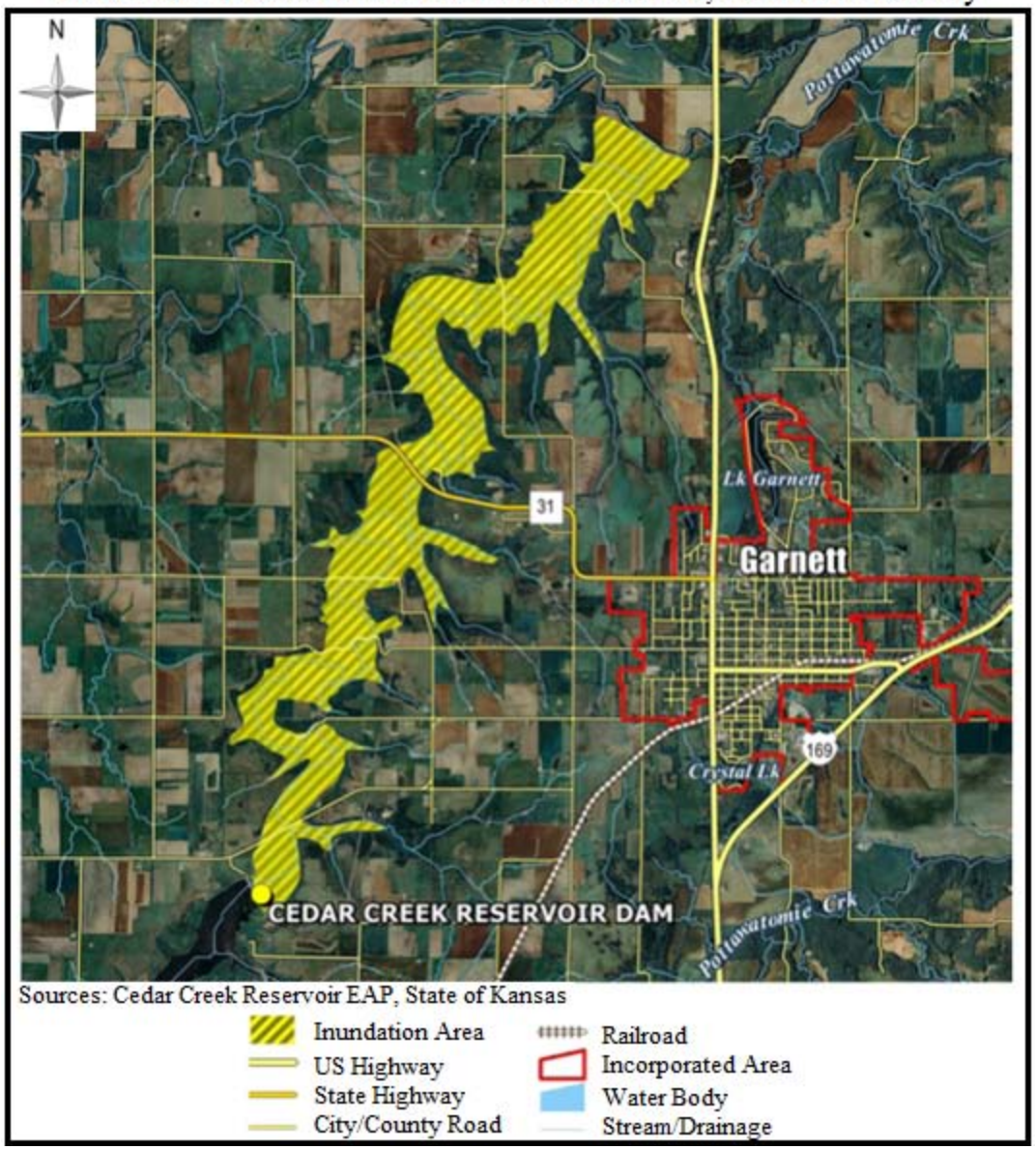
The following maps shows dam locations in participating counties and, if available, potentially impacted cities within east-central Kansas. In addition, available location and/or inundation maps for high hazard dams within the region have been included. Please note that information relate dto dams may have been classified and unable for review.

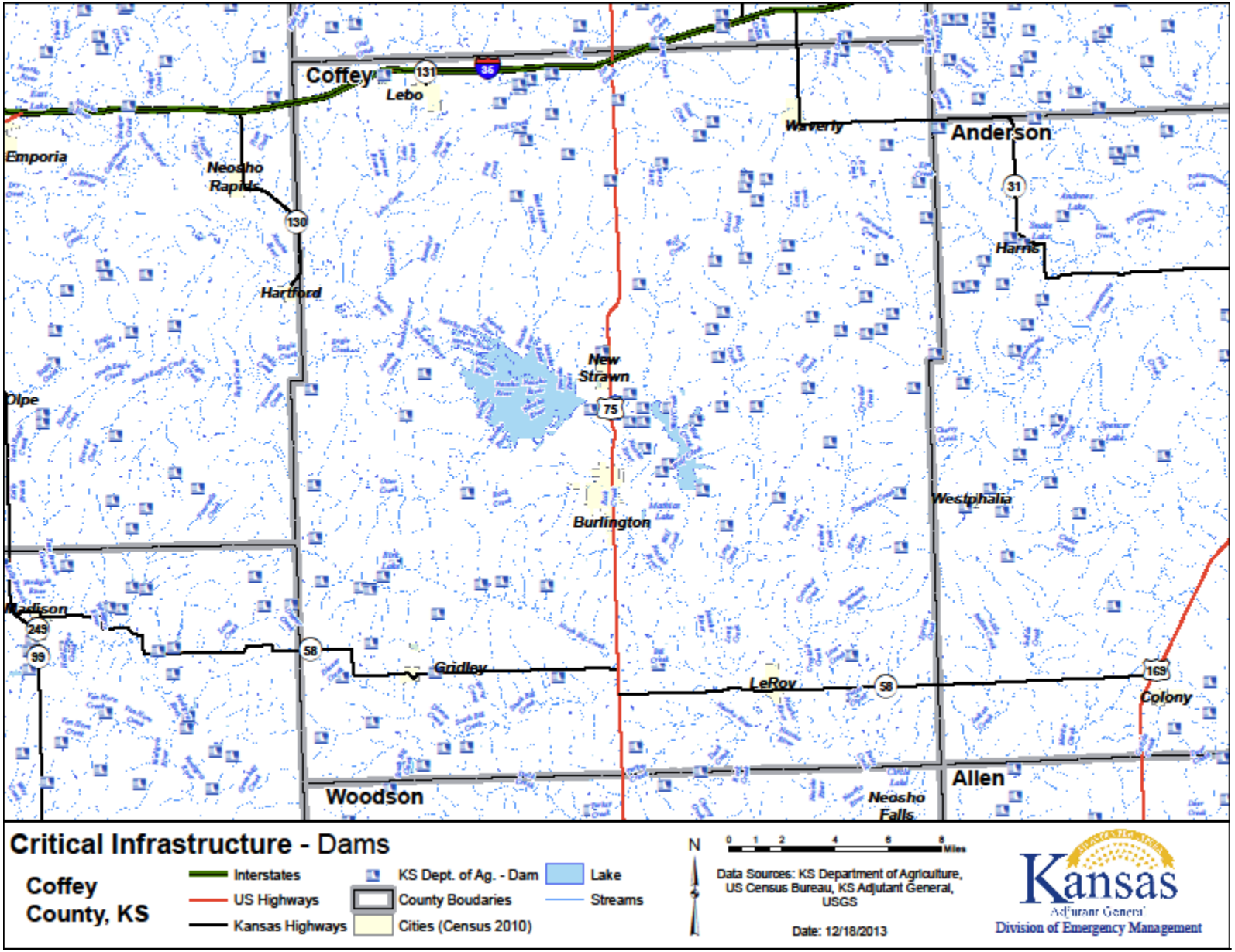
Regional Significant and High Hazard Dams



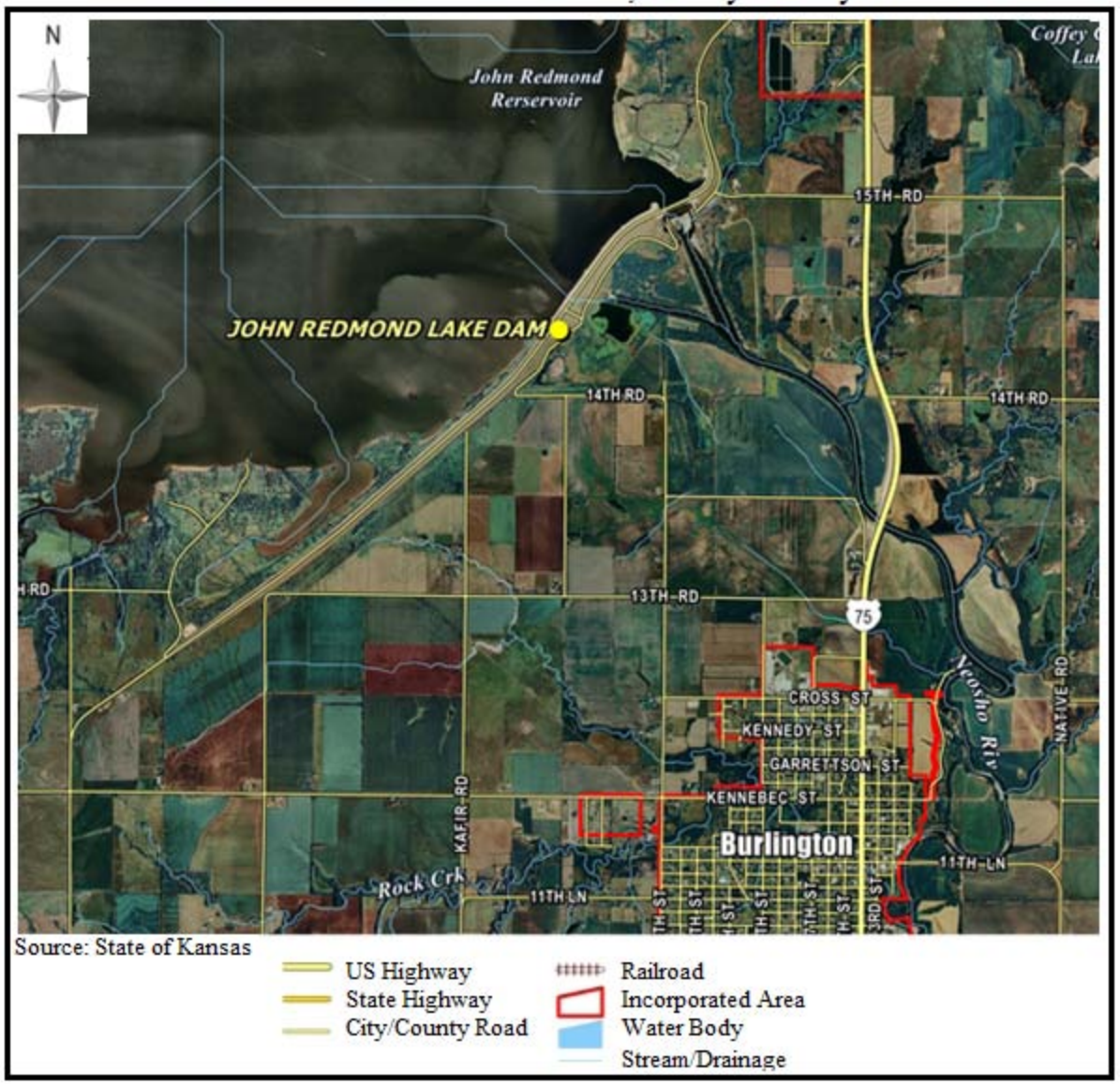

Richmond
Linn
Waverly
Anderson
Greeley
Parker
Harris
Garnett
Westphalia
Welda
LeRoy
Colony
Lone Elm
Kincaid
Blue Mound
Bourbon
Allen
Mildred
Critical Infrastructure - Dams
Anderson County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Dam
County Boudaries
Cities (Census 2010)
Lake
Streams
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management

Cedar Creek Reservoir Dam Inundation Area, Anderson County




Coffey
Lebo
Waverly
Anderson
Emporia
Neosho Rapids
Harris
Hartford
New Strawn
Olpe
Burlington
Westphalia
Madison
Gridley
LeRoy
Colony
Woodson
Allen
Neosho Falls
Critical Infrastructure - Dams
Coffey County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Dam
County Boudaries
Cities (Census 2010)
Lake
Streams
N
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management

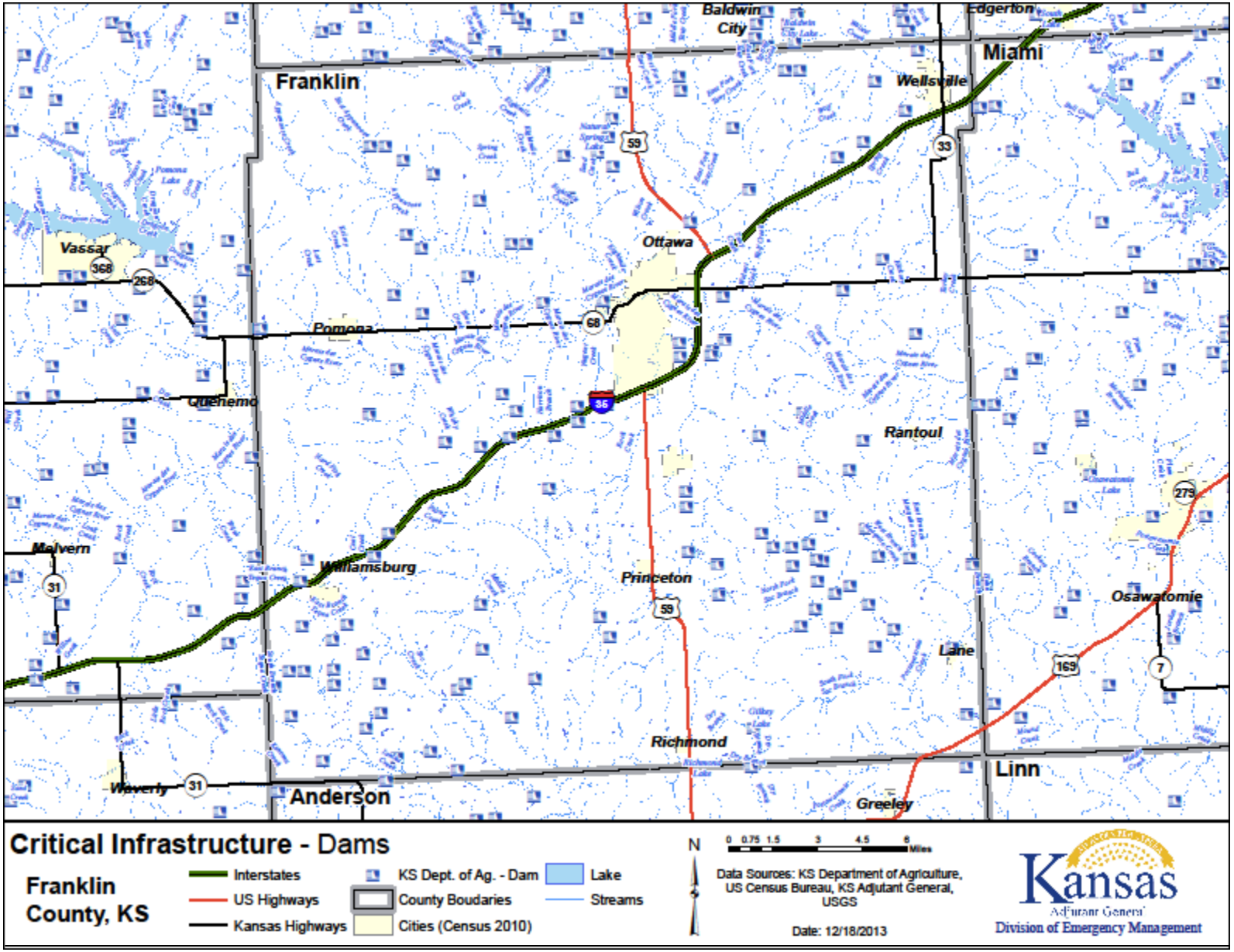
John Redmond Lake Dam, Coffey County

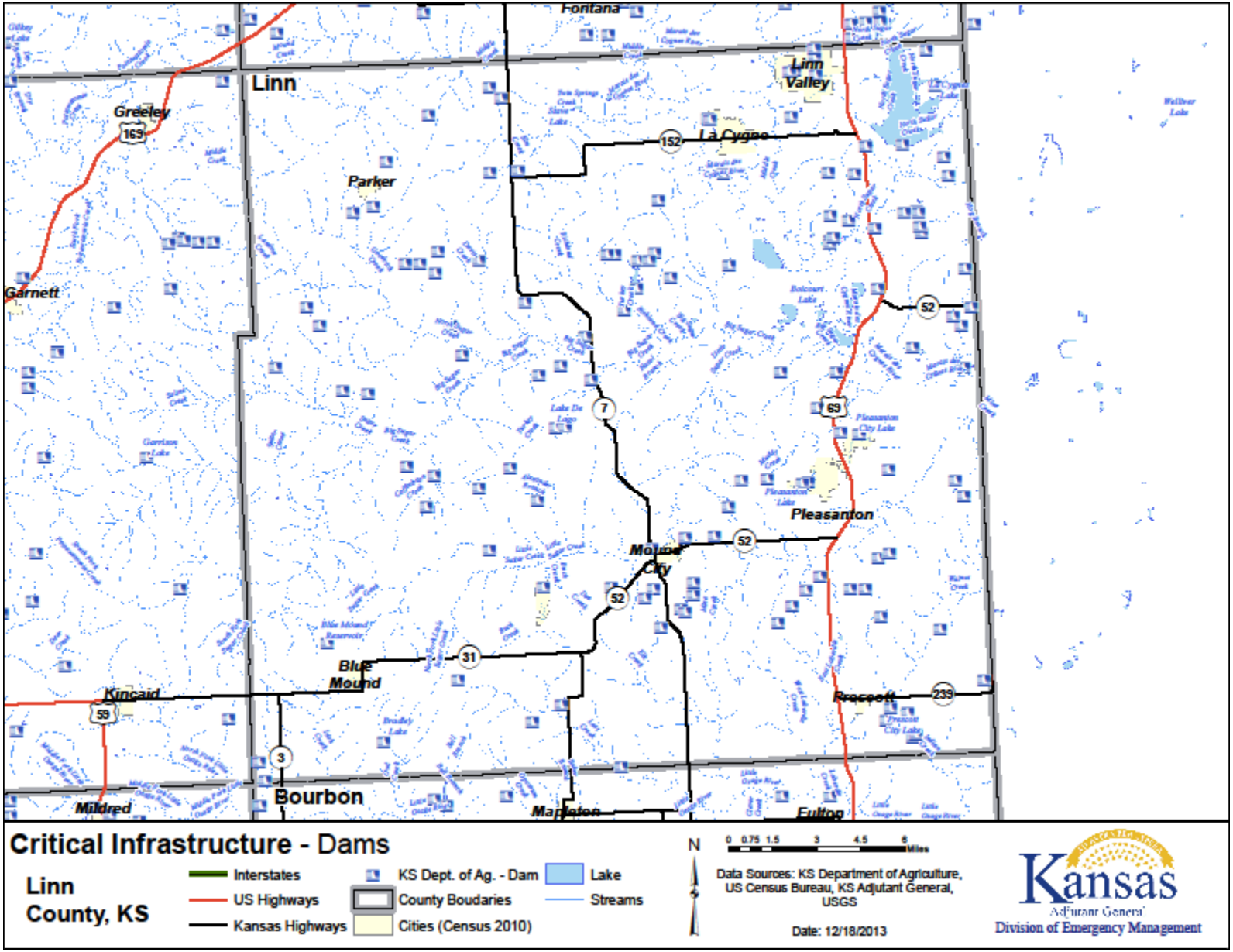


Wolf Creek Cooling Unit #1 Dam, Coffey County

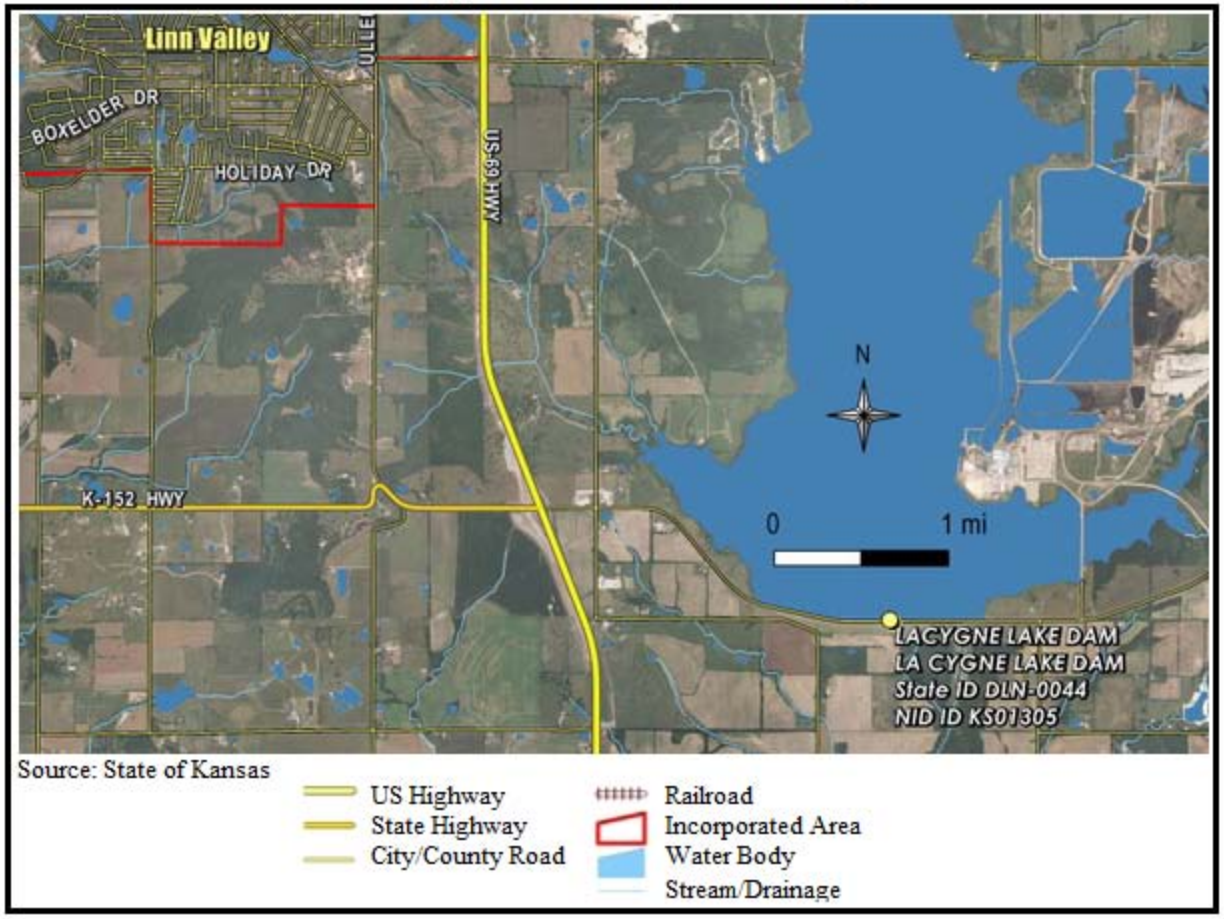


Source: State of Kansas

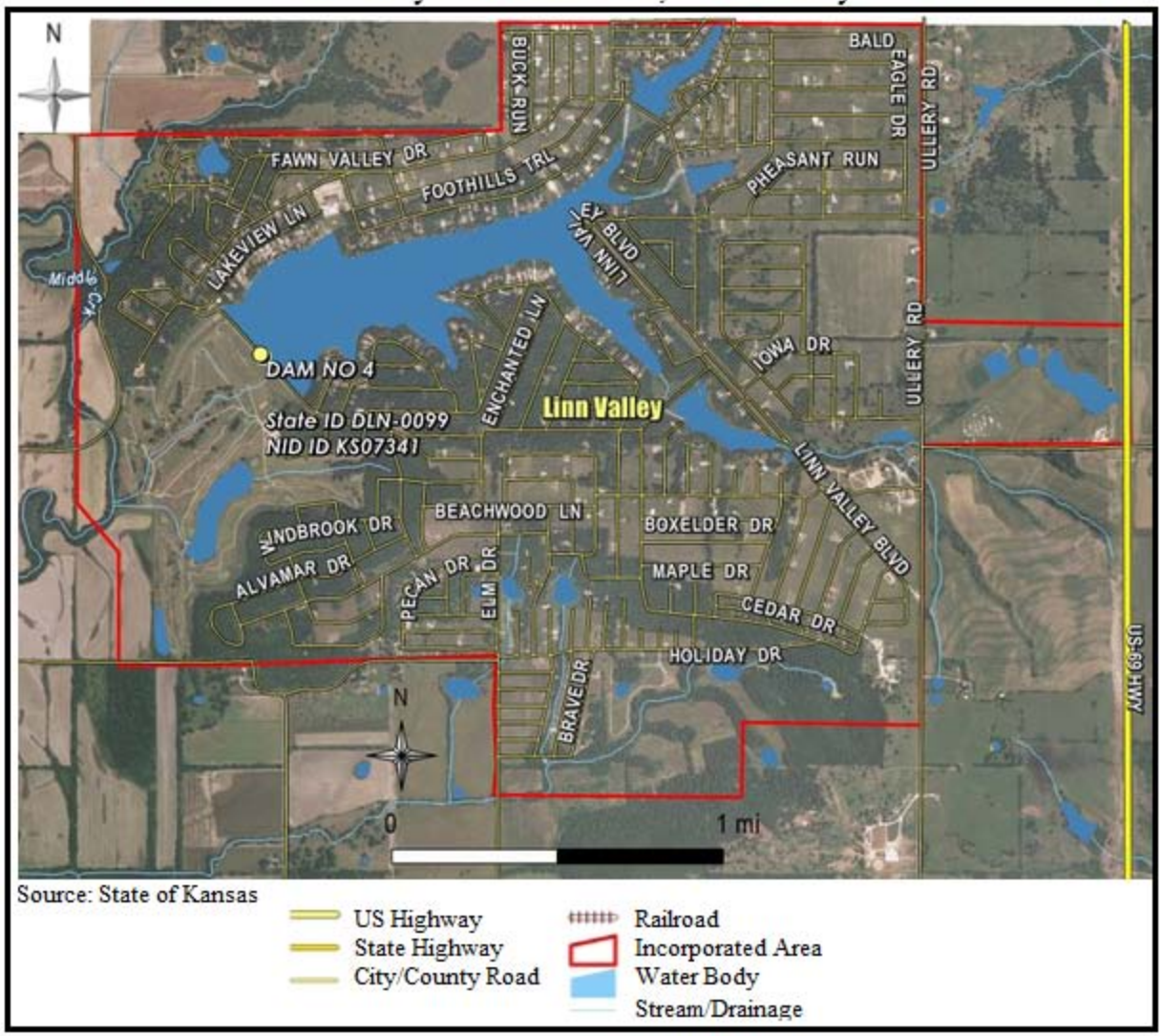

Baldwin City
Edgerton
Franklin
Miami
Wellsville
Ottawa
Vassar
Pomona
Quenemo
Rantoul
Malvern
Williamsburg
Princeton
Osawatomie
Lane
Richmond
Linn
Waverly
Anderson
Greeley
Critical Infrastructure - Dams
Franklin County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Dam
County Boudaries
Cities (Census 2010)
Lake
Streams
N
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management


Fontana
Linn
Linn Valley
Greeley
163
Parker
La Cygne
152
Garnett
52
7
69
Pleasanton
Mound City
52
52
31
Blue Mound
Kincaid
59
Prescott
239
3
Bourbon
Mildred
Mapleton
Fulton
Critical Infrastructure - Dams
Linn County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Dam
County Boudaries
Cities (Census 2010)
Lake
Streams
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management

La Cygne Lake Dam, Linn County



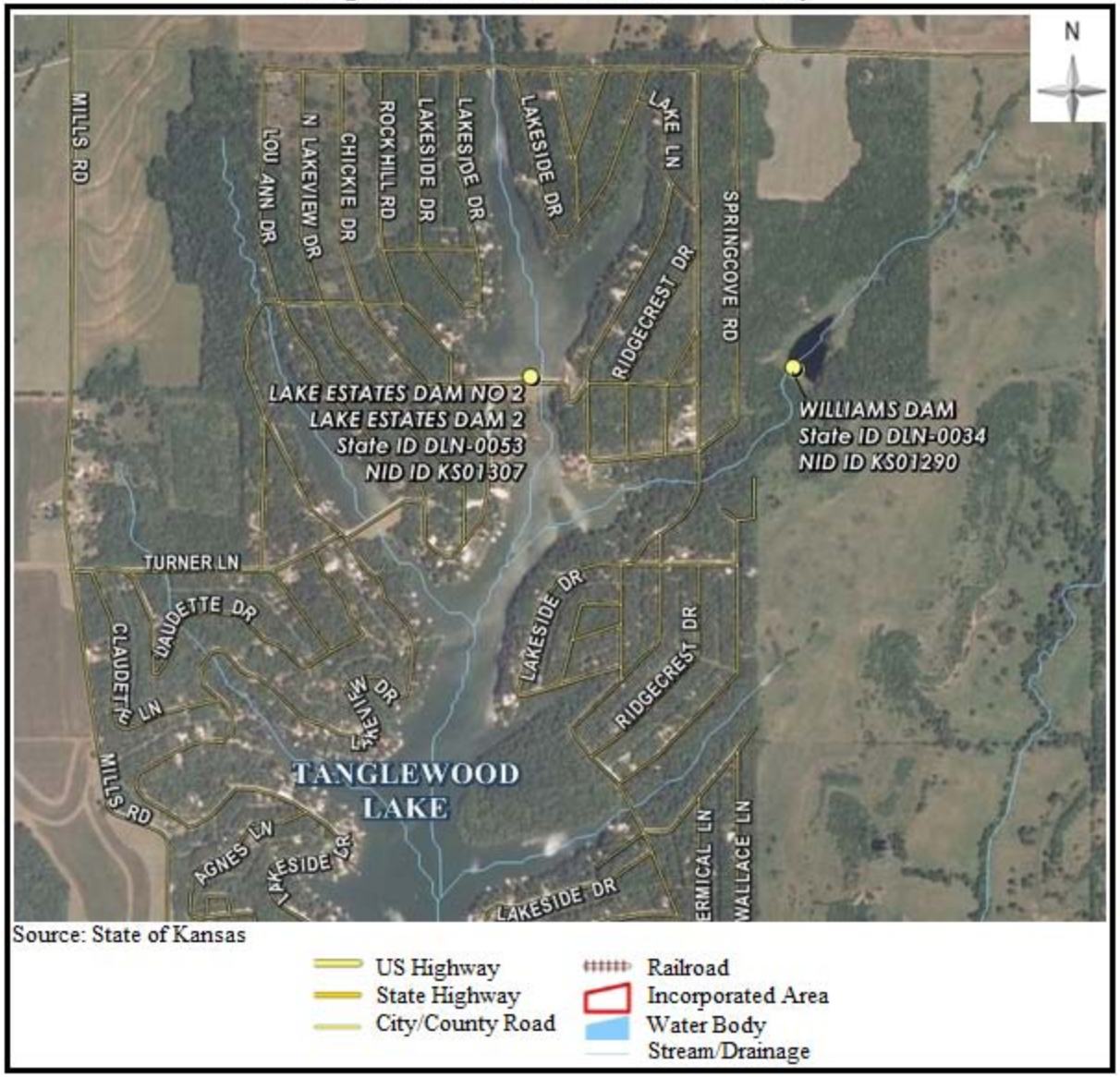
Linn Valley Dam Number 4, Linn County



Source: State of Kansas

US Highway
State Highway
City/County Road
Railroad
Incorporated Area
Water Body
Stream/Drainage

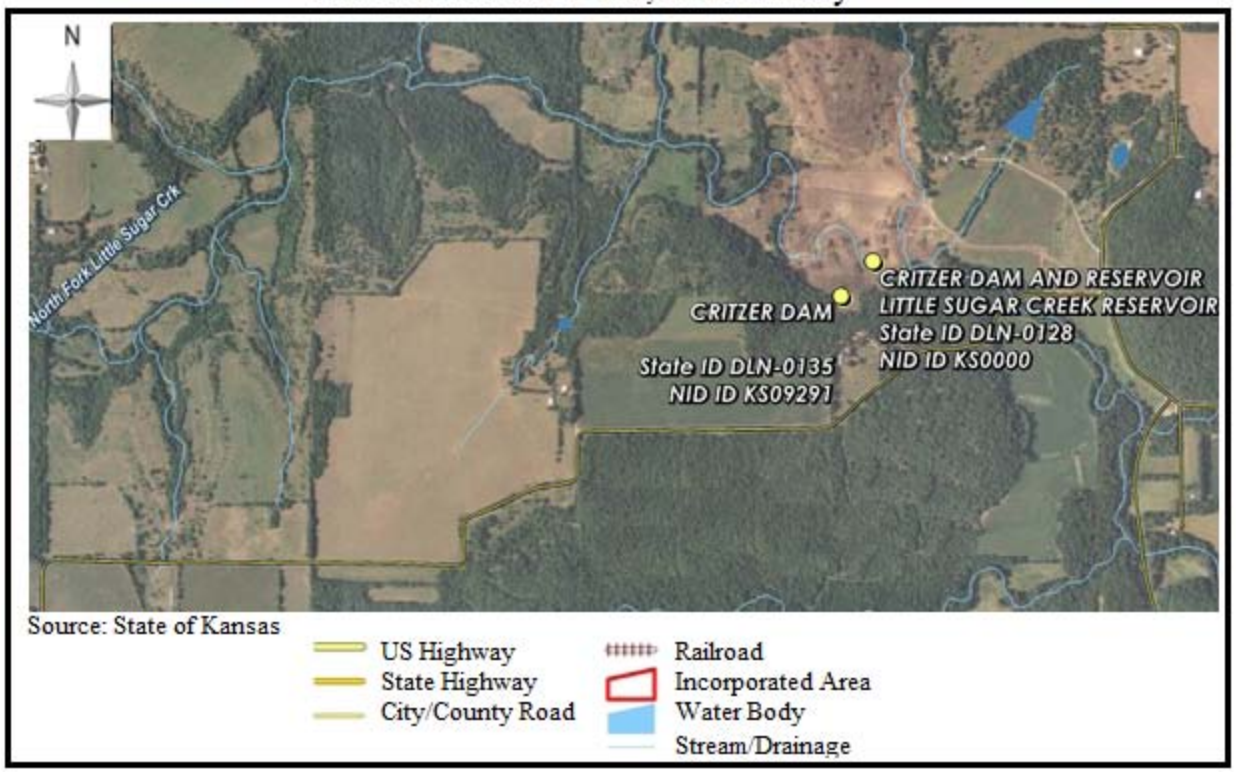
Tanglewood Lake Dams, Linn County



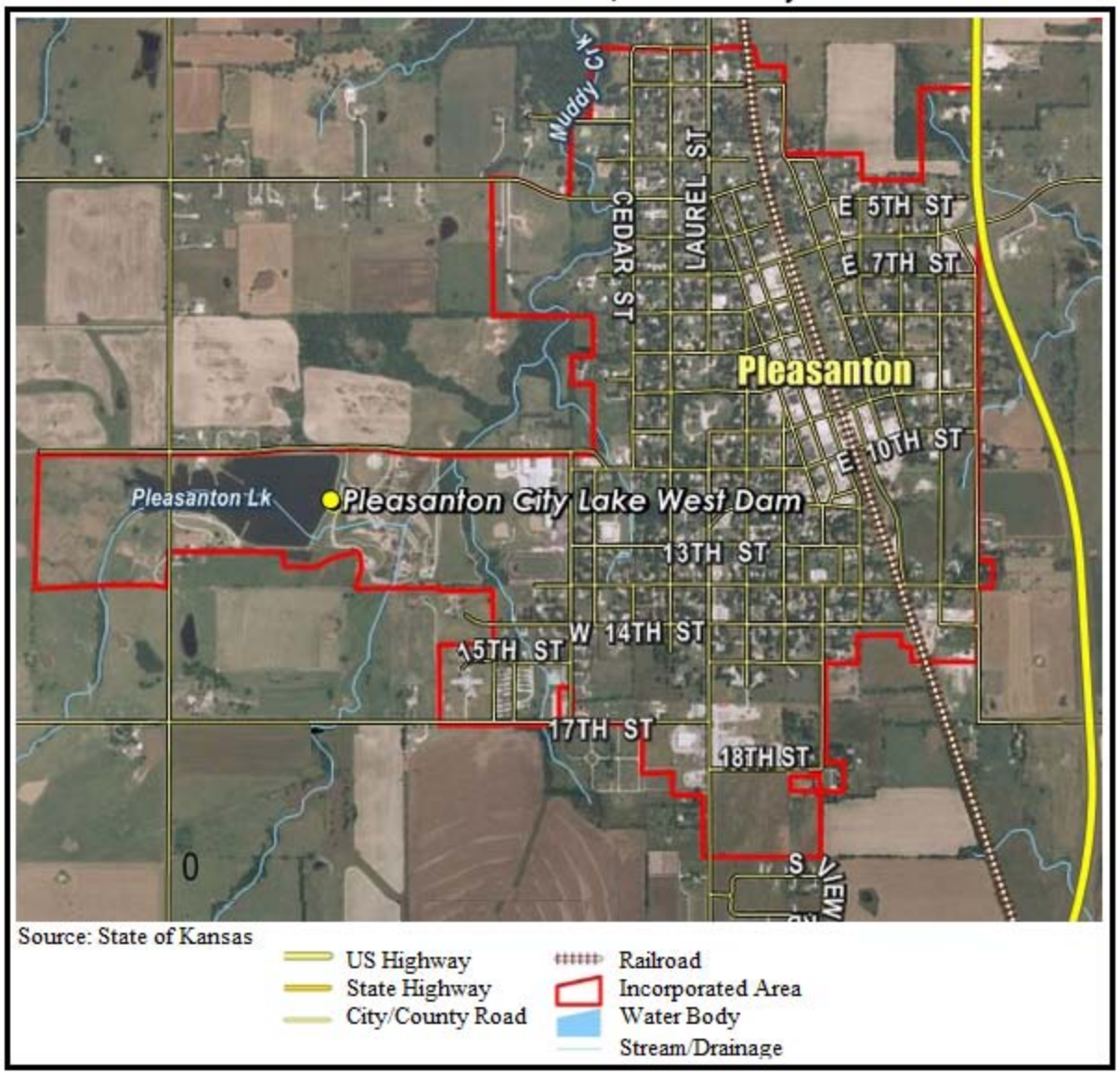
Sugar Valley Dams, Linn County

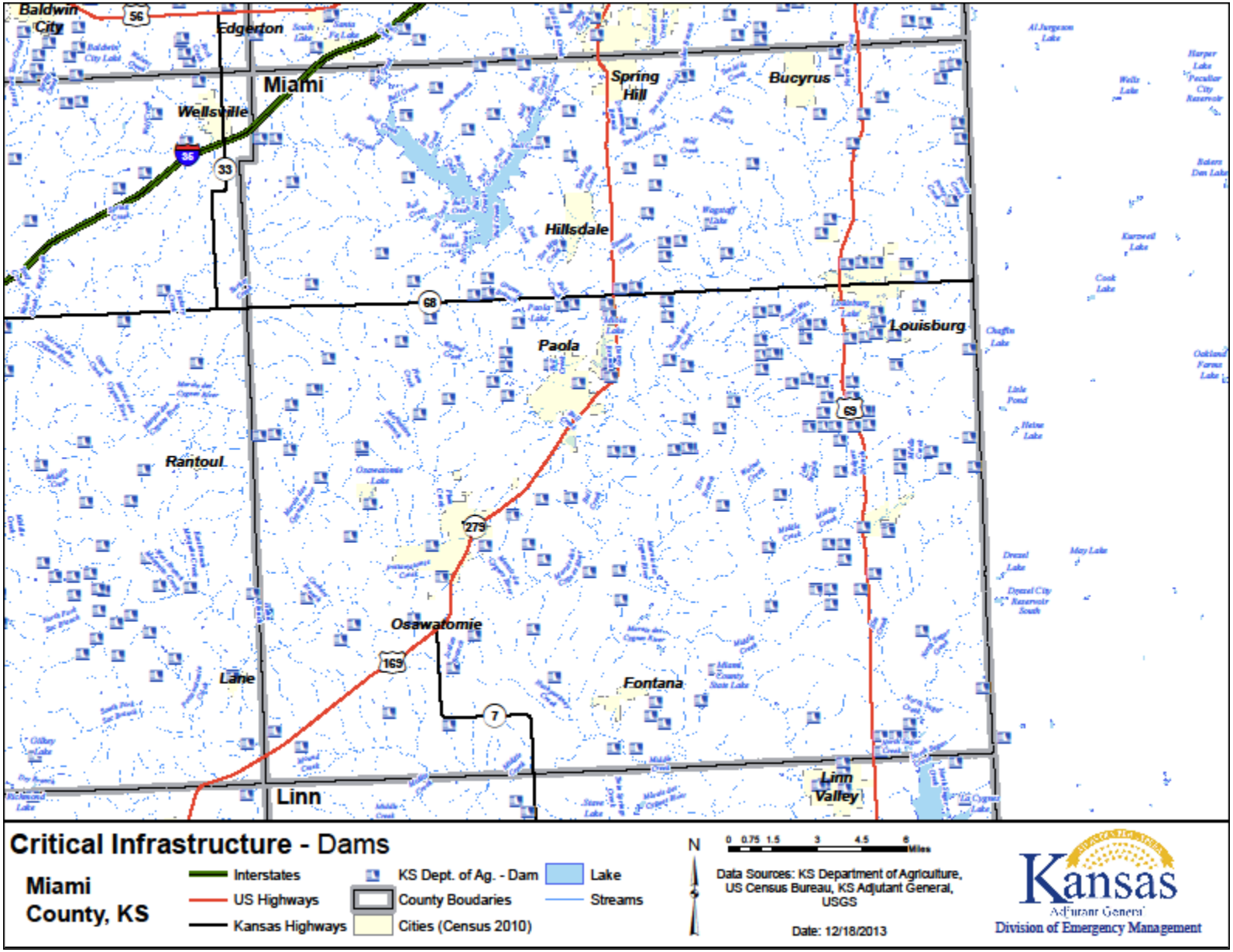


Critzer Reservoir Dam, Linn County

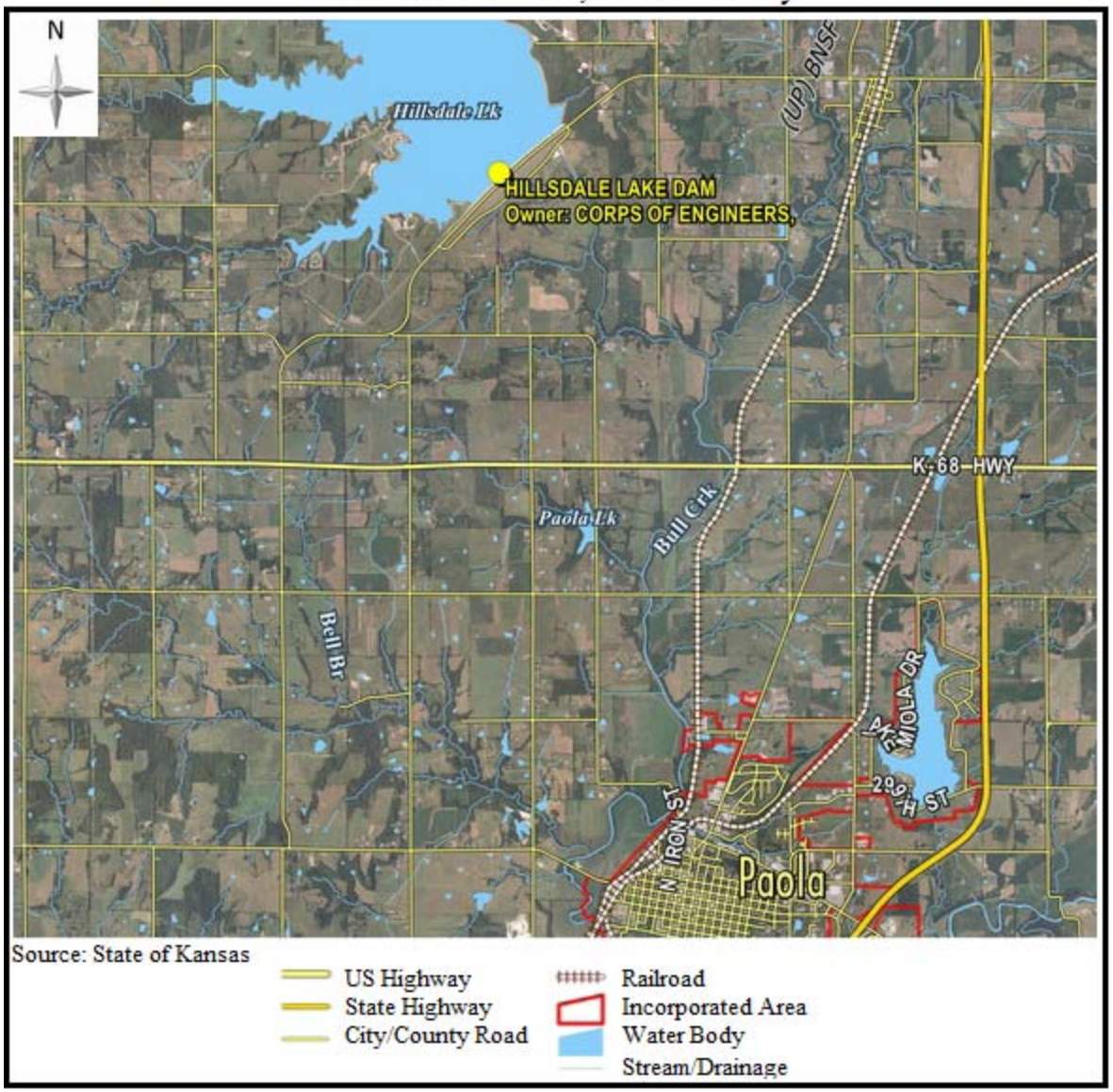


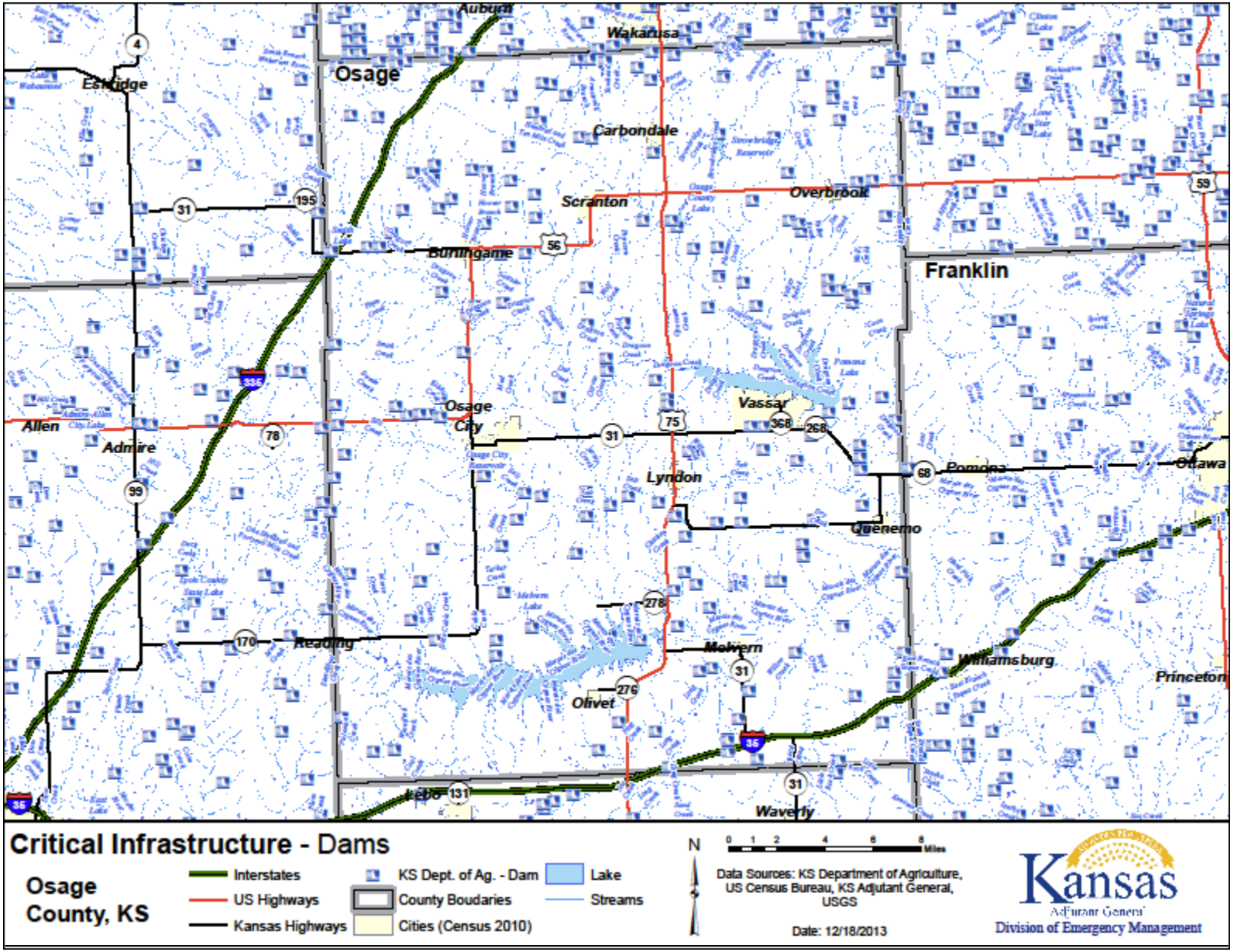
Pleasanton Lake Dam, Linn County



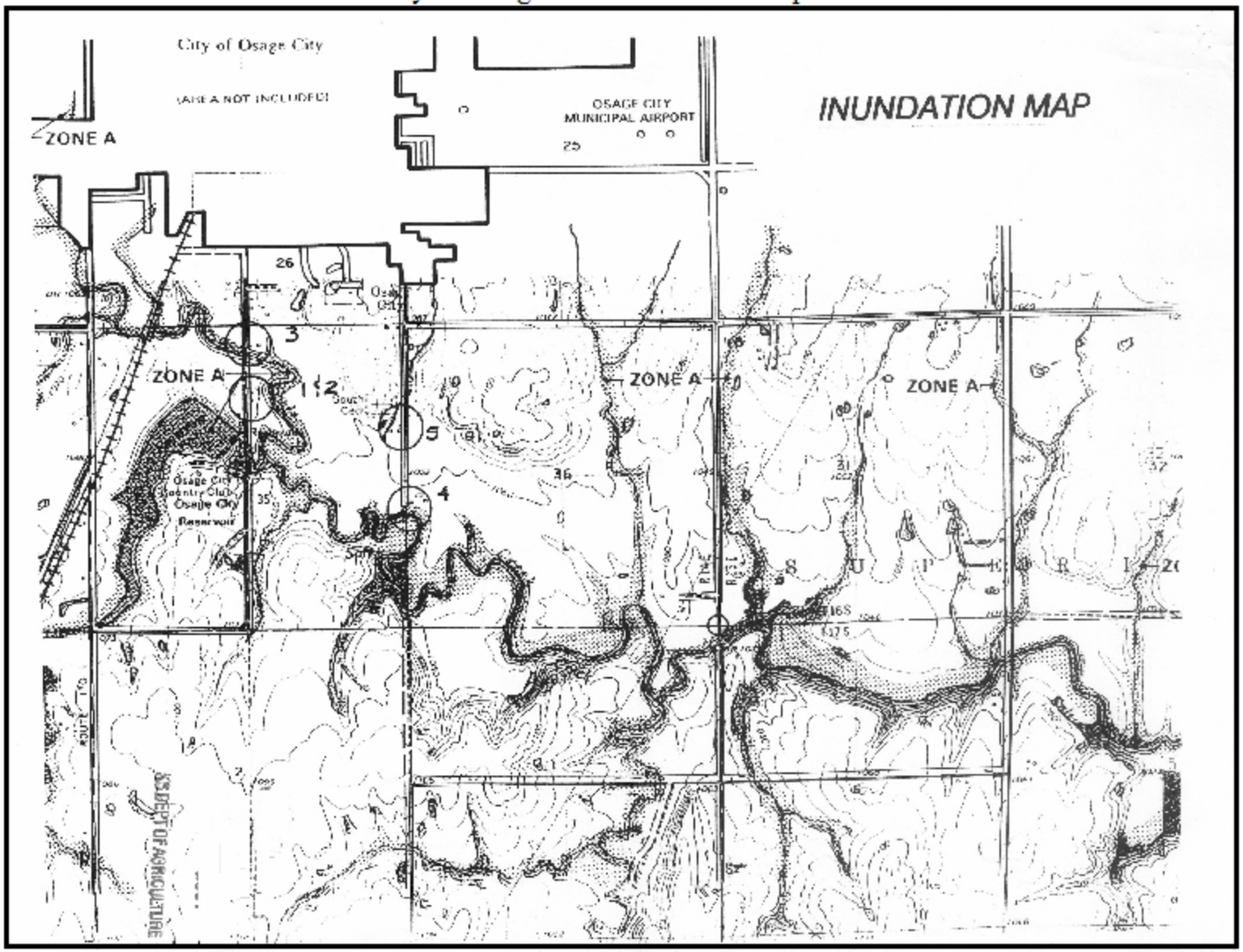

Baldwin City
Edgerton
Miami
Wellsville
Spring Hill
Bucyrus
Hillsdale
Paola
Louisburg
Rantoul
Osawatomie
Lane
Fontana
Linn Valley
Linn
56
33
35
68
69
273
169
7
Critical Infrastructure - Dams
Miami County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Dam
County Boudaries
Cities (Census 2010)
Lake
Streams
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management

Hillsdale Lake Dam, Miami County

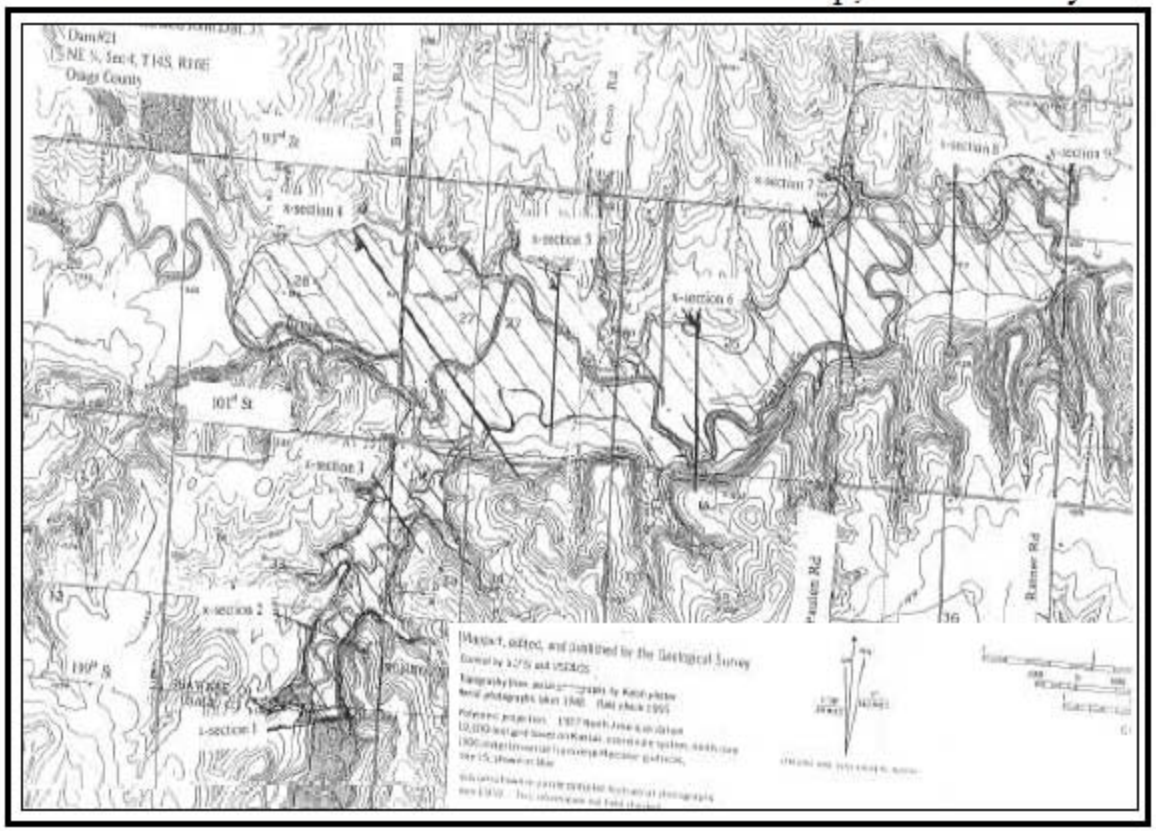



Critical Infrastructure - Dams
Osage County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Dam
County Boudaries
Cities (Census 2010)
Lake
Streams
N
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management
Osage
Franklin
Auburn
Wakarusa
Carbondale
Overbrook
Scranton
Burlingame
Osage City
Vassar
Lyndon
Pomona
Ottawa
Quenemo
Allen
Admire
Reading
Melvern
Olivet
Williamsburg
Princeton
Lebo
Waverly

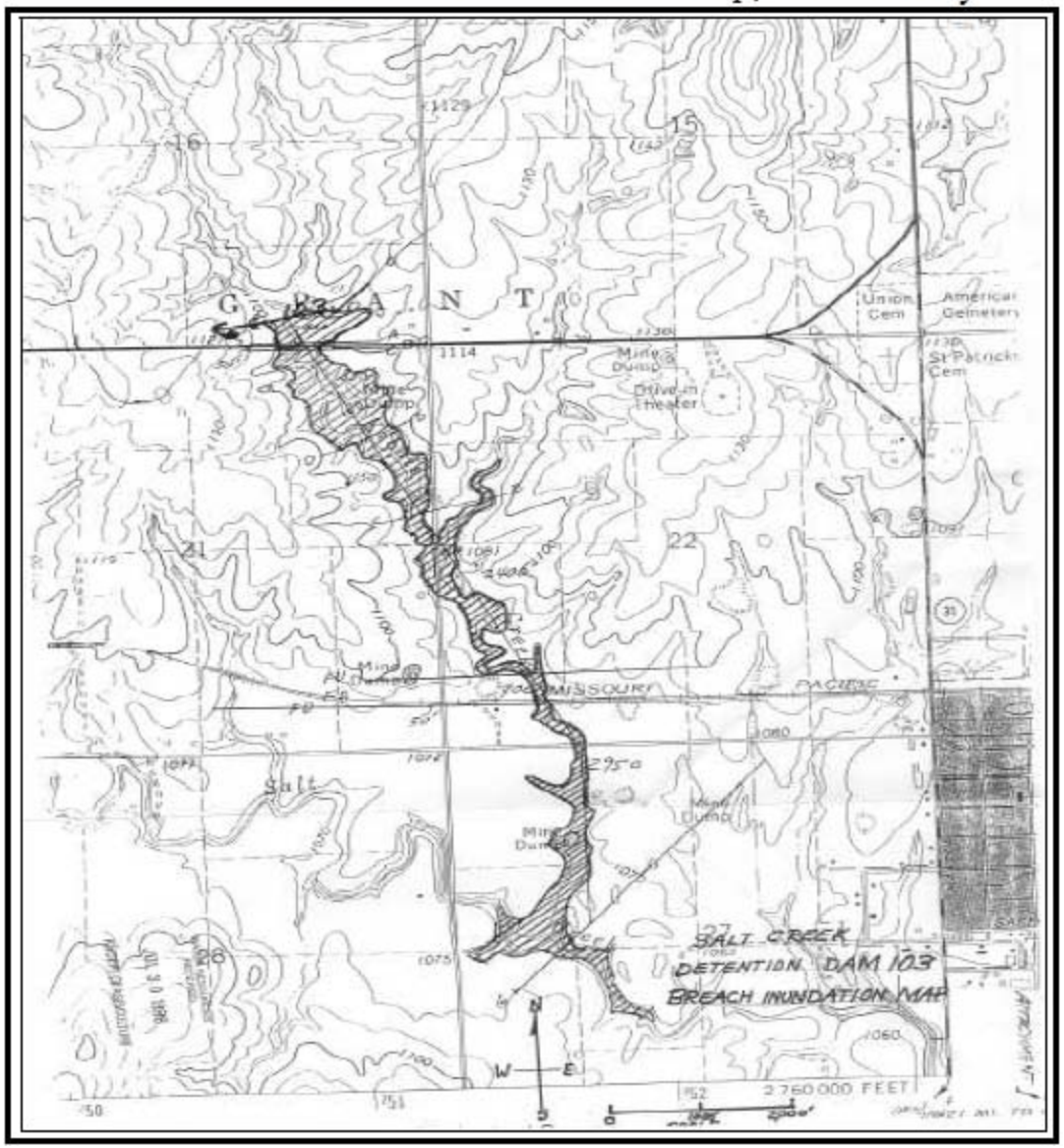
City of Osage Dam Inundation Map



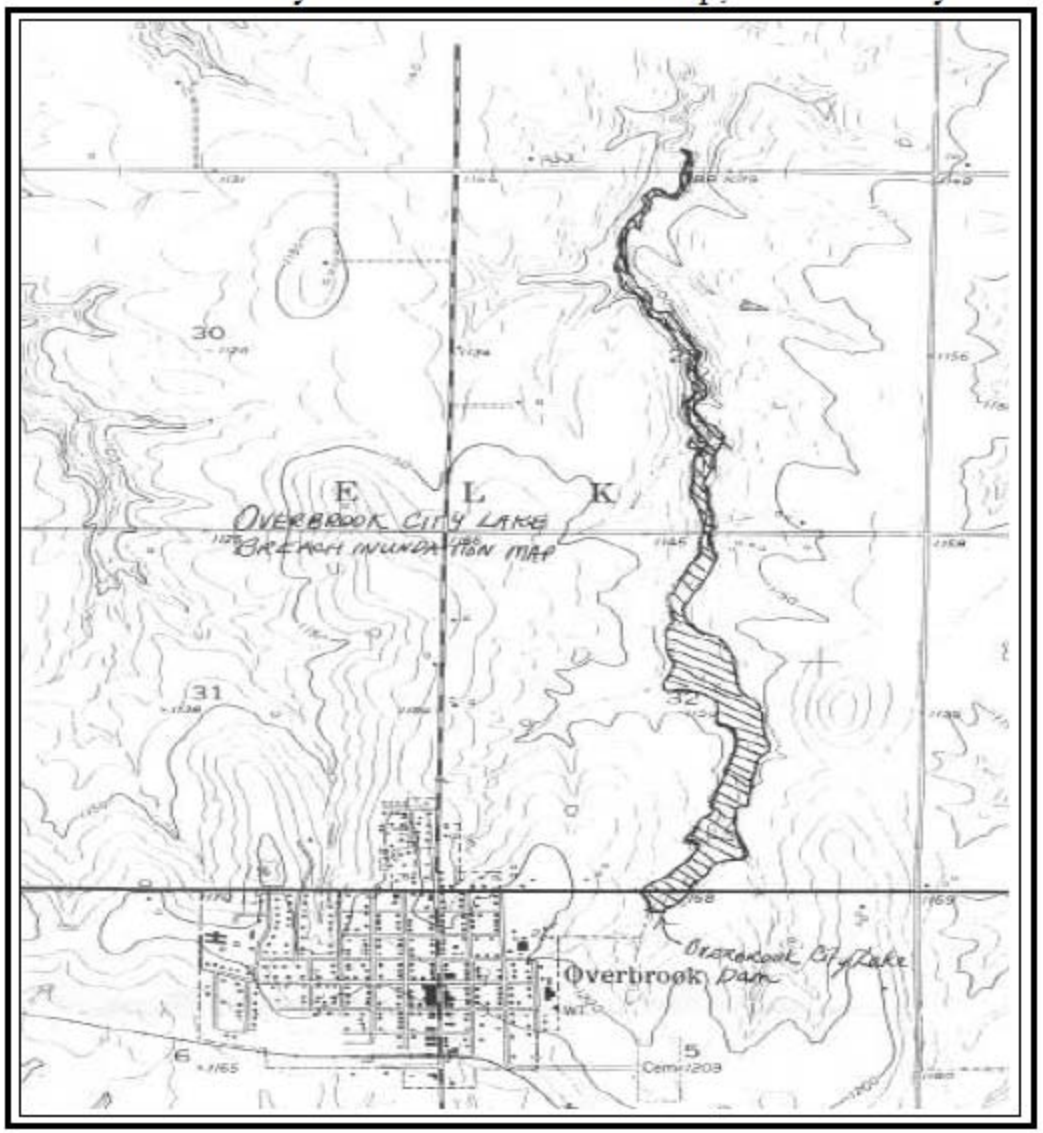
Wakarusa Watershed Dam Number 21 Inundation Map, Miami County

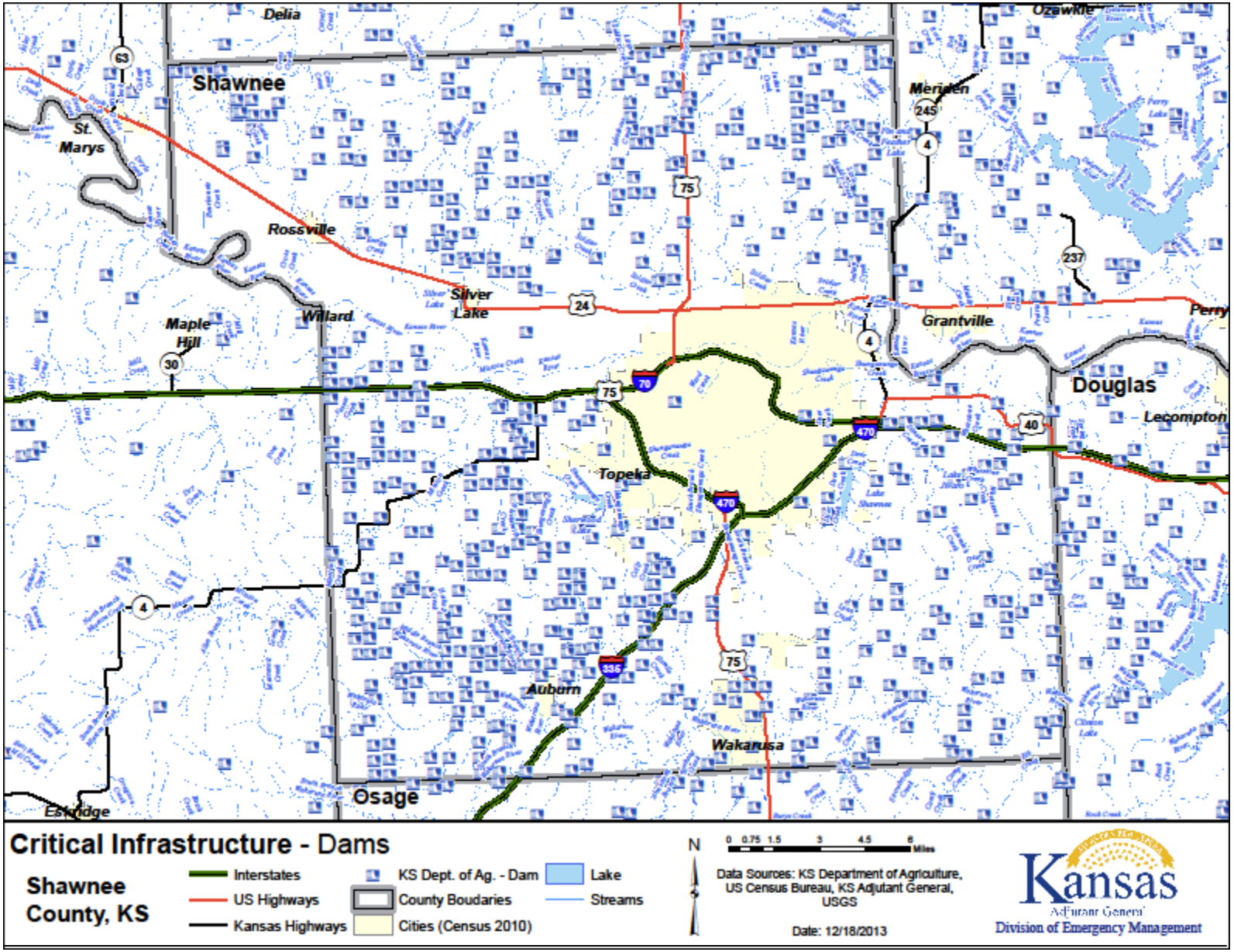


Salt Creek Detention Dam 103 Inundation Map, Miami County

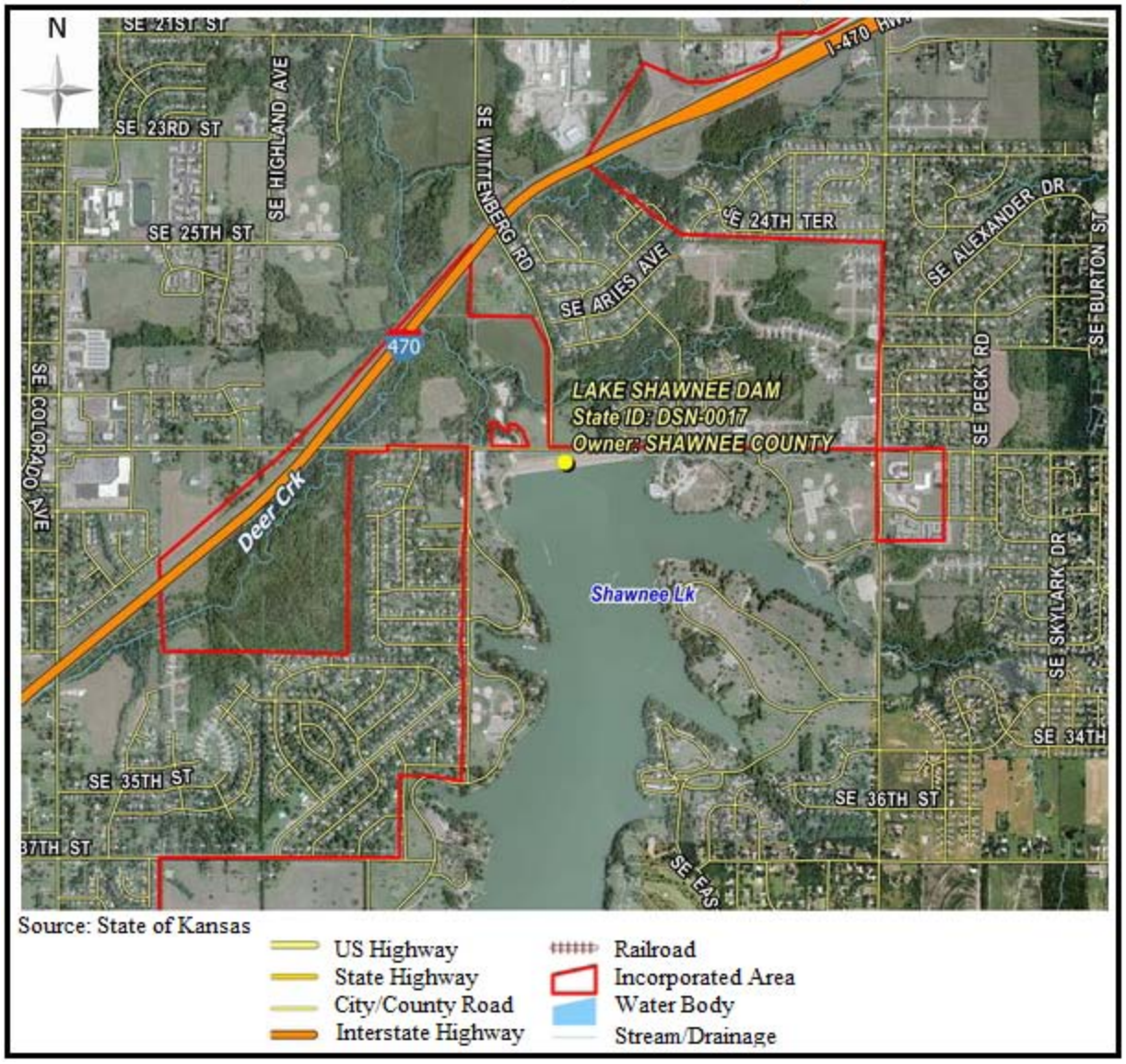


Overbrook City Lake Dam Inundation Map, Miami County

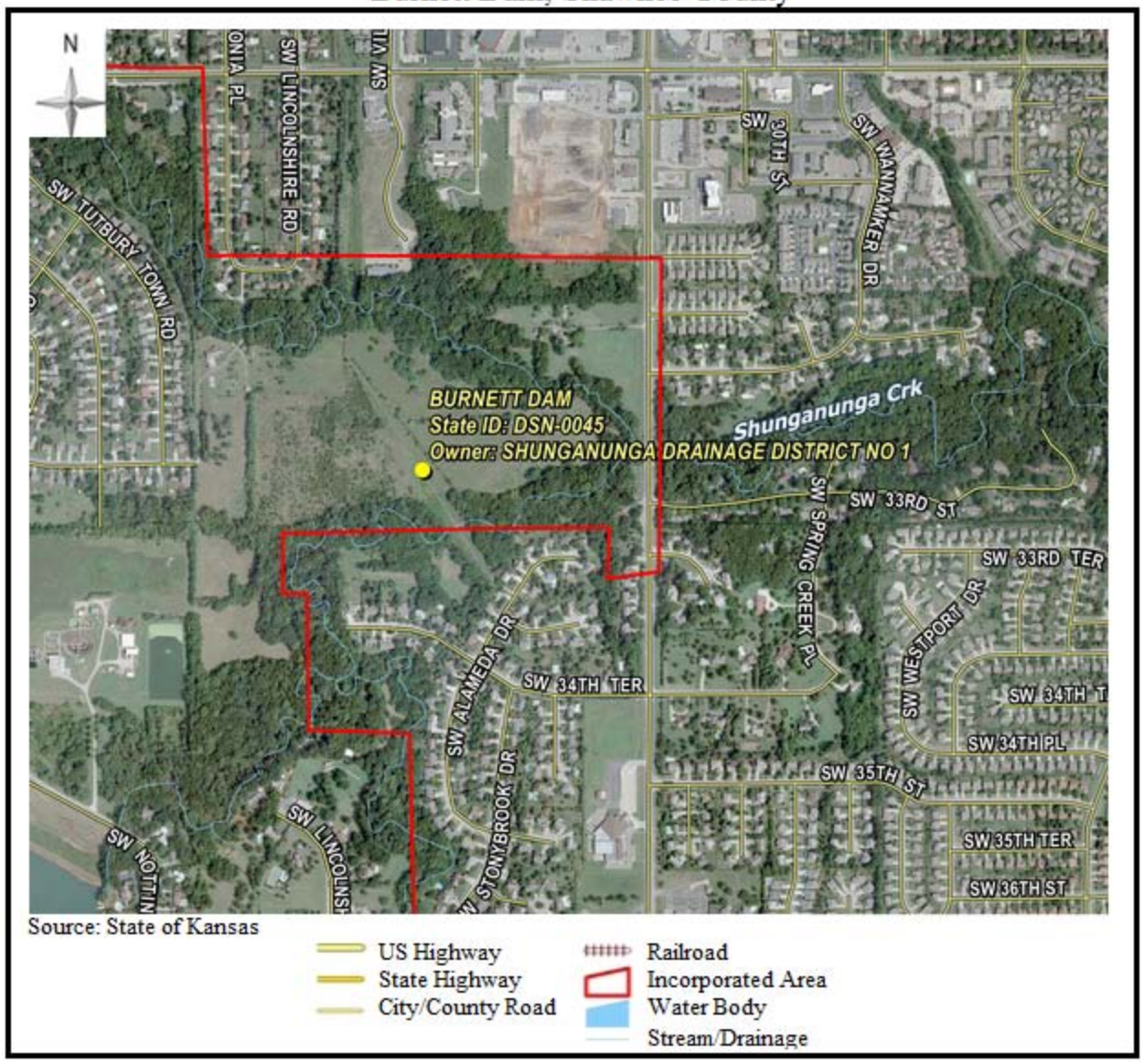



Critical Infrastructure - Dams
Shawnee County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Dam
County Boudaries
Cities (Census 2010)
Lake
Streams
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management
Delia
Shawnee
St. Marys
Rossville
Silver Lake
Willard
Maple Hill
Topeka
Auburn
Wakarusa
Osage
Eskridge
Meriden
Ozawkie
Grantville
Perry
Douglas
Lecompton

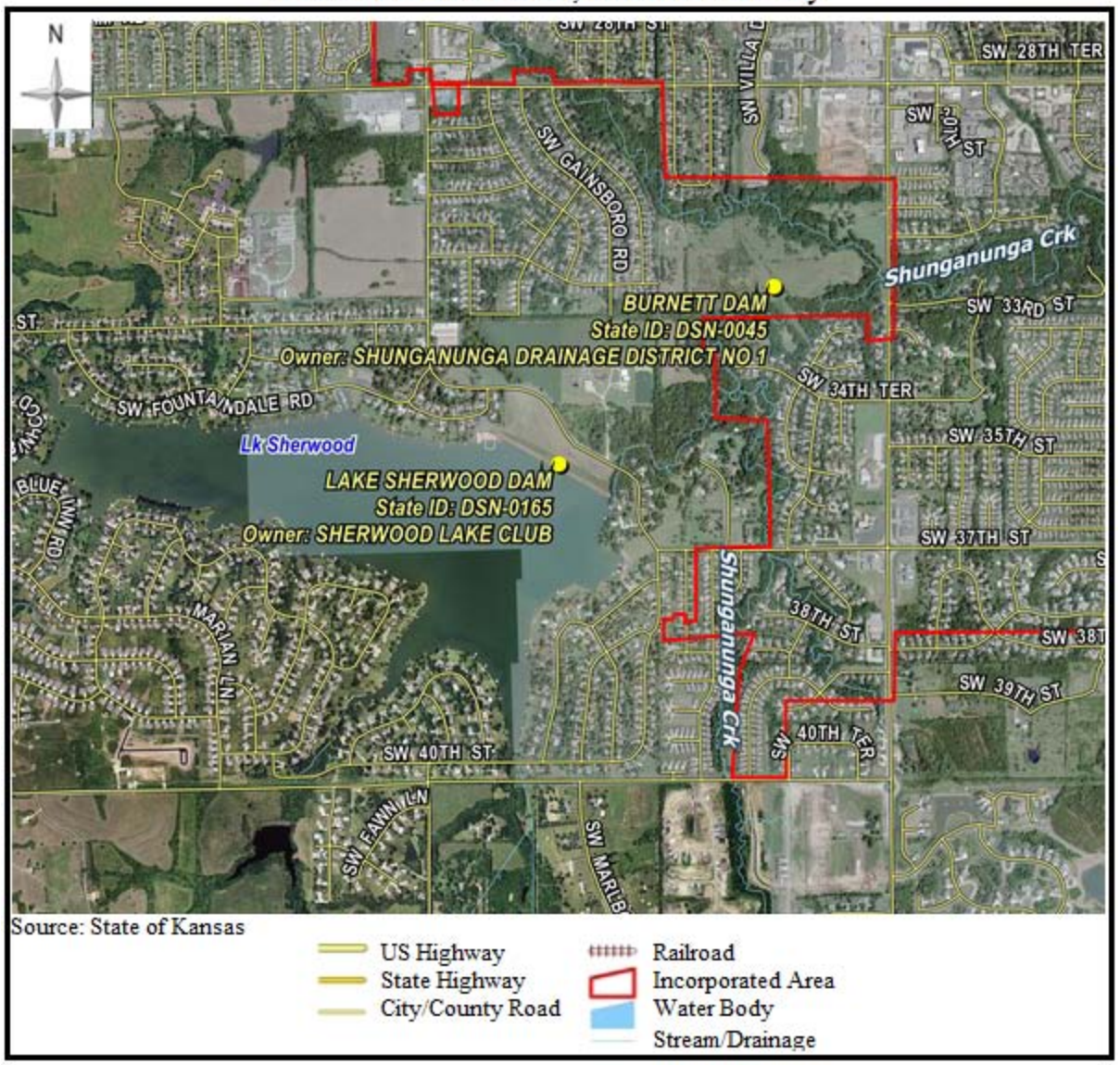
Lake Shawnee Dam, Shawnee County



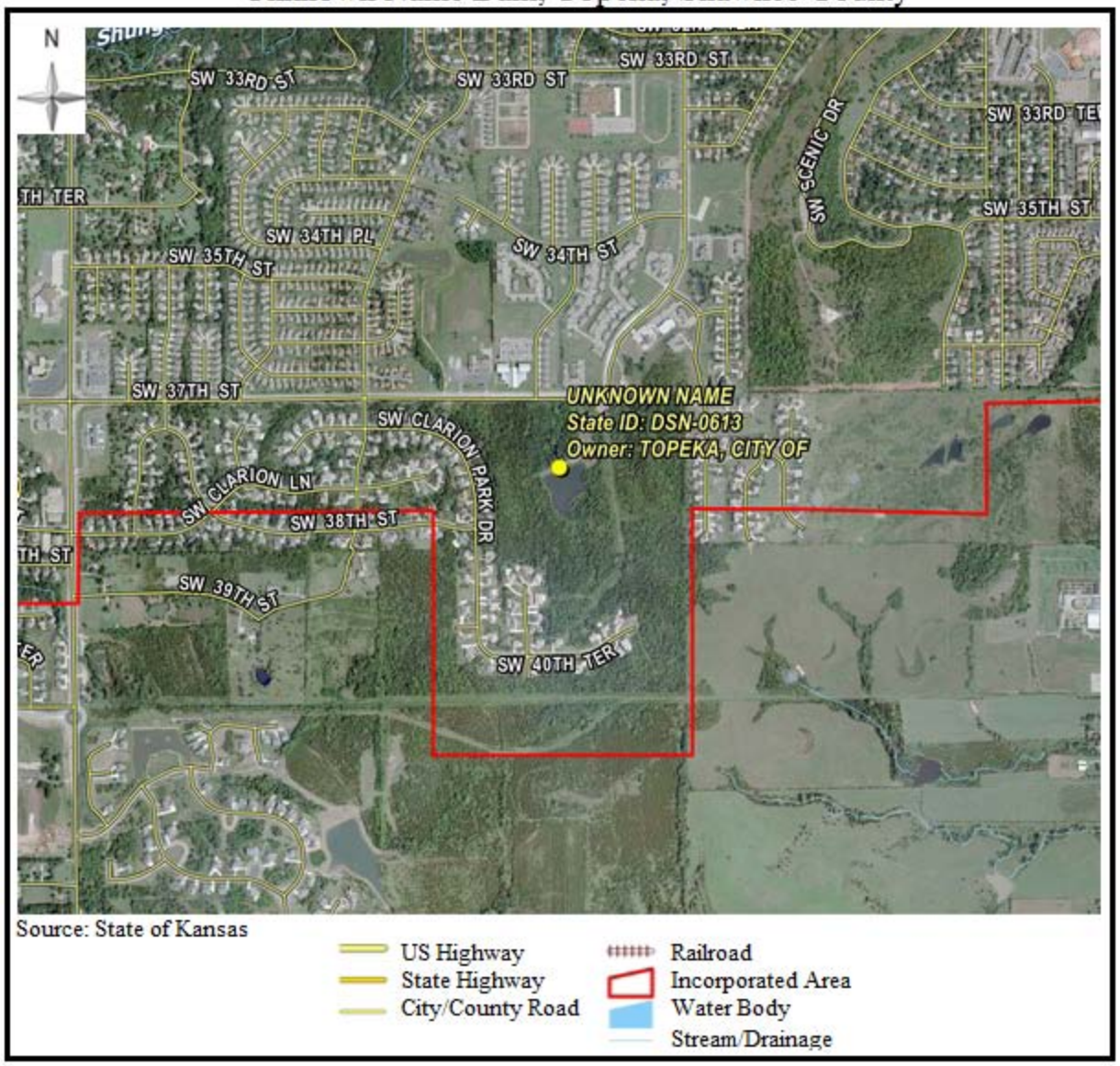
Burnett Dam, Shawnee County



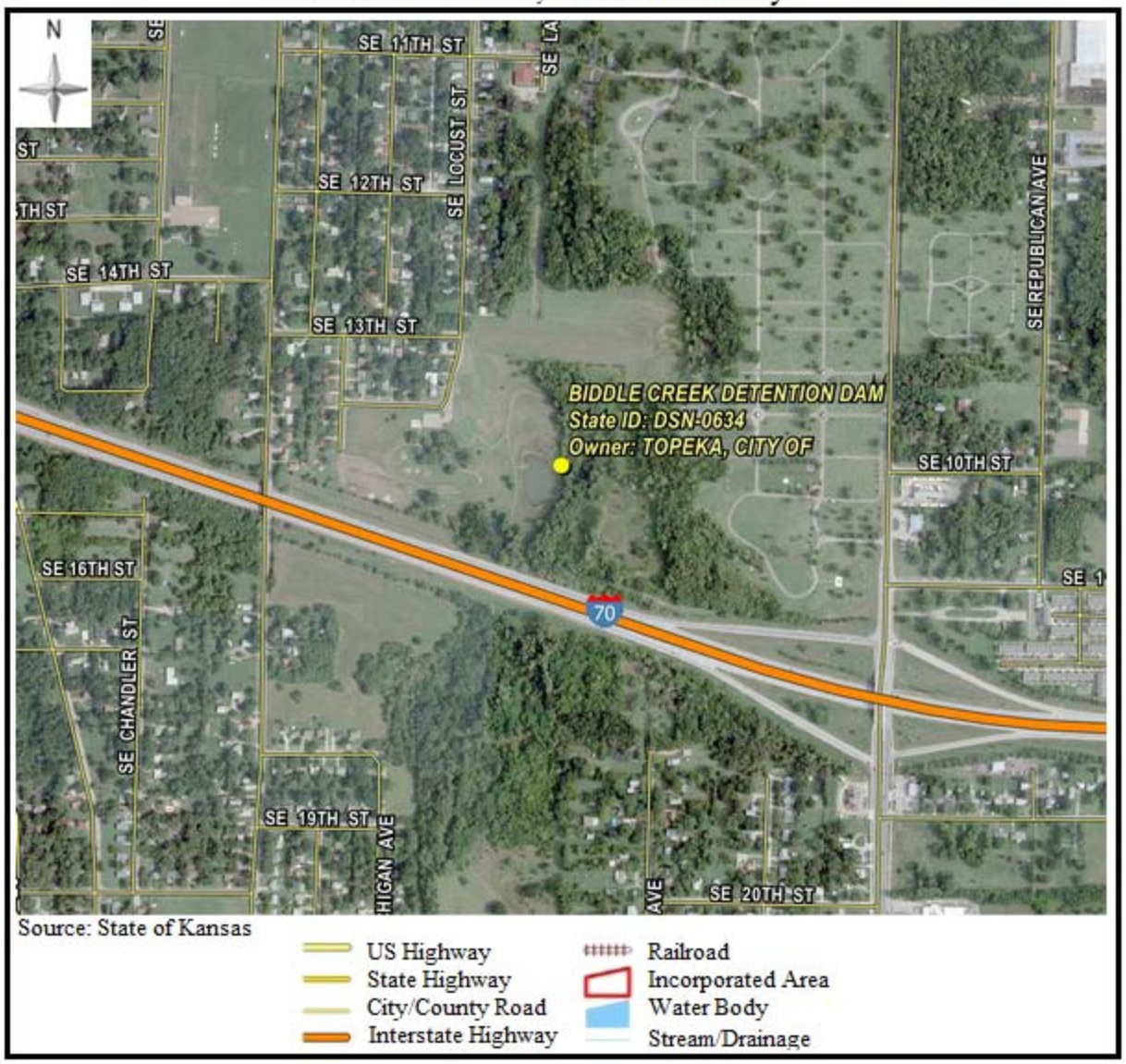
Lake Sherwood Dam, Shawnee County



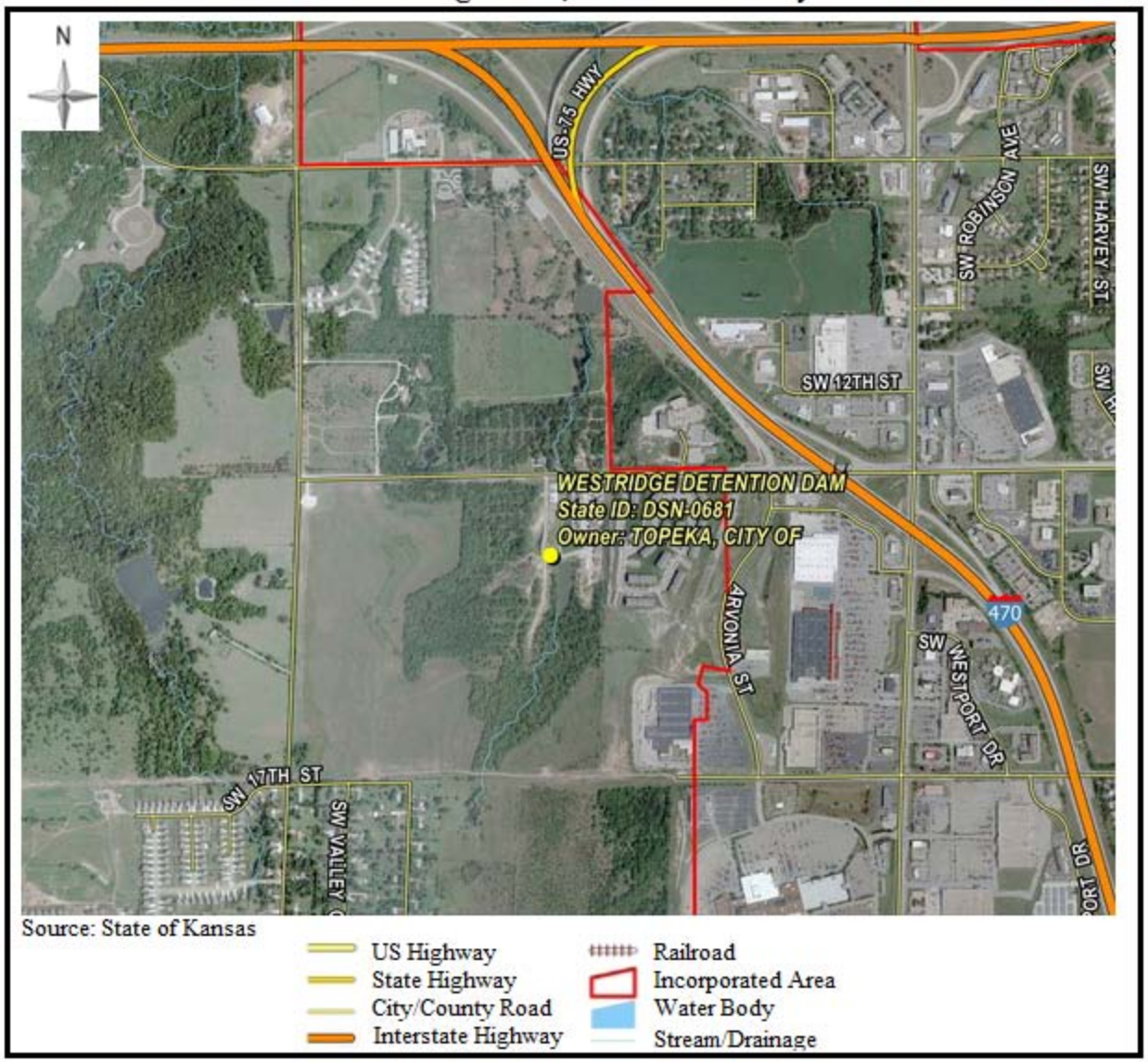
Unknown Name Dam, Topeka, Shawnee County



Biddle Creek Dam, Shawnee County



Westridge Dam, Shawnee County



Federal Dams and Reservoirs

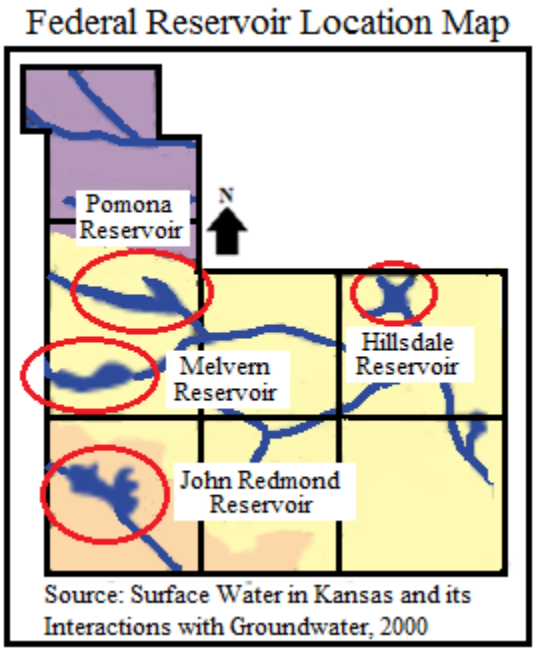
There are also two dams in east-central Kansas that are maintained and operated by the federal government. One is maintained by the USACE Tulsa District, one is maintained by the United States Fish and Wildlife Service and three are maintained by the USACE Kansas City District. The following table shows the Federal reservoirs within the region.

Federal Reservoirs in Region

Reservoir	County	Year Storage Began	Operating Agency	River Basin	Contributing Drainage Area (Square Miles)	Surface Area (Acres)	Estimated Storage Capacity (Acre Feet)
John Redmond	Coffey	1964	USACE-Tulsa	Arkansas	3,015	8,084	44,385
Stateline Pond Dam Outlet	Linn	1972	US Fish & Wildlife Service	'-	150	32.38	114.49
Hillsdale	Miami	1981	USACE-KC	Missouri	144	4,576	71,950
Melvern	Osage	1970	USACE-KC	Missouri	349	6,885	147,973
Pomona	Osage	1962	USACE-KC	Missouri	322	3,865	59,642

Source: Kansas Water Office and Kansas Department of Agriculture, Division of Water Resources

The following map shows the location of federal reservoirs within east-central Kansas and in adjacent counties.



Dams in Adjacent States and Counties

Three federal reservoirs have been identified that could impact Linn County in the event of a failure, identified as Melvern Reservoir on the Marias des Cygnes River, the Pomona Reservoir

on 110 Mile Creek, and the Hillsdale Reservoir on Big Bull Creek. It was reported that the EAPs and inundation maps for these federal reservoirs are classified and not available for review.

Two Federal reservoirs were identified outside of Shawnee County that could have a negative impact on the county in the event of a breach, overtopping, or failure of the dam. The reservoirs include are Tuttle Creek and Milford dams located in Riley and Geary Counties respectively. A complete failure of the Milford dam could result in flood water reaching Shawnee County communities such as Rossville , Silver Lake and Topeka in 14 to 17 hours while a failure of Tuttle Creek dam could result in floodwaters reaching Shawnee County communities in 7 to 11 hours.

There are two dams located in bordering Missouri counties. These dams are:

- Bates County - Drexel Lake Dam (ID # MO20046)
- Bates County - Drexel City Reservoir (ID# MO 20213)

A failure of these dams would be expected to have a minimal impact on the planning region.

Levees

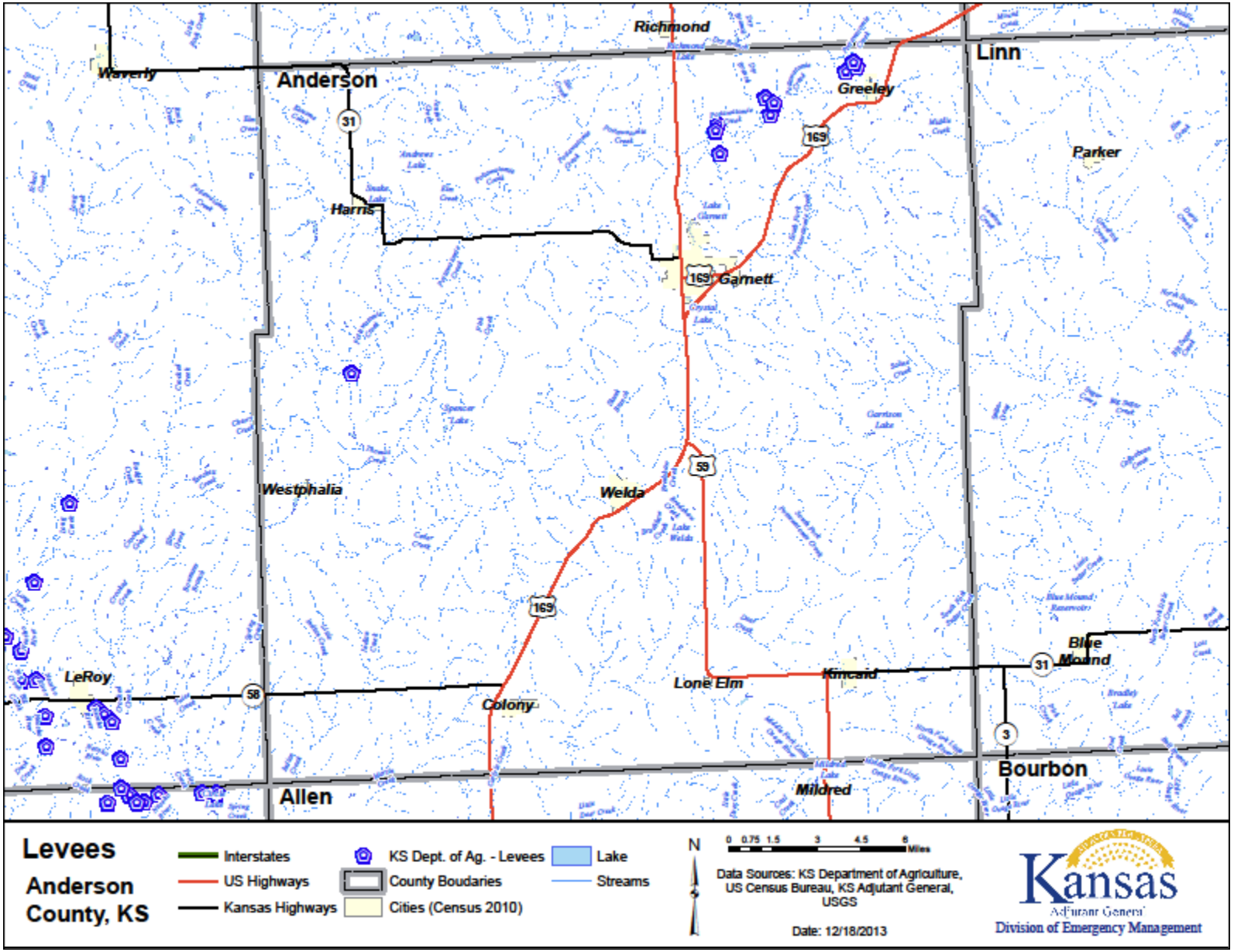
In Kansas, there are hundreds of levees ranging in size from small agricultural levees that were constructed primarily to protect farmland from high frequency flooding to large urban levees that were constructed to protect people and property from larger, less frequent flooding events, such as the 100-year and 500-year flood events. Levees have been constructed across the State by public and private entities with varying levels of protection, inspection oversight, and maintenance. Currently there is no one comprehensive database of all levees in the State. However, significant strides have been made toward compiling such an inventory. In 2010, FEMA published the MLI database of levees. The MLI contains levee data gathered primarily for structures that were designed to provide protection from at least the base (1-percent-annual-chance) flood. Levees that provide protection for less than the base flood event are included, but only where data was readily available. The MLI was developed to complement the USACE NLD. During development of this plan update, USACE was in the process of integrating the MLI with the NLD to provide a more comprehensive database of levees. Every effort was made during development of this plan to consider all known levees from both databases.

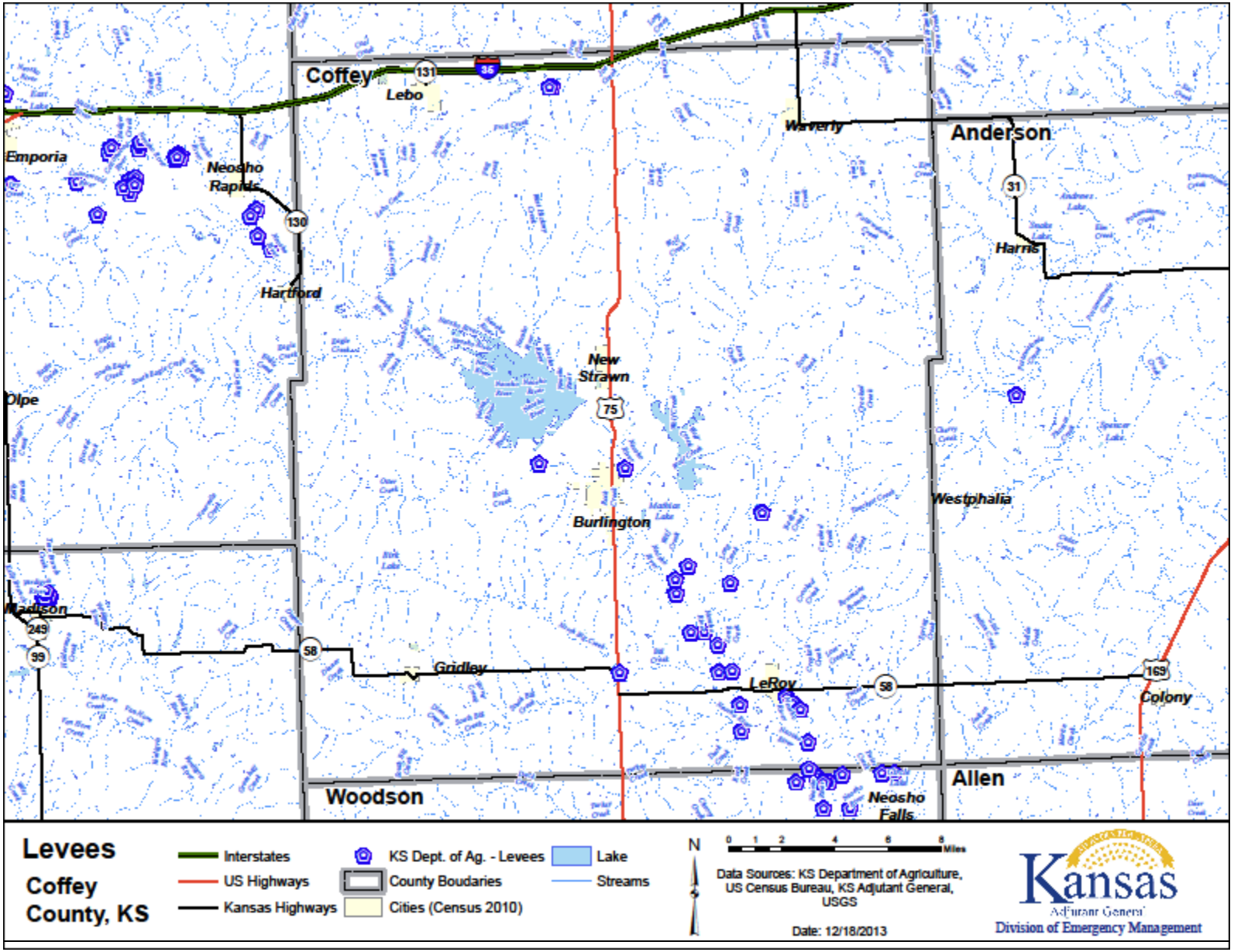
Regional Levees

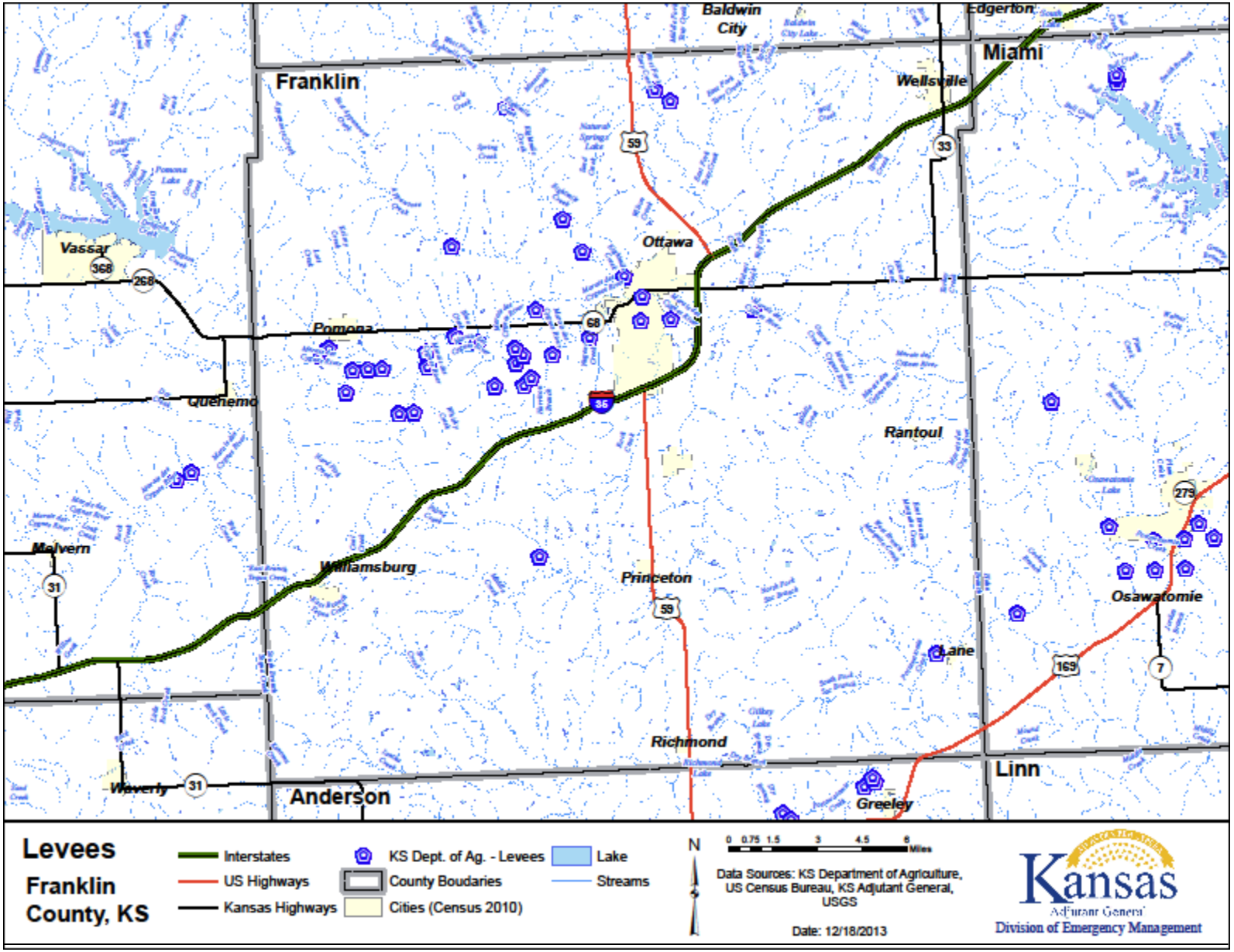
County	Levee Name	USACE LSP	USACE District	USACE Inspection Rating	MLI	Flooding Source	Accredited	DFIRM	Design Frequency
Coffey	Hartford Levee, Neosho River	Yes	TULSA	Not Reported	No	Not Reported	No		Unknown
Franklin	Ottawa Ks (Split To Left And Right Bank On Nld	Yes	KC	Acceptable to Minimally Acceptable	Yes	Marais des Cygnes River	Yes	Yes	Unknown
Miami	Osawatomie Levee	Yes	KC	Minimally Acceptable	Yes	Marais des Cygnes River	Yes	Yes	1% Annual Chance
Shawnee	Auburndale Unit (S. Topeka)	Yes	KC	Minimally Acceptable	Yes	Kansas River	Yes	Yes	1% Annual Chance
Shawnee	Kaw River Drainage District	Yes	KC	Not Reported	Yes	Kansas River	No	Yes	< 1% Annual Chance
Shawnee	North Topeka Unit	Yes	KC	Minimally Acceptable	Yes	Kansas River	Yes	Yes	1% Annual Chance
Shawnee	Oakland	No	N/A	N/A	Yes	Kansas River	Yes	Yes	1% Annual Chance
Shawnee	Silver Lake Ditch Levee	No	N/A	N/A	Yes	Silver Lake Ditch	Yes	Yes	Unknown
Shawnee	Soldier Creek Unit (Split To 6 Left Bank And 1 Right Bank)	Yes	KC	Acceptable to Minimally Acceptable	Yes	Kansas River	Yes	Yes	1% Annual Chance
Shawnee	South Topeka Unit	Yes	KC	Minimally Acceptable	Yes	Kansas River	Yes	Yes	1% Annual Chance
Shawnee	Tri-County Drainage District No. 1, Section 1-Shawnee	No	N/A	N/A	Yes	Bourbonais Creek	No	Yes	< 1% Annual Chance
Shawnee	Tri-County Drainage District No. 1, Section 2	Yes	KC	Not Reported	Yes	Bourbonais Creek	No	Yes	< 1% Annual Chance
Shawnee	Tri-County Drainage District No. 1, Section 3	Yes	KC	Not Reported	Yes	Kansas River	No	Yes	< 1% Annual Chance
Shawnee	Water Works Unit (South Topeka)	Yes	KC	Minimally Acceptable	Yes	Kansas River	Yes	Yes	1% Annual Chance
Shawnee	Oakland	Yes	KC	Minimally Acceptable	No	Not Reported	No		Unknown

Compiled from the USACE NLD as well as the FEMA MLI

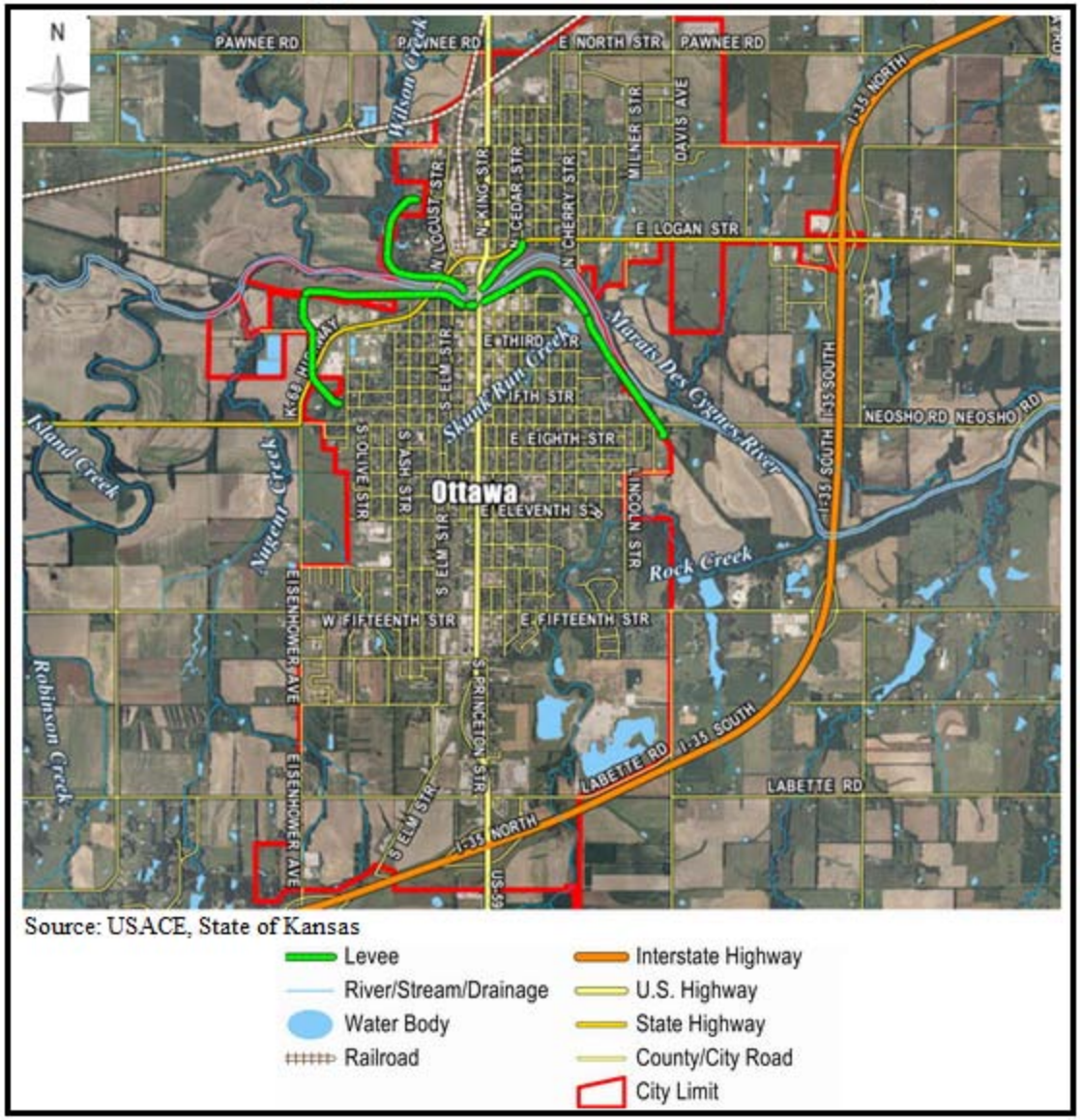
The following maps show identified levee protected areas within the east-central Kansas region.

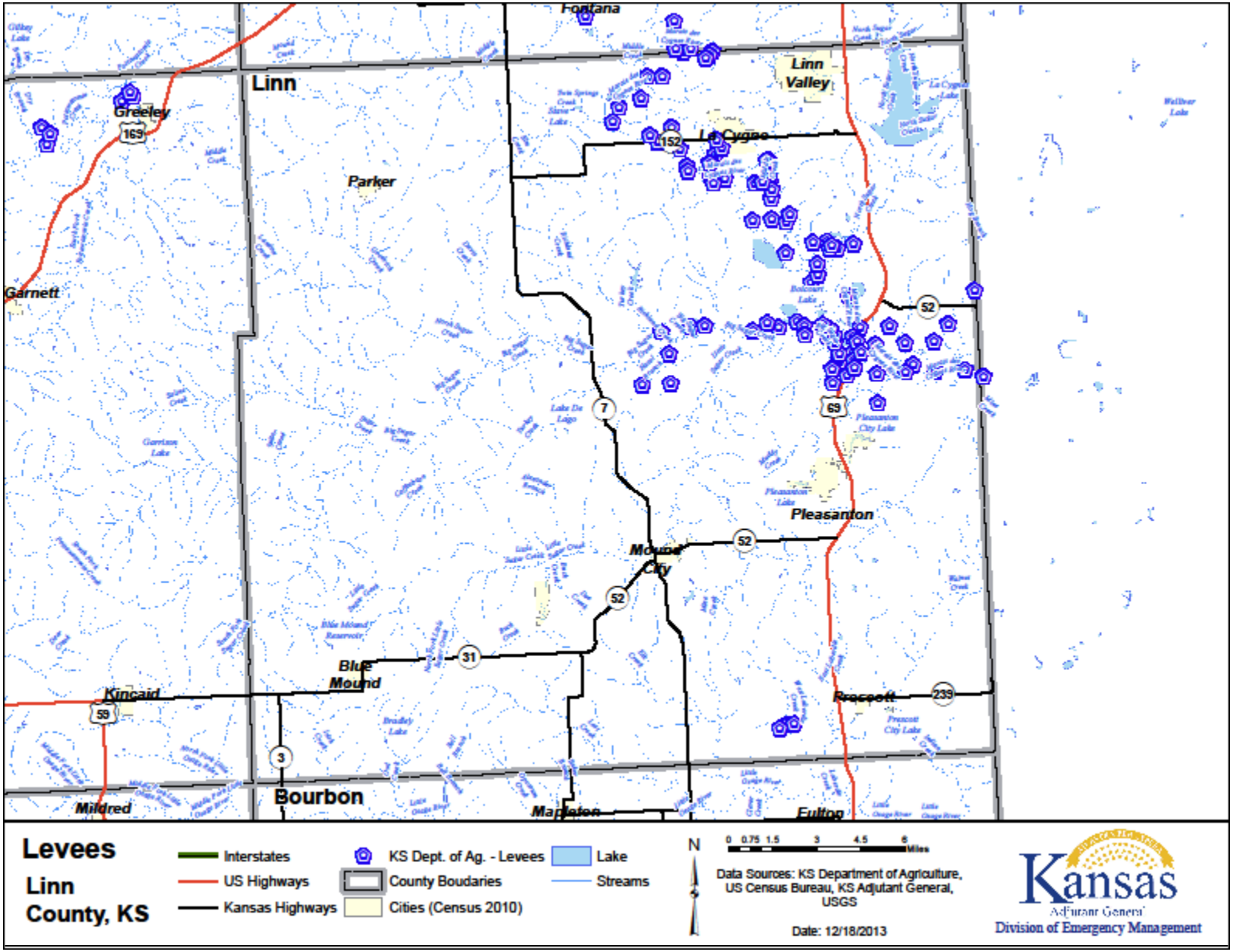

Richmond
Linn
Waverly
Anderson
Greeley
Parker
Harris
Garnett
Westphalia
Welda
LeRoy
Colony
Lone Elm
Kincaid
Blue Mound
Bourbon
Allen
Mildred
Levees
Anderson County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Levees
County Boudaries
Cities (Census 2010)
Lake
Streams
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management

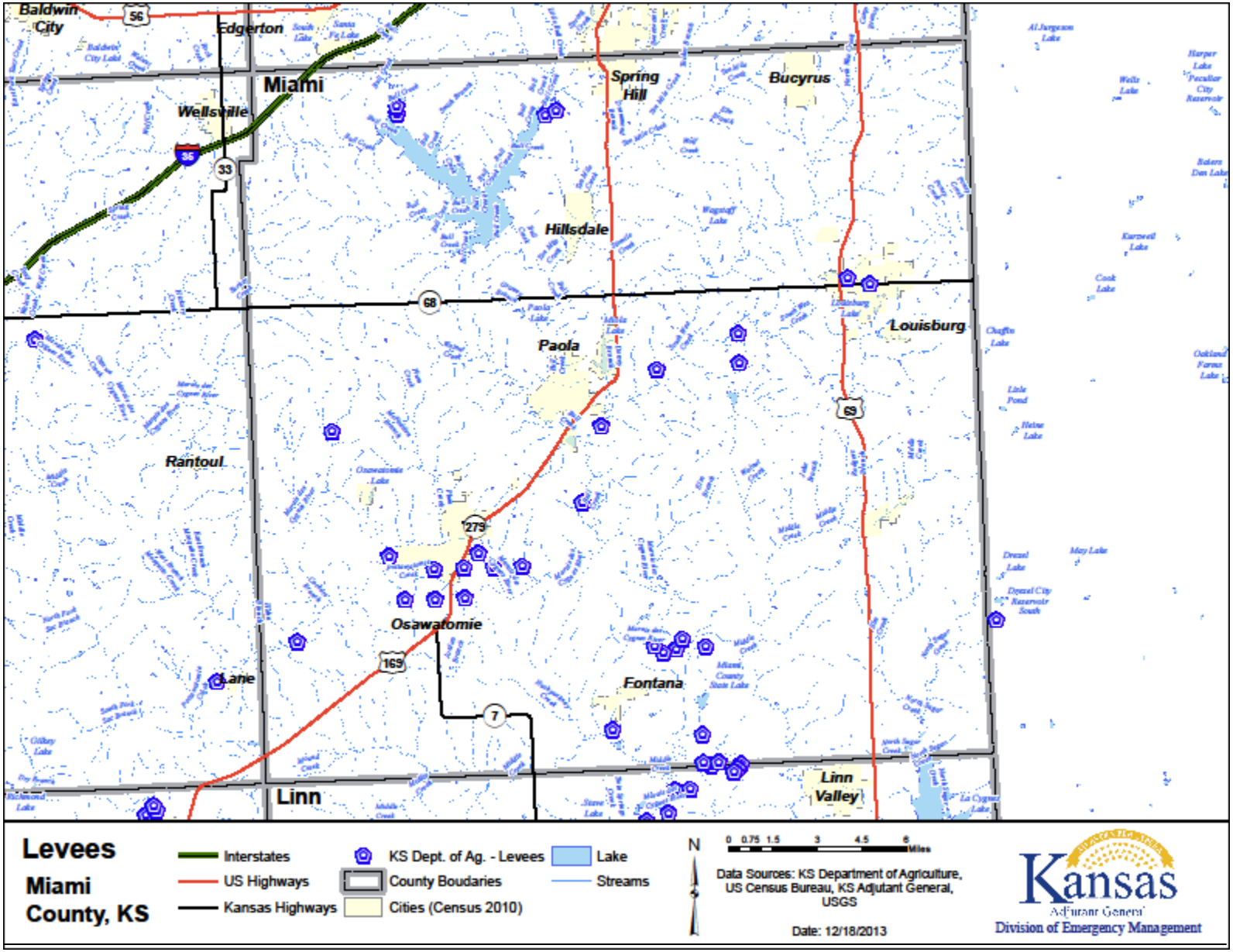

Coffey
Lebo
Waverly
Anderson
Emporia
Neosho Rapids
Harris
Hartford
New Strawn
Olpe
Burlington
Westphalia
Madison
Gridley
LeRoy
Colony
Woodson
Allen
Neosho Falls
Levees
Coffey County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Levees
County Boudaries
Cities (Census 2010)
Lake
Streams
N
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management


Baldwin City
Edgerton
Franklin
Miami
Wellsville
Ottawa
Vassar
Pomona
Quenemo
Rantoul
Malvern
Williamsburg
Princeton
Osawatomie
Lane
Richmond
Waverly
Anderson
Greeley
Linn
Levees
Franklin County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Levees
County Boudaries
Cities (Census 2010)
Lake
Streams
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management

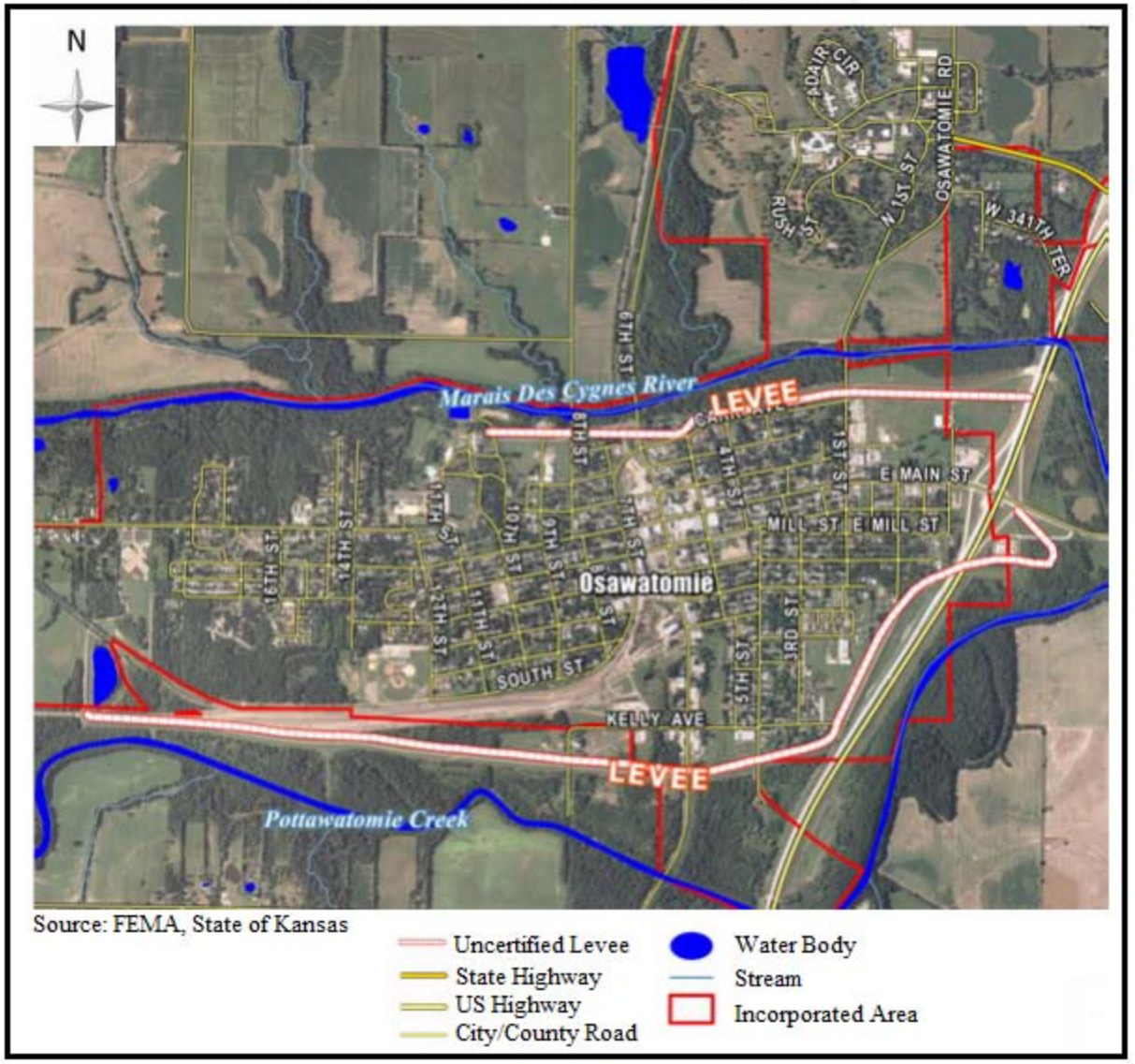
Marais Des Cygnes River Levee, Ottawa, Franklin County

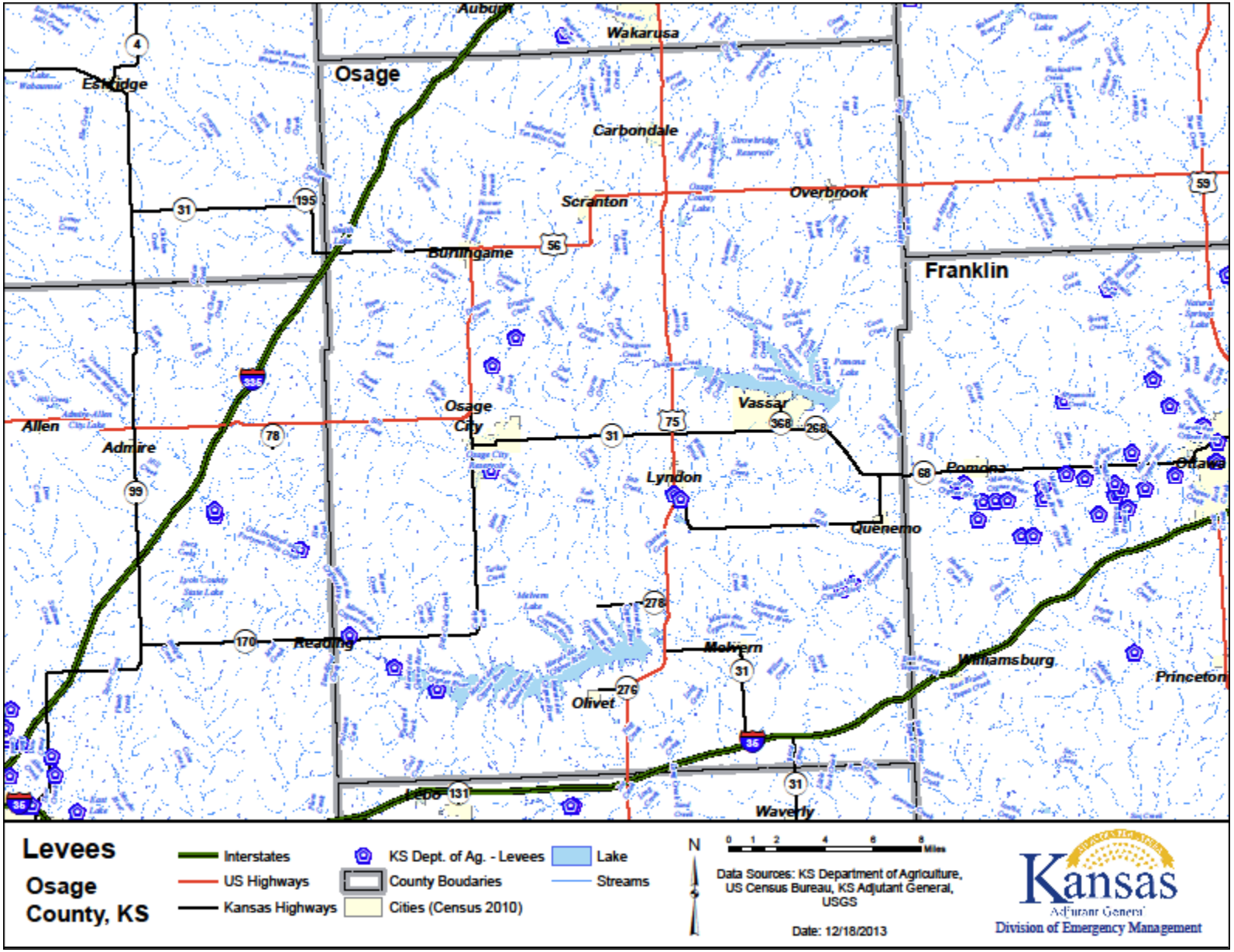


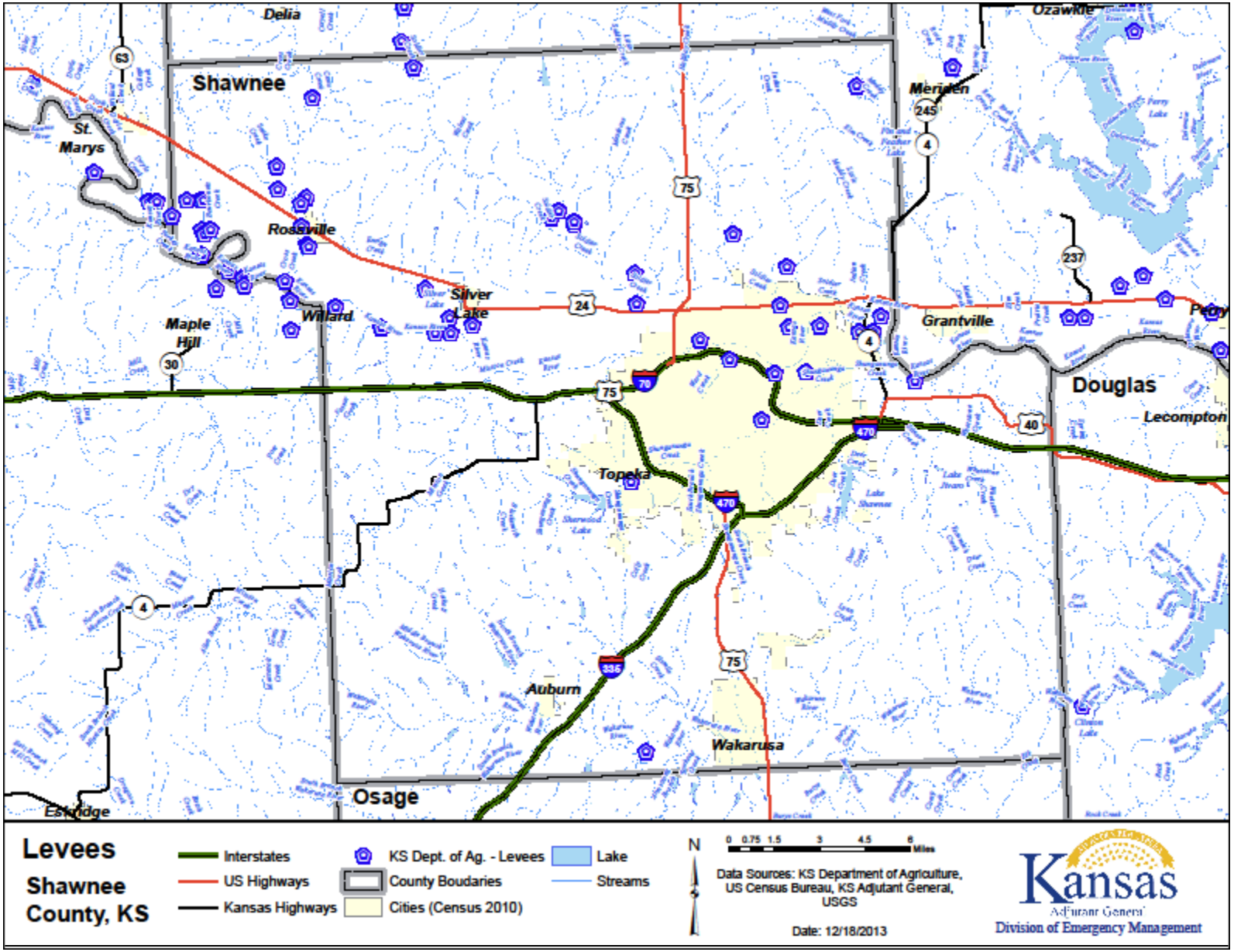

Fontana
Linn
Linn Valley
Greeley
163
Parker
La Cygne
152
Garnett
52
7
69
Pleasanton
Mound City
52
52
31
Blue Mound
Kincaid
59
239
Prescott
3
Bourbon
Mildred
Mapleton
Fulton
Levees
Linn
County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Levees
County Boudaries
Cities (Census 2010)
Lake
Streams
N
0 0.75 1.5 3 4.5 6
Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management


Baldwin City
Edgerton
Miami
Wellsville
Spring Hill
Bucyrus
Hillsdale
Louisburg
Paola
Rantoul
Osawatomie
Lane
Fontana
Linn Valley
Linn
56
33
35
68
69
169
7
Levees
Miami County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Levees
County Boudaries
Cities (Census 2010)
Lake
Streams
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management

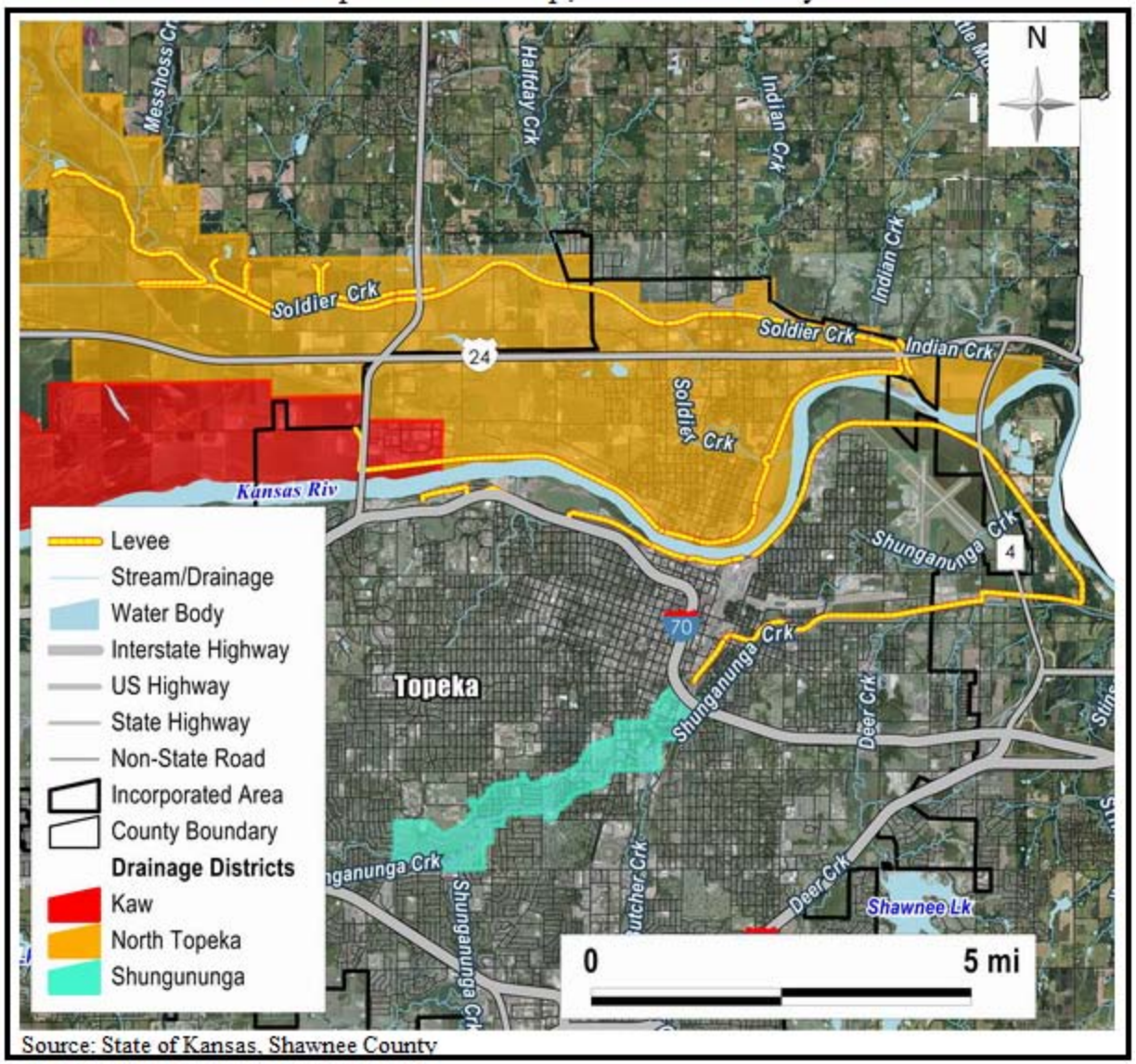
City of Osawatomie Levees, Miami County




Auburn
Wakarusa
Osage
Eskridge
Carbondale
Scranton
Overbrook
Burlingame
Franklin
Osage City
Vassar
Allen
Admire
Lyndon
Pomona
Ottawa
Quenemo
Reading
Melvern
Olivet
Williamsburg
Princeton
Lebo
Waverly
Levees
Osage County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Levees
County Boudaries
Cities (Census 2010)
Lake
Streams
N
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management


Delia
Ozawkie
Shawnee
Meriden
St. Marys
Rossville
Silver Lake
Willard
Maple Hill
Grantville
Perry
Douglas
Lecompton
Topeka
Auburn
Wakarusa
Osage
Eskridge
63
75
24
30
4
245
237
70
470
40
335
Levees
Shawnee County, KS
Interstates
US Highways
Kansas Highways
KS Dept. of Ag. - Levees
County Boudaries
Cities (Census 2010)
Lake
Streams
N
0 0.75 1.5 3 4.5 6 Miles
Data Sources: KS Department of Agriculture, US Census Bureau, KS Adjutant General, USGS
Date: 12/18/2013
Kansas
Adjutant General
Division of Emergency Management

Topeka Levee Map, Shawnee County



Source: State of Kansas, Shawnee County

Previous Occurrences and Extent

Notable previous dam and levee failures in east-central Kansas are listed below.

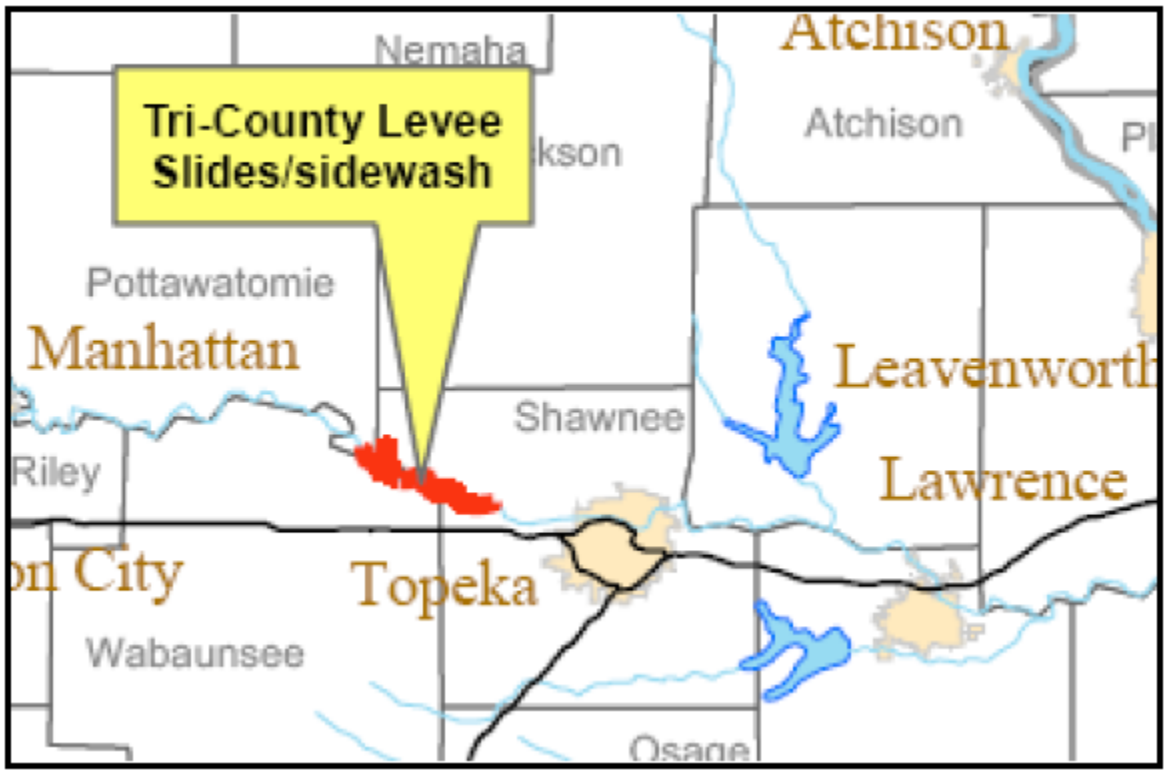
1998: Heavy rains and high winds damaged three Kansas reservoirs: Council Grove, John Redmond, and Fall River, all of which are high hazard dams.

Regional Dam Incidents, 1925-2012

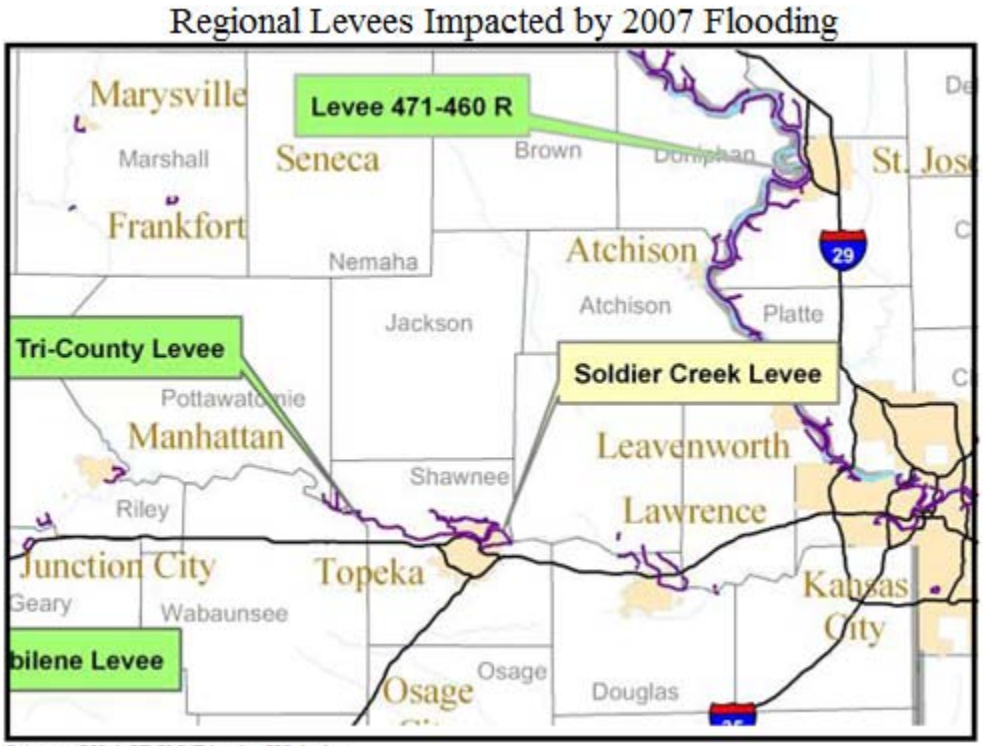
County	NID #	Dam Name	Incident Date	Incident Type	Dam Failure
Miami	KS02504	City of Louisburg	7/25/2001	Head cut in the emergency spillway; submerged outlet; principal spillway pipe leakage; hydrologically inadequate	No
Osage	KS01572	E. L.,Kitchen, Lake Oshawno Dam	5/18/1995	Concrete Deterioration; Embankment Slide	No
Shawnee	KS02885	KS no name 2885	1/23/2001	Concrete Deterioration	No

Source: Stanford University's National Performance of Dams Program

2010: Regional: Flooding in 2010 damage the federal Tri-County levee.



June and July 2007: Regional: Heavy rains in the region caused widespread flooding. The following map shows damaged regional levees in Kansas that are under the jurisdiction of the USACE Kansas City District.



1993: Regional: During the spring floods of 1993, which covered nine Midwest states, a high percentage of crop acres in the USACE Kansas City District floodplain areas suffered losses because of overtopping of nine of the 15 units in the federally constructed Missouri River Levee System and virtually all the nonfederal farm levees in the district.

Hazard Vulnerability and Impact

Dam Failure

The 2009 Kansas Water Plan states that some dams are exhibiting structural deficiencies because of age, while post-construction development downstream of others has raised their hazard class. Common problems with older dams include:

- Deteriorating metal pipes and structural components,
- Inadequate hydrologic capacity,
- Increased runoff because of upstream development, and
- Increased failure hazard because of downstream development.

To complete an analysis of vulnerability to dam failure as well as attempt to describe vulnerability in terms of the jurisdictions most threatened by dam failure, points were assigned to each type of dam and then aggregated for a total point score for each county. Points were assigned as follows for each dam: Low Hazard Dams, 1 point, Significant Hazard Dams, 2 points, High Hazard Dams, 3 points, High Hazard Dams without an Emergency Action Plan

(EAP), an additional 2 points, Federal Reservoir Dams, 3 points. This analysis does not intend to demonstrate vulnerability in terms of dam structures that are likely to fail, but rather provides a general overview of the counties that have a high number of dams, with weighted consideration given to dams whose failure would result in greater damages. The following table shows the results of this analysis.

Dam Failure Vulnerability Analysis

County	Low Hazard Dams	Significant Hazard Dams	High Hazard Dams	High Hazard Dams Without EAP	Federal Reservoirs	Vulnerability Rating	Vulnerability Level
Anderson	52	1	1	1	-	59	Medium
Coffey	54	2	1	1	1	66	Medium
Franklin	66	2	2	2		80	Medium
Linn	66	6	9	7	1	122	Medium-High
Miami	64	2	4	3	1	89	Medium
Osage	43	6	5	1	2	78	Medium
Shawnee	139	3	11	6	-	190	Medium-High
Regional Total	484	22	33	21	5	684	-

Source: Analysis utilizing data from: Kansas Department of Agriculture, Division of Water Resources, Water Structures program; U.S. Army Corps of Engineers; Bureau of Reclamation; U.S. Army, U.S. Fish and Wildlife

None of the regional counties are on the top 10 list for the State of Kansas for vulnerability to dam failure.

During the development of this plan, the Kansas Department of Agriculture, Division of Water Resources was working on a project to complete dam inundation mapping for High and Significant hazard dams. This project will is ongoing due to funding issues. A statewide dam inundation map does not exist at this time.

Levee Failure

To complete an analysis of vulnerability to levee failure as well as attempt to describe vulnerability in terms of the jurisdictions most threatened by levee failure, the MLI geodatabase along with census block data available in HAZUS MH 2.1 is used to determine the number of people and the value of development in these identified levee protected areas. This analysis does not attempt to evaluate which levees are more prone to overtopping or failure, but rather provide a general picture of those counties that have more people and property protected by levees and therefore the potential for more damage if failure or overtopping were to occur.

The following table presents the calculated value of structures and the contents of the structures protected by levees within the region, by applicable county. This data is to be used only for general determination of those areas of the state that could suffer the greatest losses in the event of levee failure events. Data limitations prevent a more accurate analysis including: lack of delineation of protected areas for all levees and, lack of statewide parcel-type data which would provide more accurate results in determining structures and values within levee protected areas.

Regional Populations and Values Protected by Levees

County	Structures Exposure	Contents Exposure	Total Exposure	Population Exposed
Coffey	$4,388	$2,737	$7,125	61
Franklin	$166,108	$120,730	$286,838	2,110
Miami	$147,029	$86,116	$233,145	2,711
Shawnee	$1,318,189	$960,065	$2,278,254	19,047
Regional Total	$1,635,714	$1,169,648	$2,805,362	23,929

Source: FEMA MLI, 2010

Shawnee County is in the state top 10 for both development and population protected by levees.

To estimate potential losses associated with levee failure, 20 percent loss was considered for all development (structure and contents) in levee protected areas as defined on the MLI. The 20 percent damage estimation is based on FEMA Flood Insurance Administration (FIA) depth-damage curves for a one-story structure with no basement flooded to two feet. Again, this analysis does not intend to make a determination as to specific levees that are prone to failure, but rather demonstrate an overall worst case scenario for those counties if they were all to fail in an event causing an average 20 percent in damages to the development protected by those levees.

Estimate of Potential Loss Due to Levee Failure

County	Value of Development in Levee Protected Areas	Loss Estimates at 20% Damage
Coffey	$7,125	$1,425
Franklin	$286,838	$46,629
Miami	$233,145	$57,368
Shawnee	$2,278,254	$455,651
Regional Total	$2,805,362	$561,072

Economic impacts and human injury or death are the primary concern with dam and levee failure. The future construction of dams and levees within the region and/or the development of additional structures or infrastructure within areas with dams or protected by levees would likely increase the impact of an event. The following items are of additional concern:

- Private levees and dams are a consideration when the risk of failure is analyzed. These levees and dams are normally maintained by their owners, which can often cost a great deal of money.
- The USACE maintains many levees in and around the planning area, however, there are also levees that are not federally maintained, so local jurisdictions or private property owners are responsible for maintaining the structures. As the levees age, the costs to repair and rebuild them will increase.

	Magnitude/Severity
Dam and Levee Failure	3.00

Local Concerns

The following detail specific local concerns as related to dam and levee failure:

- In Coffey County, a failure of the John Redmond Reservoir Dam could inundate the cities of Burlington and LeRoy.
- In Franklin County, the northern section of the City of Ottawa is protected by a levee system from the Marais des Cygnes River.
- In Miami County, the City of Osawatomie has areas on the north and south sides of the city that are protected by levee systems. The levee along the north protects the city from the Marias des Cygnes River, and the levee to the south protects the city from Pottawatomie Creek.
- In Miami County, the City of Paola is potentially at risk from a failure of the Heatherwood Estates Dam.
- In Osage County, approximately 10 structures near the City of Melvern are potentially at risk from a dam failure event.
- In Shawnee County, a failure of Milford Lake Dam could result in flood waters reaching the City of Rossville in 14-hours, the City of Silver Lake in 15-hours, and the City of Topeka in 17-hours. A failure of Tuttle Creek Lake Dam could result in flood waters reaching the City of Rossville in 7 hours, the City of Silver Lake in 9 hours, and the City of Topeka in 11 hours. Flood waters could potentially affect residential, commercial, and agricultural areas downstream.
- In Shawnee County, Lake Vaquero dam contains a manmade lake and was built in the early 1960s. The lake is surrounded by residences. It has been determined that the dam will require significant work to receive a permit and reach high safety standards necessitated by recent growth.

Future Development

Future development and population increase would tend to increase the likelihood of the population being impacted by a dam or levee failure event. Shawnee County is in the top 10 statewide for population and development protected by levees and Shawnee County is reporting population growth. It is not known if this growth is being accommodated by building in potential inundation zones, however, if that is the case the vulnerability to this hazard also increases. Regionally, $2,805,362 is currently protected by levees. In addition, regional population totals are estimated to rise from 279,511 persons in 2013 to 297,512 by 2040, with the increase seen in Franklin, Miami and Shawnee counties. These increases and future vulnerabilities may be offset as many of the flood prone cities have enacted floodplain ordinances limiting development in hazardous areas and/or are members of the NFIP.

Probability of Future Occurrences

The variability of the size and construction of the dams in east-central Kansas makes estimating the probability of dam failure difficult on any scale less than a case-by-case basis. The limited data on previous occurrences indicates that in the last 87 years, there have been 7 recorded dam failure events in all of Kansas, which is less than 1 event in 10 years. Although both federal and

nonfederal levees have been damaged in previous regional flood events such as the floods of 2007 and 2010, the damage has not resulted in catastrophic failure and/or damages. Levees in Kansas that have been constructed to protect development and populations from the 1-percent annual chance flood are routinely inspected and maintained. Based on current historical data pertaining to damaging/significant levee failure incidents in the State of Kansas, this hazard's CPRI probability is unlikely.

	Probability
Dam and Levee Failure	1.29

Consequence Analysis

When a dam fails, the stored water can be suddenly released and have catastrophic effects on life and property downstream. Homes, bridges, and roads can be demolished in minutes. Emergency plans written for dams include procedures for notification and coordination with law enforcement and other governmental agencies, information on the potential inundation area, plans for warning and evacuation, and procedures for making emergency repairs.

The impact of levee failure during a flooding event can be very similar to a dam failure in that the velocity of the water caused by sudden release as a result of levee breach can result in a flood surge or flood wave that can cause catastrophic damages. If the levee is overtopped as a result of flood waters in excess of the levee design, impacts are similar to flood impacts. The information in the following table provides the Consequence Analysis.

Dam Failure Consequence Analysis

Subject	Ranking	Impacts of Dam and Levee Failure
Health and Safety of Persons in the Area of the Incident	Severe	Localized impact expected to be severe for the inundation area and moderate to minimal for other affected areas.
Responders	Minimal	Impact to responders is expected to be minimal with proper training. Impact could be severe if there is lack of training.
Continuity of Operations	Minimal	Temporary relocation may be necessary.
Property, Facilities, and Infrastructure	Minimal to Severe	Localized impact could be severe in the inundation area of the incident to facilities and infrastructure. The further away from the incident area the damage lessens.
Delivery of Services	Minimal to Severe	Delivery of services could be affected if there is any disruption to the roads and/or utilities. Minimal to severe depending on area size and location affected.
Environment	Severe	Impact will be severe for the immediate impacted area. Impact will lessen as distance increases.
Economic Conditions	Minimal to Severe	Impacts to the economy will depend on the scope of the inundation and the time it takes for the water to recede.
Public Confidence Governance	Minimal to Severe	Perception of whether the failure could have been prevented, warning time, and response and recovery time will greatly impact the public's confidence.

3.7.4 DROUGHT

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Drought	2.43	1.86	1.00	4.00	**2.20**

Description

In general, drought can be defined as a condition of moisture levels significantly below normal for an extended period of time over a large area that adversely affects plants, animal life, and humans. Because these dry conditions develop gradually, and impact regions differently, there is no standard way to determine when a drought begins or ends, or to objectively determine its severity.

Drought can also be defined in terms of meteorology, agricultural, hydrological and socio-economic. The first three definitions apply to ways to measure drought as a physical phenomenon. The last deals with drought in terms of supply and demand, tracking the effects on socioeconomic systems

- **Meteorological Drought:** The degree of dryness as related to an average amount of moisture, and the duration of the dry period. Definitions of meteorological drought must be considered as region specific since the atmospheric conditions that result in deficiencies of precipitation are highly variable.
- **Hydrological Drought:** The effects of periods of precipitation shortfalls on surface or subsurface water supply. The frequency and severity of hydrological drought is often defined on a watershed or river basin scale. Hydrological droughts are usually out of phase with or lag the occurrence of meteorological and agricultural droughts. It takes longer for precipitation deficiencies to show up in components of the hydrological system such as soil moisture, streamflow, and groundwater and reservoir levels.
- **Agricultural Drought:** Links the characteristics of meteorological and/or hydrological drought to agricultural impacts, focusing on precipitation shortages, differences between actual and potential evapotranspiration, soil water deficits, reduced groundwater or reservoir levels, and so forth.
- **Socioeconomic Drought:** The lack of available water has a direct effect on the population. In general, this results in the demand for an economic good exceeding the supply as a result of a weather-related shortfall in water supply.

The impacts of drought can be categorized as economic, environmental, or social. Many economic impacts occur in agriculture and related sectors, including increasing food prices globally. In addition to obvious losses in yields in both crop and livestock production, drought is associated with increases in insect infestations, plant disease, and wind erosion. Droughts also bring increased problems with insects and disease to forests and reduce growth. The incidence of wildfires increases substantially during extended droughts, which in turn places both human and wildlife populations at higher levels of risk. Income loss is another indicator used in assessing the impacts of drought because so many sectors are affected.

Although environmental losses are difficult to quantify, increasing public awareness and concern for environmental quality has forced public officials to focus greater attention and resources on these effects. Environmental losses are the result of damages to plant and animal species, wildlife habitat, and air and water quality, wildfires, degradation of landscape quality, loss of biodiversity, and soil erosion. Some of the effects are short-term and conditions quickly return to normal following the end of the drought. Other environmental effects linger for some time or may even become permanent. Wildlife habitat, for example may be degraded through the loss of wetlands, lakes, and vegetation. However, many species will eventually recover from this temporary aberration. The degradation of landscape quality, with increased soil erosion, may lead to a more permanent loss of biological productivity of the landscape.

Periods of drought are normal occurrences in east-central Kansas. Drought in east-central Kansas is caused by severely inadequate amounts of precipitation that adversely affect farming and ranching, surface and ground water supplies, and uses of surface waters for navigation and recreation.

The most widely used tool to measure and report drought conditions is the Palmer Drought Severity Index (PDSI). The PDSI combines temperature, precipitation, evaporation, transpiration, soil runoff and soil recharge data for a given region to produce a single negative number representing conditions there. This index serves as an estimate of soil moisture deficiency, which roughly correlates with a drought's severity, and thus, its impacts.

The U.S. Drought Monitor, an organization run by government and academic partners that maintains a nationwide drought map, uses the PDSI to categorize dry weather into five levels of severity:

U.S. Drought Monitor Severity Rating

Designation	Category	PDSI Rating
Abnormally Dry	D0	-1.0 to -1.9
Moderate Drought	D1	-2.0 to -2.9
Severe Drought	D2	-3.0 to -3.9
Extreme Drought	D3	-4.0 to -4.9
Exceptional Drought	D4	-5.0 to -5.9

The effects range from slow crop and pasture growth to widespread crop failure and water emergencies. Additionally, the Drought Monitor defines droughts as either short-term, if they have lasted less than six months, and long-term for prolonged events.

The State of Kansas Operations Plan (June 30, 2012) utilizes a phased response to drought and identifies specific program actions related to each drought stage. The following provides a brief summary of this phased response approach.

- **Drought Watch** – Impacts include some damage to crops and pastures, high rangeland fire danger and a growing threat of public water supply shortages. The Governor is

notified and the Governor's Drought Response Team assembled. Open outdoor burning bans may be imposed. Public water systems may ask for voluntary water use restrictions.

- **Drought Warning** – Crop and pasture losses are likely with some stock water shortages and very high rangeland fire danger. Public water supply shortages are present and some stream flow targets are not being met. Public water systems may impose mandatory water use restrictions. Urgent Kansas Water Marketing Program surplus water supply contracts can be authorized for municipal and industrial users. The Governor may request emergency haying and grazing authorization for Conservation Reserve Program acres.

- **Drought Emergency** – Widespread major crop and pasture losses are accompanied by stock water shortages and extreme rangeland fire danger. Severe public water supply shortages are widespread with many stream flow targets not met. The Governor may declare an outdoor burning ban. Public water systems may impose additional mandatory water use restrictions. Emergency Kansas Water Marketing Program surplus water supply contracts can be authorized for municipal and industrial users. Emergency water withdrawals from Corps of Engineers reservoirs and state fishing lakes can be authorized. Corps of Engineers emergency water assistance to municipalities is available if needed. The Governor may request a USDA Secretarial disaster designation for drought.

	Warning Time
Drought	1.00

	Duration
Drought	4.00

Hazard Location

Drought tends to affect broad regions and the entire planning area is subject to drought occurrence at roughly equal probability. The impacts of prolonged drought are most significant in agricultural areas of the region. In addition to impacts on the region's agricultural areas, drought can affect cities by severely limiting public water supplies due to depletion of natural water sources and greatly increased demand.

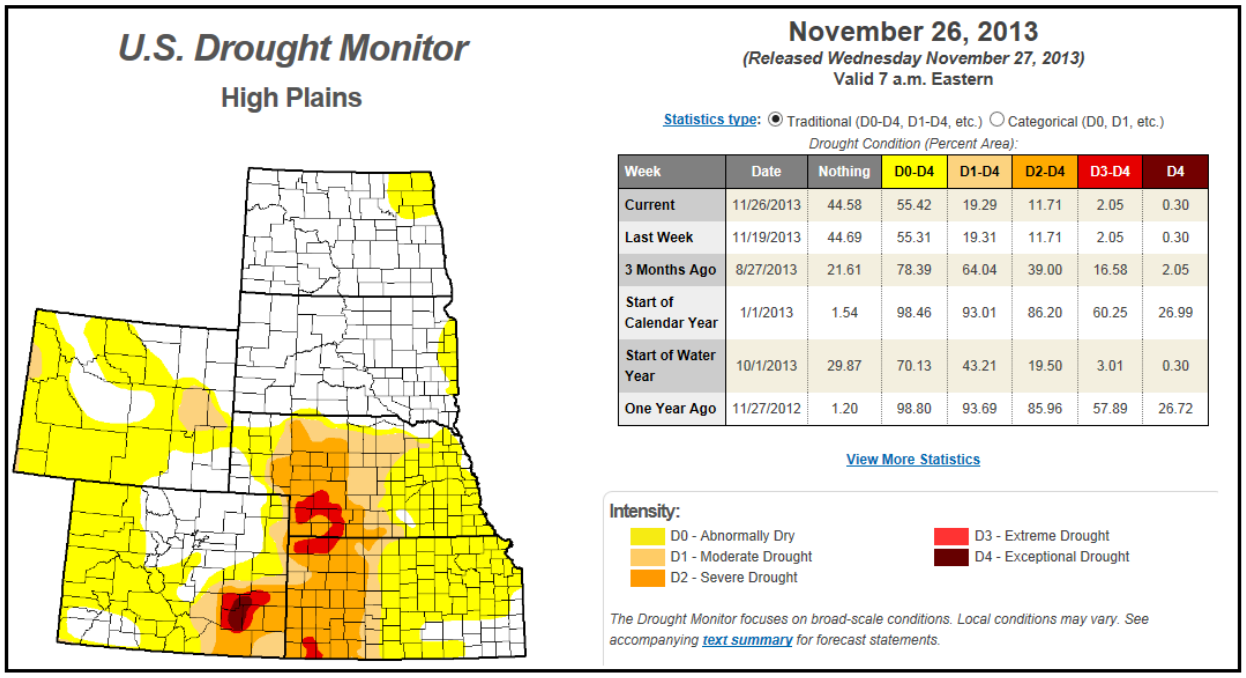
As of November 22, 2013, the Kansas Water Office (KWO) has indicated the following drought conditions and advisories for the entire planning region.

- Executive Order 13-02 remains in effect with all regional counties remaining under Warning or Watch.

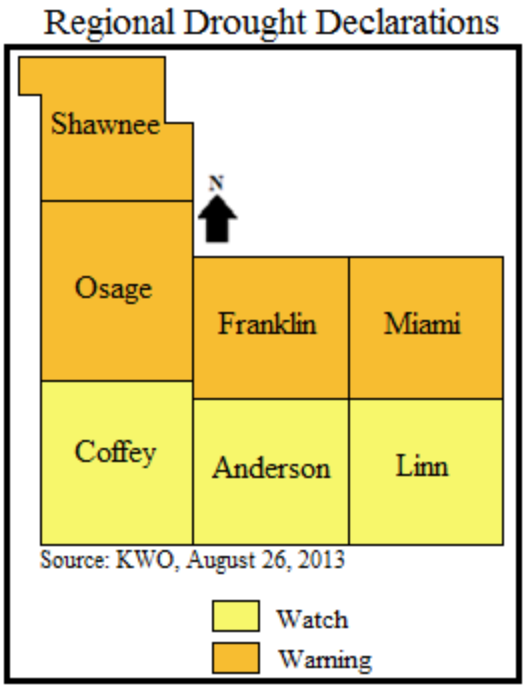
- The US Drought Monitor has indicated conditions in Kansas have improved slightly so far in November. The Seasonal Drought Outlook through January 2014 (released October 17) indicates drought conditions to be gone in central and eastern Kansas.

- All 105 Kansas counties have been declared federal disaster areas due to drought in 2013, making producers (if they meet eligibility requirements) eligible for relief programs and assistance through USDA.

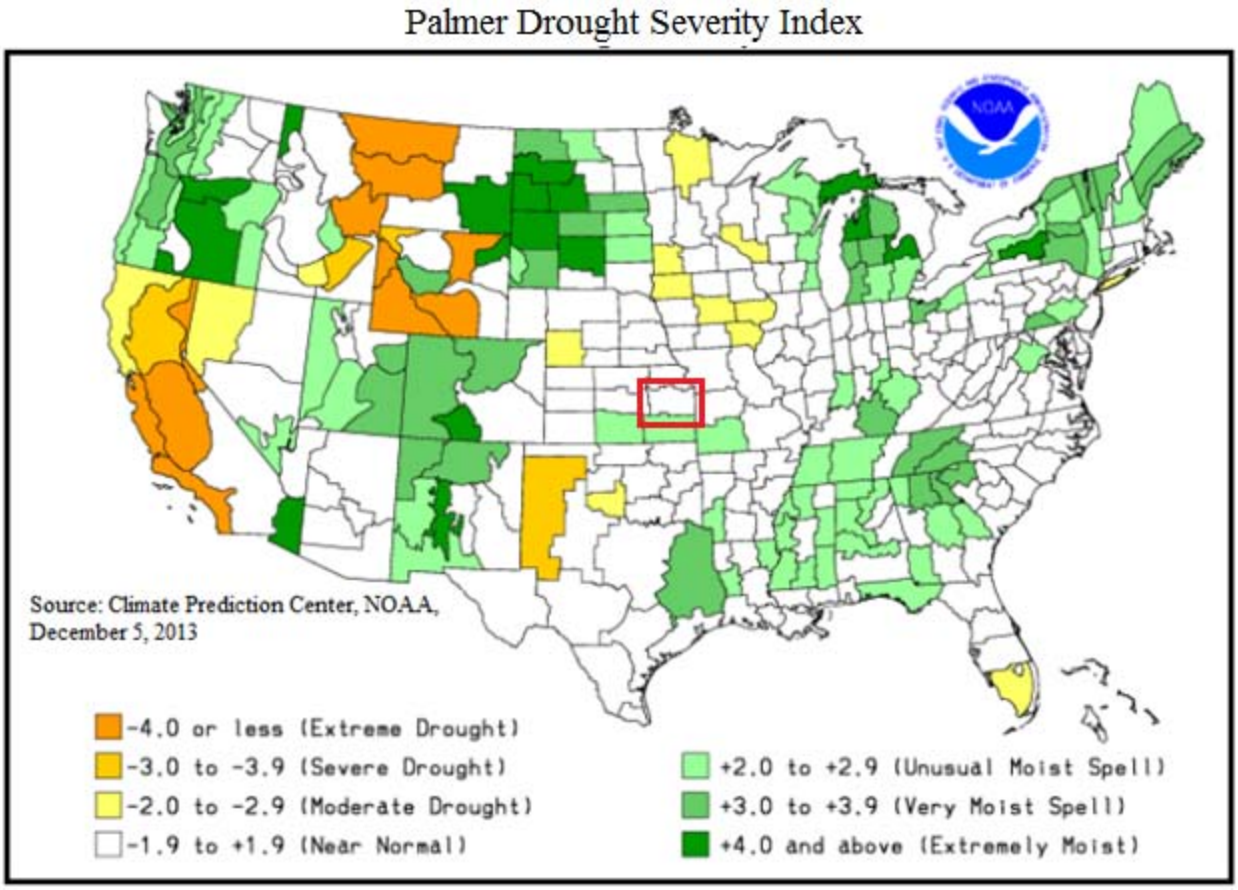
The following U.S. Drought Monitor map from November 26, 2013 shows that all of east-central Kansas is currently in drought conditions, classified as abnormally dry.



The following map August 26, 2013 from the KWO shows that all of east-central Kansas is under a Drought Watch or Warning.



The following map shows PSDI information and designations for the region.



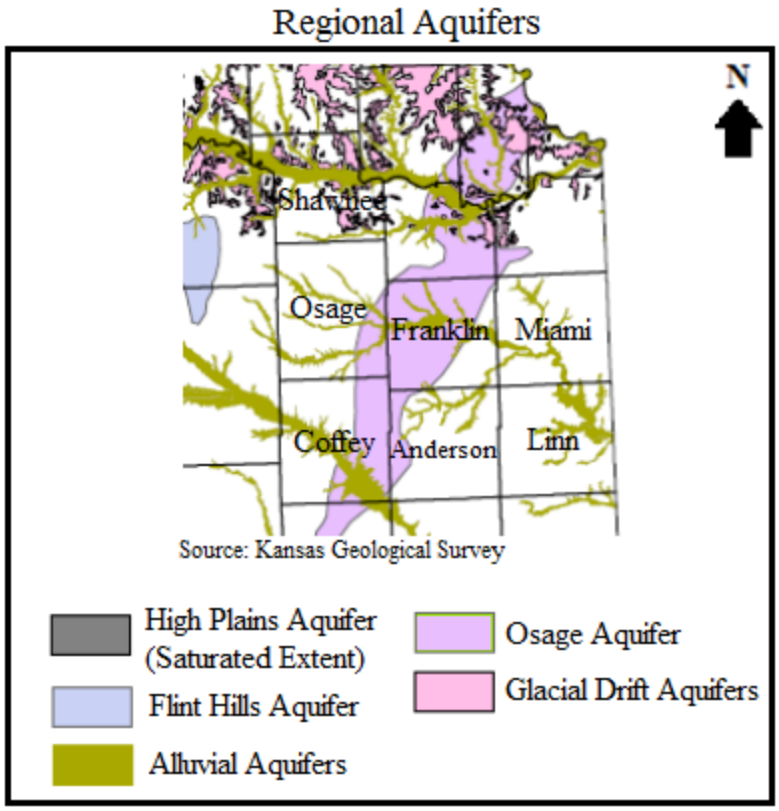
The following table provides the latest drought designations and seasonal outlooks for the region.

Regional Drought Designations and Outlooks

County	KWO Drought Designation	Kansas 2013 Secretarial Designations for Drought	PDSI - U.S. Drought Monitor	NWS Climate Prediction Center Seasonal Outlook through February 28, 2014
Anderson	Watch	Primary	D0 (Abnormally Dry)	No Drought Posted/Predicted
Coffey	Watch	Primary	D0 (Abnormally Dry)	No Drought Posted/Predicted
Franklin	Warning	Primary	D0 (Abnormally Dry)	No Drought Posted/Predicted
Linn	Watch	Primary	D0 (Abnormally Dry)	No Drought Posted/Predicted
Miami	Warning	Primary	D0 (Abnormally Dry)	No Drought Posted/Predicted
Osage	Warning	Primary	D0 (Abnormally Dry)	No Drought Posted/Predicted
Shawnee	Warning	Primary	D0 (Abnormally Dry)	No Drought Posted/Predicted

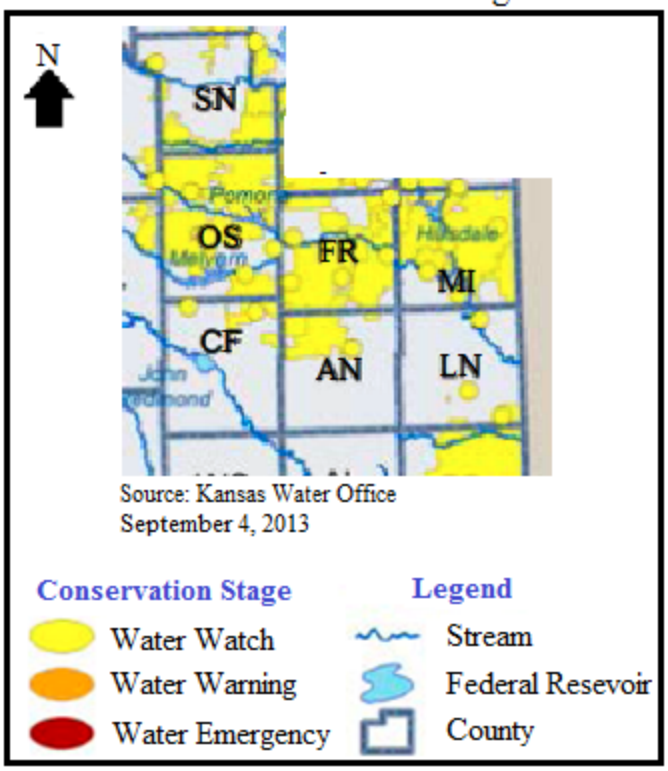
Source: KWO

In east-central Kansas, the primary source of water is surface water, including rivers, federal reservoirs, multipurpose small lakes, and municipal lakes. The following map shows the aquifers in east-central Kansas and adjacent counties.



The following map from the KWO shows public water suppliers water conservation stages as of January 23, 2013.

Public Water Suppliers :
Water Conservation Stages



The following tables provide information from the KWO Kansas 2013 D rought Update on Known Conservation Stages.

KWO, Kansas 2013 Drought Update, Known Conservation Stages

County	Public Water Supply	2013 Stage	Conservation Stage Designation
Anderson	Anderson RWD 04	1	Water Watch
Anderson	Garnett	1	Water Watch
Coffey	Lebo	1	Water Watch
Coffey	Waverly	1	Water Watch
Coffey +	PWWSD No. 12	1	Water Watch
Franklin	Franklin RWD 01	1	Water Watch
Franklin	Franklin RWD 02	1	Water Watch
Franklin	Franklin RWD 04	1	Water Watch
Franklin	Franklin RWD 06	1	Water Watch
Franklin	Ottawa	1	Water Watch
Franklin	Pomona	1	Water Watch
Franklin	Princeton	1	Water Watch
Franklin	Rantoul	1	Water Watch
Franklin	Wellsville	1	Water Watch
Franklin	Williamsburg	1	Water Watch

KWO, Kansas 2013 Drought Update, Known Conservation Stages, Continued

County	Public Water Supply	2013 Stage	Conservation Stage Designation
Linn	La Cygne	1	Water Watch
Miami	Louisburg	1	Water Watch
Miami	Marais des Cygnes Public Utility Authority	1	Water Watch
Miami	Miami RWD 01	1	Water Watch
Miami	Miami RWD 02	1	Water Watch
Miami	Miami RWD 04	1	Water Watch
Miami	Osawatomie	1	Water Watch
Miami	Paola	1	Water Watch
Osage	Burlingame	1	Water Watch
Osage	Lyndon	1	Water Watch
Osage	Osage City	1	Water Watch
Osage	Osage RWD 02	1	Water Watch
Osage	Osage RWD 03	1	Water Watch
Osage	Osage RWD 04	1	Water Watch
Osage	Osage RWD 05	1	Water Watch
Osage	Osage RWD 07	1	Water Watch
Osage	Osage RWD 08	1	Water Watch
Osage	Quenemo	1	Water Watch
Shawnee	Rossville	1	Water Watch
Shawnee	Shawnee RWD 08	1	Water Watch

Source: KWO Kansas 2013 Drought Update (November 22, 2013)

Drought can severely challenge a public water supplier through depletion of the raw water supply and greatly increased customer water demand. Even if the raw water supply remains adequate, problems due to limited treatment capacity or limited distribution system capacity may be encountered. A 2007 assessment of 800 city or rural water district drinking water systems by the KWO found 132 to be drought vulnerable.

The following table shows regional water suppliers that may be vulnerable to drought conditions. The following are the drought limitation categories associated with this information:

- **Basic Source Limitation** - The supplier's primary raw water source is particularly sensitive to drought as evidenced by depleted streamflow, depleted reservoir inflow and storage, or by declining water levels in wells. Restrictions imposed due to inability to use a well(s) because water quality problems were considered indicative of a basic source limitation.
- **Contractual Limitation** - The supplier's sole water source is purchased from another system that is drought vulnerable and there is a drought-cut-off clause in their water purchase contract. In such situations where there is not a drought cut-off clause, the purchaser is considered drought vulnerable under the same limitation category as the seller.

- **Distribution System Limitation** - The supplier has difficulty or is unable to meet drought-induced customer demand for water due to inadequate finished water storage capacity, inadequate pumping capacity, or inadequate transmission line sizes.
- **Minimum Desirable Streamflow** - The supplier reported imposing restrictions because of minimum desirable streamflow administration. Water rights junior to those granted for maintenance of established minimum desirable flows are subject to such administration.
- **Single Well Source** - The supplier relies upon a single well as its sole source for raw water. Suppliers with one active well and one emergency well were considered drought vulnerable because emergency wells are not a dependable long-term water source. Excessive hours of operation to meet drought-induced customer demand for water will result in the increased likelihood of mechanical breakdown with no alternative water supply source available.
- **Treatment Capacity Limitation** - The supplier has difficulty or is unable to meet drought-induced customer demand for water due to inadequate raw water treatment capacity.
- **Water Right Limitation** - The supplier reported imposing restrictions because the quantity of water they are authorized to divert under their water right(s) was insufficient to meet customer demands.

Regional Drought Vulnerable Public Water Suppliers

County	Public Water Supplier	2007 Limitation Category List* and/or 2012 Conservation Stage**	2007 List	2013 Conservation Stage
Anderson	Anderson RWD 04	Water Watch		1
Anderson	Anderson RWD 05	Water Warning		
Anderson	Garnett	Water Watch		1
Coffey	Gridley	Water Warning		
Coffey	Lebo	Water Watch		1
Coffey	LeRoy	Water Warning		
Coffey	New Strawn	Water Warning		
Coffey	PWWSD No. 12	Water Watch		
Coffey	Waverly	Water Watch		1
Franklin	Franklin RWD 01	Contractual, Water Watch	X	1
Franklin	Franklin RWD 02	Water Watch		1
Franklin	Franklin RWD 04	Water Watch		1
Franklin	Franklin RWD 06	Water Watch		1
Franklin	Ottawa	Water Watch		1
Franklin	Pomona	Water Watch		1
Franklin	Princeton	Water Watch		1
Franklin	Rantoul	Water Watch		1
Franklin	Wellsville	Distribution System & Water Watch	X	1
Franklin	Williamsburg	Water Watch		1
Labette	Oswego	Water Warning		
Linn	La Cygne	Water Watch		1

Regional Drought Vulnerable Public Water Suppliers, Continued

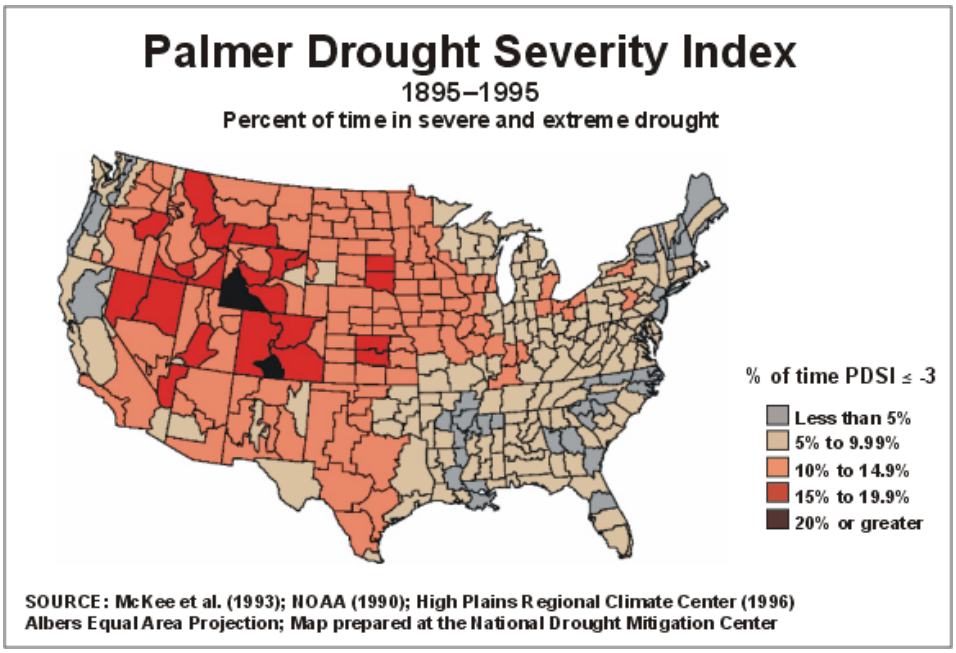
Linn	Linn RWD 02	Basic Source	X	
Linn	Pleasanton	Basic Source	X	
Miami	Fontana	Basic Source, Single Well Source	X	
Miami	Louisburg	Treatment Capacity & Water Watch	X	
Miami	Marais des Cygnes Public Utility Authority	Water Watch		1
Miami	Miami RWD 01	Water Watch		1
Miami	Miami RWD 02	Water Watch		1
Miami	Miami RWD 04	Water Watch		1
Miami	Osawatomie	Water Watch		1
Miami	Paola	Water Watch		1
Osage	Burlingame	Water Watch		1
Osage	Lyndon	Water Watch		1
Osage	Melvern	Water Watch		
Osage	Osage City	Water Watch		1
Osage	Osage RWD 02	Basic Source, Distribution System & Water Watch	X	1
Osage	Osage RWD 03	Water Watch		1
Osage	Osage RWD 04	Water Watch		1
Osage	Osage RWD 05	Water Watch		1
Osage	Osage RWD 07	Water Watch		1
Osage	Osage RWD 08	Water Watch		1
Osage	Overbrook	Unknown	X	
Osage	Quenemo	Water Watch		1
Shawnee	Rossville	Water Watch		1
Shawnee	Shawnee Consolidated RWD 01	Water Watch		
Shawnee	Shawnee Consolidated RWD 03	Water Watch		
Shawnee	Shawnee RWD 04C	Unknown	X	
Shawnee	Shawnee RWD 08	Water Watch		1
Shawnee	Topeka	Water Watch		

Source: KWO

Areas that appear to be the most vulnerable to drought are the focus of the Governor's Drought Response Team for planning, management and mitigation activities. While drought does not usually cause damage to buildings and critical facilities, work and living locations do affect people. However, as regional counties experience decreases and agricultural activities it could potentially create lower demands on public water suppliers.

Previous Occurrences and Extent

As is indicated in the following PDSI map, droughts are common throughout the east-central Kansas planning region. For the period of 1895 to 1995, east-central Kansas has had a PDSI rating of less than -3 (Severe Drought) 10% to 14.95% of the time.



The following are notable instances of drought in the planning region:

2013: Executive Order 13-02 remains in effect with all regional counties remaining under Warning or Watch

2012: The Governor signed three executive orders this year for drought with all east-central Kansas counties being declared in emergency drought status with the last order. The Governor approved the June 2012 Operations Plan for the Governor's Drought Response Team which updated activities and responses. The Kansas Water Office increased the frequency of the Drought/Climate report to weekly for much of the year due to intensity of conditions.

2012: USDA agricultural disaster due to drought was declared for all 105 counties in Kansas based on crop losses through a series of six designations in July and August 2012. This makes producers eligible for certain emergency funding. The crop losses were estimated at $1.5 billion for the State. At least 197 communities and rural water districts in Kansas had voluntary or mandatory restrictions on water use as drought and high demand depleted public water supplies and challenged treatment and distribution. Mandatory restrictions were placed on water right holders junior to minimum desirable streamflow in as many as 17 locations affecting 540 water appropriations. Livestock ponds, feed and pasture were insufficient to meet needs. Contingencies for feed and water

were made available to producers through hay networks, motor carrier authorities and emergency water from state fishing lakes and federal reservoirs. Despite these efforts, livestock numbers in June marked the lowest cattle inventory since 1973. The risk of wildfires was high throughout the State with as many as 78 counties issuing burn bans over some period of 2012. At least 41,000 acres burned. Dry conditions in the fall of 2012 resulted in dust storms visible by satellite.

2011: Precipitation for 2011 was -8.92 inches below normal for the year statewide, with climatic divisions varying from -3.51 to -14.36 inches below normal. The Governor signed six executive orders between April and November for various drought stages over the year, increasing the number of counties to 100 in the November order including 40 counties in emergency stage. The year began with extraordinarily low winter moisture and the very little precipitation continued throughout the year. Throughout the year the severity and area affected varied. Conditions improved slightly through the end of the year. USDA agricultural disaster due to drought was declared for 70 counties in Kansas based on crop losses. Kansas agricultural losses were estimated by the Kansas Department of Agriculture at over $1.77 billion due to drought. Statewide, soil moisture was around 50 percent adequate as 2011 began but never exceeded 55 percent for topsoil moisture until November. Significant portions of southern Kansas had below normal monthly-average stream flows begin to occur in April, increasing in area and or severity each month until peaking in July.

October 2006: Kansas also experienced drought conditions in 2006. In October 2006, the U.S. Department of Agriculture designated 57 Kansas counties primary natural disaster areas because of losses caused by the combined effects of various disasters that occurred during the past year, including a late spring freeze, drought, high winds, and extreme temperatures. Provisional stream flow data from the U.S. Geological Survey indicated that several long-term low stream flow records were broken in July.

May 4, 2002–October 1, 2003: Low water in the Missouri River interfered with river barge traffic and necessitated the release of water from Milford, Tuttle Creek, and Perry Lakes. This drought caused many counties to impose water use restrictions and burn bans. Grazing was prohibited on government lands to protect the drought-stressed grass, affecting thousands of cattle. Emergency haying and grazing was allowed by the USDA on Conservation Reserve Program lands. All 105 counties were eligible for federal assistance through the USDA. The drought had a $1.1 billion impact on crop production.

1988–1992: The severity of this drought varied across the state. It was most severe in the southwestern, central, and northeastern parts of the state but minimal in the northwestern and southeastern parts. Surface-water supplies were sufficient to meet demands through the end of water year 1988, but rainfall during this period was less than 50% of the long-term average, so quantities were insufficient to maintain soil moisture or contribute to ground-water supplies. Estimated drought-related losses to 1988 crops were $1 billion. Water levels in shallow aquifers declined rapidly and led to the abandonment of many domestic water wells. The drought of 1988 continued into the 1990s, but at a reduced level.

1974–1982: This appeared to be a series of relatively short droughts at some stream gauging stations, but longer droughts at others (similar to the 1962–1972 droughts). The recurrence interval of this drought was greater than 25 years in the north-central and southeastern parts but was between 10 and 25 years across the remaining eastern two-thirds of the state. The severity of this drought could not be determined for the western third of the state.

1962–1972: The duration of this regional drought varied considerably across Kansas. Many of the streamflow records indicated alternating less than average and greater-than-average flows, while others indicated less than average flows for the entire period. The recurrence interval was generally greater than 25 years but was between 10 and 25 years in parts of the northwestern, northeastern, southern, and southeastern areas of the state.

1952–1957: This regional drought had a recurrence interval greater than 25 years statewide. One exception was in the Big Blue River Basin, where the recurrence interval was 10-25 years. Because of its severity and areal extent, this drought is used as the base period for studies of reservoir yields in Kansas. In 1954, 41 counties were declared eligible for aid under the Emergency Feed program. During this period, 175 cities reported water shortages, most of which restricted water use.

1929–1942: This drought, which includes the Dust Bowl of the 1930s, was regional in scale and affected many of the Midwestern and western states. Nevertheless, it ranks among the most significant national events of the twentieth century. The recurrence interval was greater than 25 years throughout Kansas. Drought, wind, and poor agricultural practices combined to result in enormous soil erosion. Agricultural losses were extreme, and many farms were abandoned. Effects of the drought sent economic and social ripples throughout the country, contributing to the economic, physical, and emotional hardships of the Great Depression.

Hazard Vulnerability and Impact

Droughts have historically had the greatest impact on the largest number of people of all weather phenomenon, according to the National Climatic Data Center (NCDC). Recent droughts, such as in 1988 and 2000, have had serious economic impacts. Between 1980 and today, 16 identified drought events within the United States have cost a combined $210 billion. In June 2012, 55.79% of the land in the lower 48 U.S. states, including the east-central region of Kansas, were in a drought. This represents the highest figure in the 12-year history of the U.S. Drought Monitor.

The following statistical analysis uses two significant factors in determining the drought vulnerability for east-central Kansas. One is the USDA Risk Management Agency's annualized insured crop losses as a result of drought conditions during the ten-year period of 2002-2011, with the ratio being all sums paid as indemnities under any eligible crop insurance policy to that portion of the premium designated for anticipated losses and a reasonable reserve, other than that portion of the premium designated for operating and administrative expenses, and the number of

drought vulnerable public water suppliers in Kansas from the information provided above. It was determined that all counties in east-central Kansas have either insured crop loss and/or drought vulnerable public water suppliers thus all counties are rated at least at a medium vulnerability rating since agriculture is a major economic factor in most east-central Kansas counties and public water supply is an essential service to all east-central Kansans.

The rating values of the two factors were divided by 50 percent to determine the total drought vulnerability rating. The total drought vulnerability rating put all counties in either the medium, medium-high or high category. The following table provides the factors considered and the rating values assigned.

Ranges for Drought Vulnerability Factor Ratings

Factors Considered	Low (1)	Low-Medium (2)	Medium (3)	Medium-High (4)	High (5)
Crop Loss Ratio Rating	.599 to 2.817	2.818 to 4.595	4.596 to 6.373	6.374 to 8.151	8.152 to 14
Drought Vulnerable Public Water Supplies Ratio Rating	1	2	3-6	7-9	10-14
Total Drought Vulnerability Rating	n/a	n/a	1	2 to 3	4 to 5

The following table shows the variance of drought conditions by county in east-central Kansas.

Regional Drought Vulnerability Rating

County	Crop Exposure (2007 Census of Agriculture)	Annualized Crop Insurance Paid/Drought Damage	Annual Crop Claims Ratio	Crop Loss Ratio Rating	Number of Drought Vulnerable Public Water Suppliers	Drought Vulnerable Public Water Suppliers Rating	Total Rating (Crops & Water Suppliers)	Vulnerability Rating
Anderson	$33,029,000	$1,732,725	5.246%	3	3	3	6	Medium-High
Coffey	$25,497,000	$1,012,932	3.973%	2	6	3	5	Medium-High
Franklin	$32,349,000	$1,051,820	3.251%	2	10	5	7	High
Linn	$13,053,000	$1,138,667	8.723%	5	3	3	8	High
Miami	$27,726,000	$598,150	2.157%	1	8	4	5	Medium-High
Osage	$27,618,000	$1,013,497	3.670%	2	12	5	7	High
Shawnee	$32,959,000	$421,410	1.279%	1	6	3	4	Medium-High
Regional Total	$192,231,000	$6,969,199.70	-	-	48	-	-	-

Source: USDA Risk Management Agency

A drought period can last for months, years, or even decades. It is rarely a direct cause of death, though the associated heat, dust, and stress can all contribute to increased mortality. Also, as counties experience decreases in population it will create lower demands on public water suppliers.

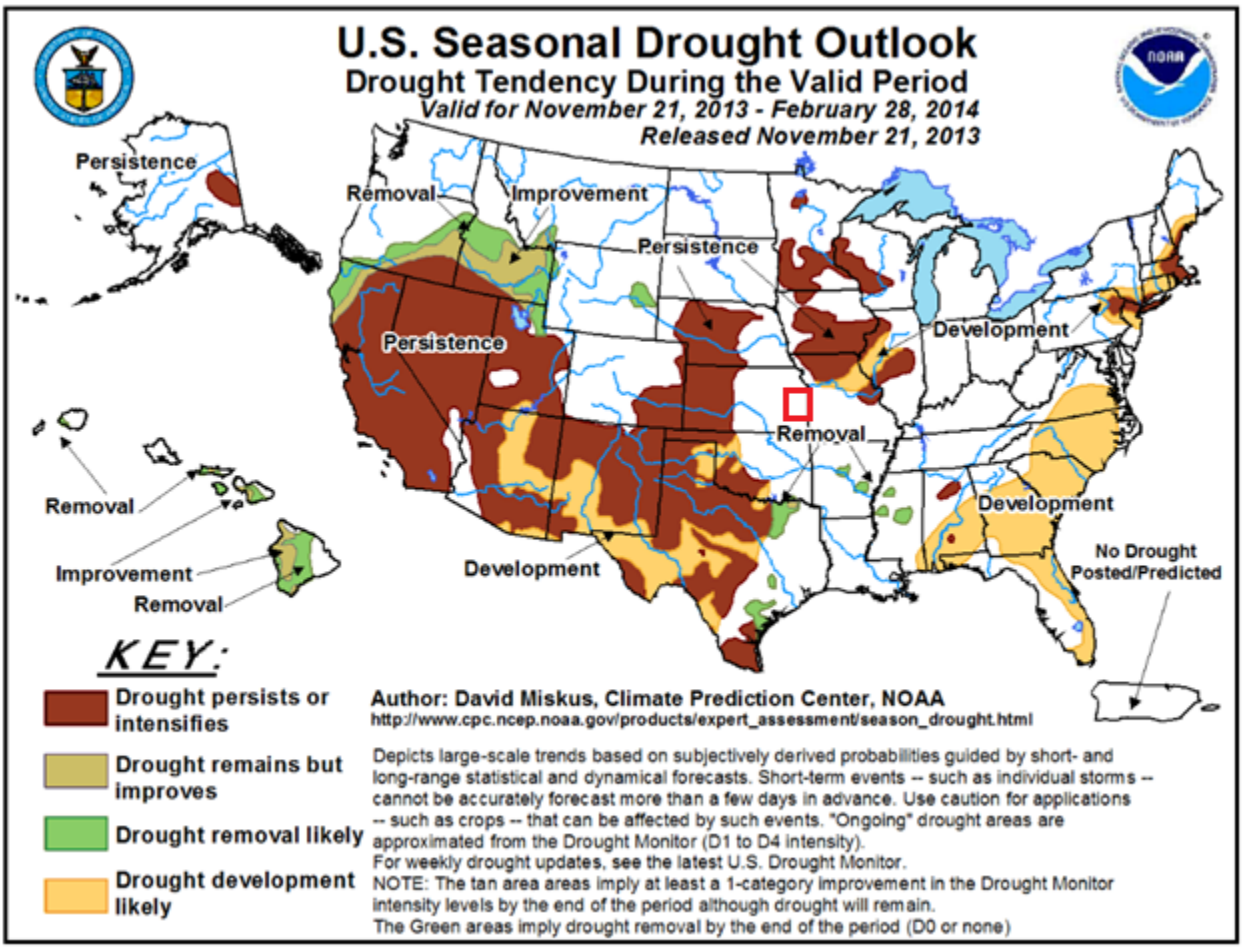
	Magnitude/Severity
Drought	1.86

Future Development

Future development of infrastructure and agricultural resources and/or increases in population would tend to increase the risk of this hazard. Increases in this type of development could potentially result in impacts on the growth and development of crops and livestock, on utility delivery due to either damage or increased demand, and on an individual basis due to foundation damages to homes.

Probability of Future Occurrences

Although drought is not predictable, the National Oceanic and Atmospheric Administration (NOAA) long-range outlooks indicate no drought posted or predicted.



In recent years, drought has affected certain regional counties on a reoccurring basis. With the possibility of climate change, this hazard may affect more areas of the region more often. Based on historical Kansas Drought Stage Declarations, (26 declarations in 11 years), and the Drought

Impact Reporter reporting 363 drought impacts in Kansas between January 2002 and September 2012, east-central Kansas can expect a drought occurrence at a minimum of every 3 years.

	Probability
Drought	2.43

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Drought Consequence Analysis

Subject	Ranking	Impacts of Drought
Health and Safety of Persons in the Area of the Incident	Minimal - Moderate	Drought impact tends to be agricultural however, because of the lack of precipitation water supply disruptions can occur which can affect people. Impact is expected to be minimal.
Responders	Minimal	Impact to responders is expected to be minimal.
Continuity of Operations	Minimal	Minimal expectation for utilization of the COOP.
Property, Facilities, and Infrastructure	Minimal to Severe	Impact to property, facilities, and infrastructure could be minimal to severe, depending on the length and intensity of the drought. Structural integrity of buildings, and buckling of roads could occur.
Delivery of Services	Minimal	Impact on the delivery of services should be non-existent to minimal, unless transportation nodes are affected.
Environment	Minimal to Severe	The impact to the environment could be severe. Drought can severely affect farming, ranching, wildlife and plants due to the lack of precipitation.
Economic Conditions	Minimal to Moderate	Impacts to the economy will be dependent on how extreme the drought is and how long it lasts. Communities that depend on water recreation could be tested, as well as agricultural. Minimal to Moderate.
Public Confidence in Jurisdiction's Governance	Minimal	Confidence could be at issue during periods of extreme drought if planning is not in place to address intake needs and loss of crops.

3.7.5 EARTHQUAKE

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Earthquake	1.00	1.29	4.00	1.00	**1.54**

Description

An earthquake is the movement, shaking or trembling of t he ground produced by sudden displacement of rock in the Earth's crust. Earthquakes may result from the sudden collapse of a void within the earth, landslides, or volcanic activity. However, most earthquakes are caused by the release of stresses accumulated as a result of the rupture of rocks along opposing fault planes in the Earth's outer crust. These fault planes are typically found a long borders of the Earth's tectonic plates, which generally follow the outlines of the continents.

The areas of greatest tectonic instability occur at the perimeters of the slowly moving plates, as these locations are subjected to the greatest strains from plates traveling in opposite directions and at different speeds. Deformation along plate boundaries causes strain in the rock and the consequent buildup of stored energy. When the built-up stress exceeds the rocks' strength, a rupture occurs. The rock on both sides of the fracture is snapped, releasing the stored energy and producing seismic waves, generating an earthquake.

Concerns about induced seismicity, or earthquake activity related to hydraulic fracturing or fracking, have been raised in some areas. Fracking is a m ethod of enhancing oil and gas recovery from wells by injecting water, sand, and chemicals into rock formations under very high pressure to fracture the rock and release trapped hydrocarbons. According to the Kansas Geological Survey, there is no evidence that hydraulic fracturing itself triggers earthquakes (Kansas Geological Survey, Public Information Circular 32).

Earthquakes can affect large areas, cause extensive damage to property, result in loss of life and injury to people within the area of the quake, and disrupt or destroy the areas infrastructure.

	Warning Time
Earthquake	4.00

	Duration
Earthquake	1.00

Hazard Location

Overall, east-central Kansas is in an area of relatively low seismic activity. Based on available data, the earthquake hazard is considered roughly the same across the east-central Kansas planning area.

The closest series of major faults is called the Humboldt Fault Zone. Also known as the Nemaha Uplift, the Humboldt Fault Zone runs to the west of the region.

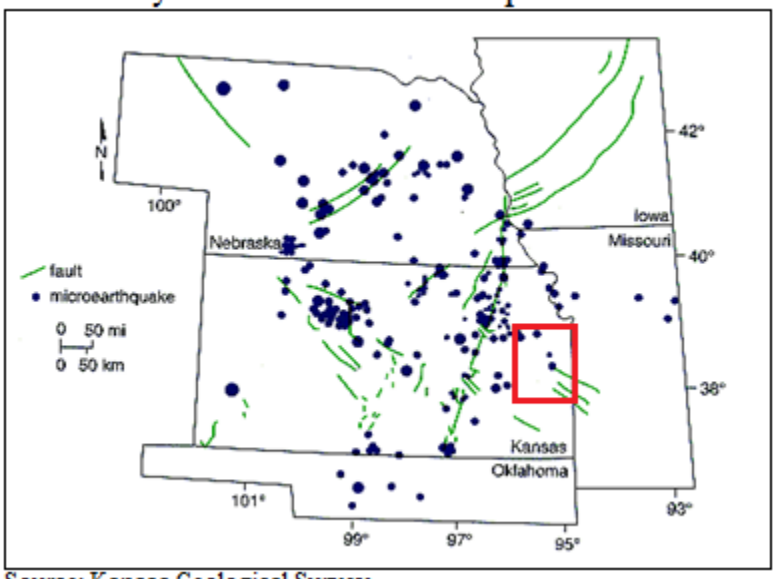
Humboldt Fault Zone



Source: Kansas Geological Survey, Earthquakes in Kansas

The following figure from the Kansas Geological Survey shows the locations of fault systems and micro earthquakes across the Midwest.

Fault System and Micro-Earthquake Locations



Source: Kansas Geological Survey

Previous Occurrences and Extent

East-central Kansas is in an area of relatively low seismic activity. According to a 2006 FEMA report, Kansas ranks 44th among the states in the amount of damage caused by earthquakes in an average year and 43rd in annualized earthquake loss per year. There have been no regionally centered earthquake occurrences recorded.

According to the United States Geological Survey (USGS) Earthquake Hazards Program, from 1974 to 2003 Kansas has had four earthquakes of a 3.5 or greater magnitude. This represents approximately 0.02% out of 21.080 earthquakes recorded throughout the United States during the same period.

Hazard Vulnerability and Impact

The effect of an earthquake on the Earth's surface is called the intensity. The intensity scale consists of a series of certain key responses such as people awakening, movement of furniture, damage to chimneys, and finally total destruction. The Modified Mercalli Intensity Scale is currently used in the United States. It was developed in 1931 by the American seismologists Harry Wood and Frank Neumann. This scale, composed of 12 increasing levels of intensity that range from imperceptible shaking to catastrophic destruction, is designated by Roman numerals. It does not have a mathematical basis; instead it is an arbitrary ranking based on observed effects.

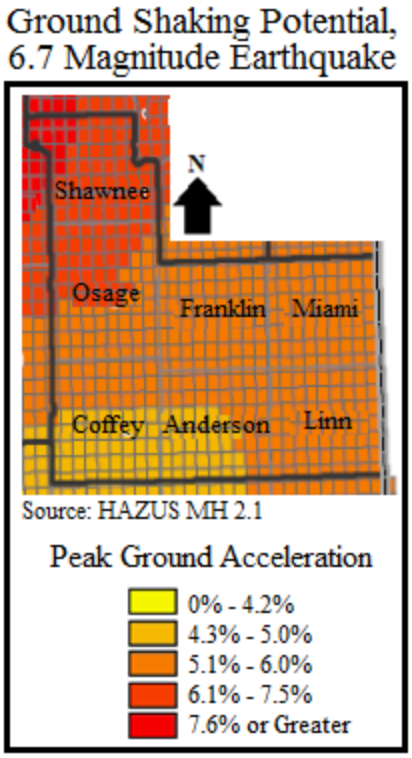
Modified Mercalli Intensity Scale

Mercalli Rating	General Effects
I. Instrumental	Generally not felt by people unless in favorable conditions.
II. Weak	Felt only by a couple people that are sensitive, especially on the upper floors of buildings. Delicately suspended objects (including chandeliers) may swing slightly.
III. Slight	Felt quite noticeably by people indoors, especially on the upper floors of buildings. Many do not recognize it as an earthquake. Standing automobiles may rock slightly. Vibration similar to the passing of a truck. Duration can be estimated. Indoor objects (including chandeliers) may shake.
IV. Moderate	Felt indoors by many to all people, and outdoors by few people. Some awakened. Dishes, windows, and doors disturbed, and walls make cracking sounds. Chandeliers and indoor objects shake noticeably. The sensation is more like a heavy truck striking building. Standing automobiles rock noticeably. Dishes and windows rattle alarmingly. Damage none.
V. Rather Strong	Felt inside by most or all, and outside. Dishes and windows may break and bells will ring. Vibrations are more like a large train passing close to a house. Possible slight damage to buildings. Liquids may spill out of glasses or open containers. None to a few people are frightened and run outdoors.

Modified Mercalli Intensity Scale Continued

Mercalli Rating	General Effects
VI. Strong	Felt by everyone, outside or inside; many frightened and run outdoors, walk unsteadily. Windows, dishes, glassware broken; books fall off shelves; some heavy furniture moved or overturned; a few instances of fallen plaster. Damage slight to moderate to poorly designed buildings, all others receive none to slight damage.
VII. Very Strong	Difficult to stand. Furniture broken. Damage light in building of good design and construction; slight to moderate in ordinarily built structures; considerable damage in poorly built or badly designed structures; some chimneys broken or heavily damaged. Noticed by people driving automobiles.
VIII. Destructive	Damage slight in structures of good design, considerable in normal buildings with a possible partial collapse. Damage great in poorly built structures. Brick buildings easily receive moderate to extremely heavy damage. Possible fall of chimneys, factory stacks, columns, monuments, walls, etc. Heavy furniture moved.
IX. Violent	General panic. Damage slight to moderate (possibly heavy) in well-designed structures. Well-designed structures thrown out of plumb. Damage moderate to great in substantial buildings, with a possible partial collapse. Some buildings may be shifted off foundations. Walls can fall down or collapse.
X. Intense	Many well-built structures destroyed, collapsed, or moderately to severely damaged. Most other structures destroyed, possibly shifted off foundation. Large landslides.
XI. Extreme	Few, if any structures remain standing. Numerous landslides, cracks and deformation of the ground.
XII. Catastrophic	Total destruction – everything is destroyed. Lines of sight and level distorted. Objects thrown into the air. The ground moves in waves or ripples. Large amounts of rock move position. Landscape altered, or leveled by several meters. Even the routes of rivers can be changed.

The following map demonstrates the ground shaking potential of a worst-case scenario 2,500-year 6.7 Magnitude earthquake. It is important to note that ground shaking potential is not only related to proximity to the fault, but also the geology involved. For example areas with high sand content are subject to higher shaking than areas with high rock content.



The following table provides estimated building losses and displaced households for all counties in east-central Kansas as a result of a 2,500 year probabilistic 6.7 Magnitude earthquake. It should be noted that these losses are for an absolute worst-case scenario event.

Estimated Building Losses and Displaced Households due to Magnitude 6.7 Earthquake

County	Total Earthquake Losses	Displaced Households
Anderson	$6,168	2
Coffey	$7,394	2
Franklin	$18,598	8
Linn	$8,248	2
Miami	$24,384	9
Osage	$11,735	4
Shawnee	$175,161	111
Regional Total	$251,688	<137

Source: HAZUS MH 2.1

Based on this information, Shawnee County is in the top 10 Kansas counties for potential building loss and potential number of displaced households due to a magnitude 6.7 earthquake. Although the probability of a significant damaging earthquake is unlikely, the presence of the Humboldt fault and historical occurrences along this fault indicate that the potential does exist.

	Magnitude/Severity
Earthquake	1.29

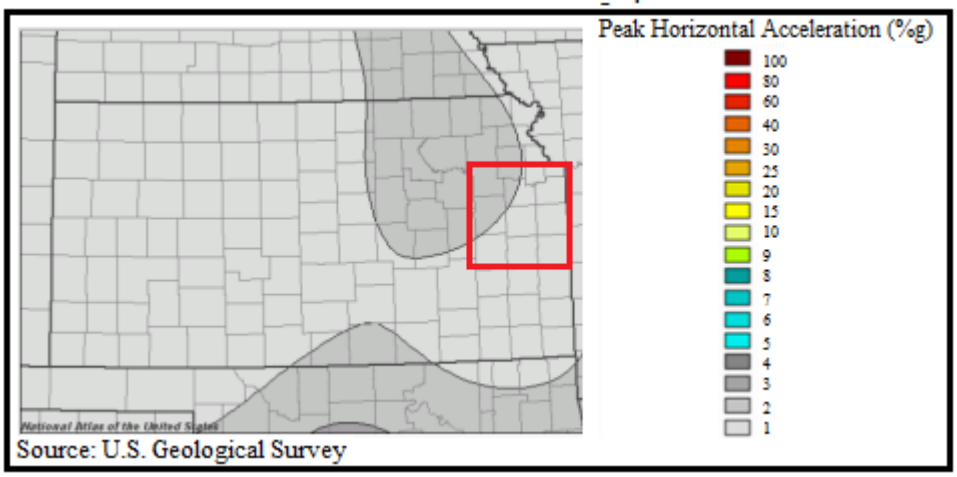
Future Development

Future development and population increase would tend to increase the likelihood of the population being impacted by an earthquake. In addition, demographic movement to major population centers with high density development, such as occurring in the Topeka area, Shawnee County, would tend to increase the likelihood of the population being impacted by an earthquake. Areas with major dams or levee systems may have additional vulnerabilities.

Probability of Future Hazard Events

The following is a probabilistic seismic hazard map of Kansas from the USGS that depict the probability that ground motion will reach a certain level during an earthquake. The data shows peak horizontal ground acceleration (the fastest measured change in speed for a particle at ground level that is moving horizontally because of an earthquake) and shows that the shaking level that has a 10 percent chance of being exceeded over a period of 50 years.

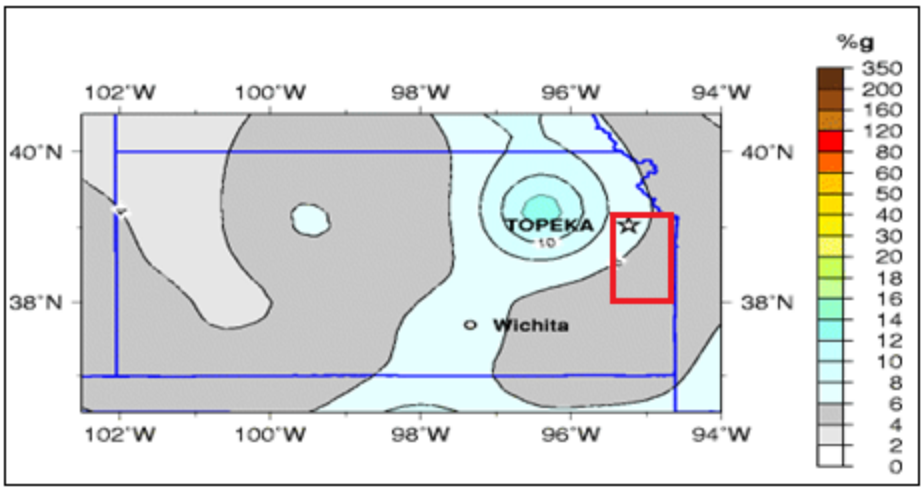
Probabilistic Seismic Hazard Map of Kansas



Source: U.S. Geological Survey

The following figure presents a worst-case scenario, depicting the shaking level that has a 2 percent chance of being exceeded over a period of 50 years. Typically, significant earthquake damage occurs when accelerations are greater than 30% of gravity.

Peak Acceleration (%g) with 2% Probability of Exceedance in 50 Years



Source: National Seismic Hazard Mapping Project

Based on available data, the probability of an earthquake occurring within the east-central Kansas region is unlikely.

	Probability
Earthquake	1.00

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Earthquake Consequence Analysis

Subject	Ranking	Impacts of Earthquake
Health and Safety of Persons in the Area of the Incident	Minimal	Impact in the incident area expected to be minimal in the State of Kansas.
Responders	Minimal	With proper preparedness and protection, impact is expected to be minimal.
Continuity of Operations	Minimal	COOP is not expected to be activated.
Property, Facilities, and Infrastructure	Minimal	Impact to property, facilities, and infrastructure could be minimal.
Delivery of Services	Minimal	No expectation of impact on services.
Environment	Minimal	No expectation of environmental impact.
Economic Conditions	Minimal	No expected impacted.
Public Confidence in Governance	Minimal	No change in confidence

3.7.6 EXPANSIVE SOILS

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Expansive Soils	1.14	1.00	1.00	4.00	**1.36**

Description

A relatively widespread geologic hazard for east-central Kansas is the presence of soils that expand and shrink in relation to their water content. Expansive soils can cause physical damage to building foundations, roadways, and other components of the infrastructure when clay soils swell and shrink as a result of changes in moisture content. For east-central Kansas, the vulnerability to this hazard most frequently is associated with soils shrinking during periods of drought.

Highways, airport runways, streets, walkways and parking lots with layers of concrete and asphalt throughout east-central Kansas are damaged every year by the effects of expansive soils. The frequency of damage from expansive soils can be associated with the cycles of drought and heavy rainfall, which reflect changes in moisture content. Building settlements associated with drought have been noted in east-central Kansas for many years, particularly in buildings located on high ground, further from the water table.

	Warning Time
Expansive Soils	1.00

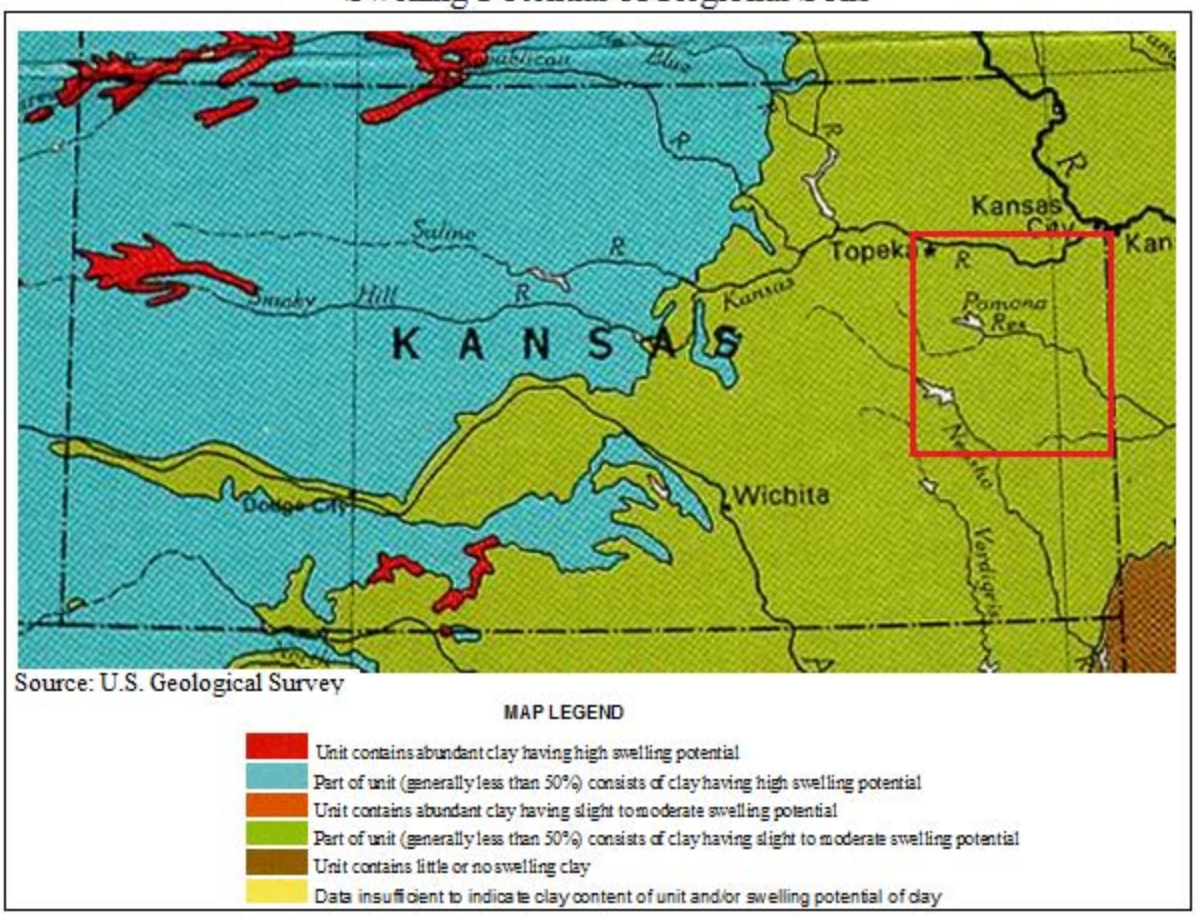
	Duration
Expansive Soils	4.00

Hazard Location

East-central Kansas possesses a wide array of soils with a range of permeability from moderate to low. Generally, the permeability of the soils is related to the clay content. Clay soils tend to shrink when dry and swell when wet which has large implications on underground utility infrastructure and home foundations.

The map shows the swelling potential of soils in east-central Kansas. All of east-central Kansas is located in an area where part of the soil unit consists of clay having slight to moderate swelling potential.

Swelling Potential of Regional Soils



Source: U.S. Geological Survey

Previous Occurrences and Extent

There following are local expansive soil events for east-central Kansas:

June, 2103: City of Prescott, Linn County: A soil expansion caused by drought did $24,000 in damages to the City Library.

May, 2012: USD #362 - Prairie View, Linn County: Heavy clay became extremely dry and caused the building to settle about 4 inches in the southwest corner of La Cygne Elementary resulting in $24,046 in repairs.

Spring, 2013: City of Overbrook, Osage County: Expansive soils impacted the building of the library, necessitating a project redesign.

Hazard Vulnerability and Impact

Expansive soils are so extensive within parts of the United States that alteration of the highway routes to avoid expansive soils is virtually impossible. The Midwest is particularly problematic for construction because of the varied mixture of clay soils. Each year in the United States,

expansive soils cause billions of dollars in damage to buildings, roads, pipelines, and other structures. This is more damage than that typically caused by floods, hurricanes, tornados, and earthquakes combined. It is estimated that approximately 10 pe rcent of the homes built on expansive soils experience significant damage. There is limited available data on this hazard and no reported occurrences.

	Magnitude/Severity
Expansive Soils	1.14

Future Development

Future development and population increase would tend to increase the likelihood of t he population being impacted by expansive soil. Development in this region is increasing as the population base increases, however, damage from expansive soil to new construction is often mitigated with modern construction practices. S oil engineers and engineering geologists test soils for s well potential when designing a building's foundation. Simple observation often can reveal the presence of expansive soils and can make recommendations for septic systems, grading, earth support, drainage, foundation design, concrete slab on grade construction and site remediation.

Probability of Future Hazard Events

Based on the limited distribution of soil units consisting of clay having high swelling potential, and the lack of major historical events, the probability of future hazards events is unlikely.

	Probability
Expansive Soils	1.14

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Expansive Soils Consequence Analysis

Subject	Ranking	Impacts of Expansive Soils
Health and Safety of Persons in the Area of the Incident	Minimal	Minimal impact.
Responders	Minimal	Minimal impact.
Continuity of Operations	Minimal	Minimal expectation for utilization of COOP unless structures have extensive damage.
Property, Facilities, and Infrastructure	Minimal to Moderate	Localized impact could be moderate, including structural integrity to be lost, and roadways, railways to buckle.
Delivery of Services	Minimal	Delivery of services could be impacted if infrastructure is impacted.
Environment	Moderate	Expansive soils could cause moderate damage to dams, levees, watersheds.
Economic Conditions	Minimal to Moderate	Economic impacts include rebuilding of the properties and infrastructure. Drought and extreme rain events could increase impact.
Public Confidence in Governance	Minimal	Confidence will be dependent on development trends and mitigation efforts at reducing the effect of expansive soils on new construction.

3.7.7 EXTREME TEMPERATURE

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Extreme Temperature	3.39	2.21	1.14	3.29	**2.69**

Description

Extreme temperature events, both hot and cold, can have severe impacts on human health and mortality, natural ecosystems, agriculture, and other economic sectors.

Extreme Temperature Definitions

Term	Definition
Extreme Heat	Extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Ambient air temperature is one component of heat conditions, with relative humidity being the other. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when an area of high atmospheric pressure traps moisture laden air near the ground.
Extreme Cold	Although no specific definition exists for extreme cold, an extreme cold event: can generally be defined as temperatures at or below freezing for an extended period of time. Extreme cold events are usually part of Winter Storm events but can occur during anytime of the year and can have devastating effects on agricultural production.

	Warning Time
Extreme Temperature	1.14

	Duration
Extreme Temperature	3.29

Hazard Location

The entire planning area is subject to extreme heat events and all participating jurisdictions can be affected. Regional climate data is fully discussed in Section 2.5.

Previous Occurrences and Extent

Since 1980, there have been a number of major extreme temperature events that have caused death and damage in Kansas. The following are notable heat related events for east-central Kansas.

> **Summer, 2012:** A strong ridge of high pressure settled over the central portions of the U.S. beginning in June and became the dominant weather pattern for much of the Summer of 2012. This weather pattern finally broke down after the first week of August

and temperatures became more seasonable. The hottest temperatures occurred on August 2nd and 4th at 107° Fahrenheit (°F). There were 6 days where the maximum temperature reached 100°F or higher and this occurred during the first week of the month. There were 20 days where the maximum temperatures reached 90°F degrees or above. Heat advisories and warnings were issued for portions of the area for the early portion of August.

Spring 2012: After experiencing the 5th warmest winter on record, with a three month average temperature of 38.4°F degrees from December 1st to February 29th, Wichita went on to witness the warmest spring in the city`s 124-year climate history. Wichita`s average temperature from March 1st to May 31st, which is considered meteorological spring, was 64.4°F degrees. This torched the previous record of 59.9°F degrees, recorded in 2006, by 4.5 degrees. The 64.4°F degree average was 8.2°F degrees above the 56.2°F degree normal for spring.

February 2011: A extremely cold arctic air mass settled over the region in the aftermath of the snowstorm of February 8th and 9th. As this area of arctic high pressure settled over the eastern half of Kansas and eastern Oklahoma, the combination of the cold air and fresh snow cover of 5 to 12 inches, led to optimal radiational cooling conditions on the morning of February 10th, with record minimum temperatures broken across the region.

January 7, 2010: An unusually cold Arctic air mass covered large areas of the state January 6th and stayed through January 9th. In addition, this Arctic air mass brought in very strong winds creating dangerous wind chills.

April 2007: The U.S. Department of Agriculture designated 68 Kansas counties primary natural disaster areas because of losses caused by unseasonably warm temperatures followed by prolonged freezing weather that occurred from April 4-10, 2007.

July 16-20, 2006: From July 16-20, a deadly heat wave gripped much of central, south-central, and eastern Kansas. Temperatures soared into the 105-110 °F range. Five lives were lost and dozens of people were treated for heat-related illnesses. For this particular year a total of 21 heat-related deaths were reported by the Kansas Department of Health and Environment. The same heat wave also caused two train derailments, which required rerouting of train traffic. The derailments were caused by sun kinks as the metal tracks expanded from the heat. One train derailed north of Topeka toward Atchison, and the other derailed immediately east of Neosho Rapids.

July 1980: In the areas surrounding Topeka temperatures hit consecutive days of 100 °F or higher on 20 out of 31 days.

The following tables present NCDC data relating to extreme temperature events for the region.

NCDC Excessive Heat Events

County	Period	Event	Number of Events	Property Damage	Crop Damage	Number of Deaths
Anderson	2010-2013	Excessive Heat	9	$0	$0	0
Coffey	2010-2013	Excessive Heat	9	$0	$0	0
Franklin	2010-2013	Excessive Heat	9	$0	$0	0
Linn	2010-2013	Excessive Heat	1	$0	$0	0
Miami	2010-2013	Excessive Heat	1	$0	$0	0
Osage	2010-2013	Excessive Heat	9	$0	$0	0
Shawnee	2010-2013	Excessive Heat	10	$0	$0	0

Source: NCDC Storm Events Database

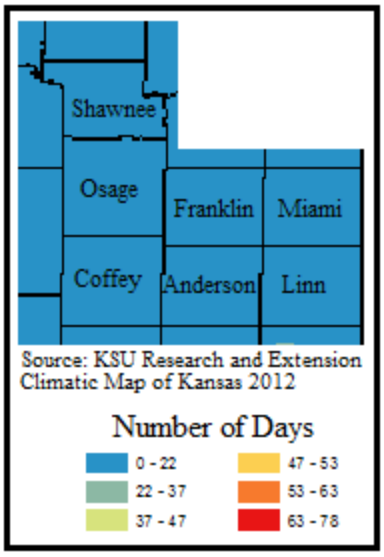
NCDC Extreme Cold Events

County	Period	Event	Number of Events	Property Damage	Crop Damage	Number of Deaths
Anderson	2010-2013	Extreme Cold/ Wind Chill	0	$0	$0	0
Coffey	2010-2013	Extreme Cold/ Wind Chill	0	$0	$0	0
Franklin	2010-2013	Extreme Cold/ Wind Chill	0	$0	$0	0
Linn	2010-2013	Extreme Cold/ Wind Chill	0	$0	$0	0
Miami	2010-2013	Extreme Cold/ Wind Chill	0	$0	$0	0
Osage	2010-2013	Extreme Cold/ Wind Chill	0	$0	$0	0
Shawnee	2010-2013	Extreme Cold/ Wind Chill	0	$0	$0	0

Source: NCDC Storm Events Database

The following map show the average number of days the region experience temperatures over 90 degrees Fahrenheit from 1981 to 2010.

Average Number of Days with a High Temperature Over 90°F, 1981 to 2010



For extreme heat, the KDHE's Environmental Public Health Tracking Program has kept records of the fatalities of Kansas residents since 2000. There have been at least 144 fatalities of Kansas residents since 2000 due to heat. The year of 2011 had the most recorded fatalities with 37. According to the Homeland Security Operations Bureau of Community Health Systems Kansas Department of Health and Environment there have been 35 heat related deaths and 37 cold related deaths in the region from the period 2000 to 2011.

Temperature Related Fatalities, Statewide

Year	Frequency	Percent	Cumulative Frequency	Cumulative Percent
2002	3	2.21	18	13.24
2003	5	3.68	23	16.91
2004	4	2.94	27	19.85
2005	6	4.41	33	24.26
2006	21	15.44	54	39.71
2007	11	8.09	65	47.79
2008	9	6.62	74	54.41
2009	10	7.35	84	61.76
2010	5	3.68	89	65.44
2011	37	27.21	126	92.65
2012	10	7.35	136	100

Source: Department of Health and Environment's Kansas Environmental Public Health Tracking Program

Local Events

July 21, 2005: Miami County: Oppressive heat and humidity was observed across the area from July 21st to July 25th. Afternoon heat indices ranged from 105 to 110 degrees. No damages or other injuries were reported for this event.

Hazard Vulnerability and Impact

The primary concerns with this hazard are human health safety issues. Specific at risk groups identified were outdoor workers, farmers, and senior citizens. Due to the potential for fatalities and the possibility for the loss of electric power due to increased strain on power generation and distribution for air conditioning, periods of extreme heat can affect the planning area.

The following Heat Index chart correlates both temperature and relative humidity to illustrate apparent, of felt, temperature.

Heat Index Chart

Relative Humidity (%) \ Temperature (°F)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Source: National Weather Service Heat Index Program

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution Extreme Caution Danger Extreme Danger

Exposure to direct sun can increase Heat Index values by as much as 15°F. The zone above 105°F corresponds to a Heat Index that may cause increasingly severe heat disorders with continued exposure and/or physical activity. The following table discusses potential impacts on human health related to excessive heat.

Extreme Heat Impacts on Human Health

Heat Index (HI) Temperature	Potential Impact on Human Health
80-90° F	Fatigue possible with prolonged exposure and/or physical activity
90-105° F	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and/or physical activity
105-130° F	Heatstroke/sunstroke highly likely with continued exposure

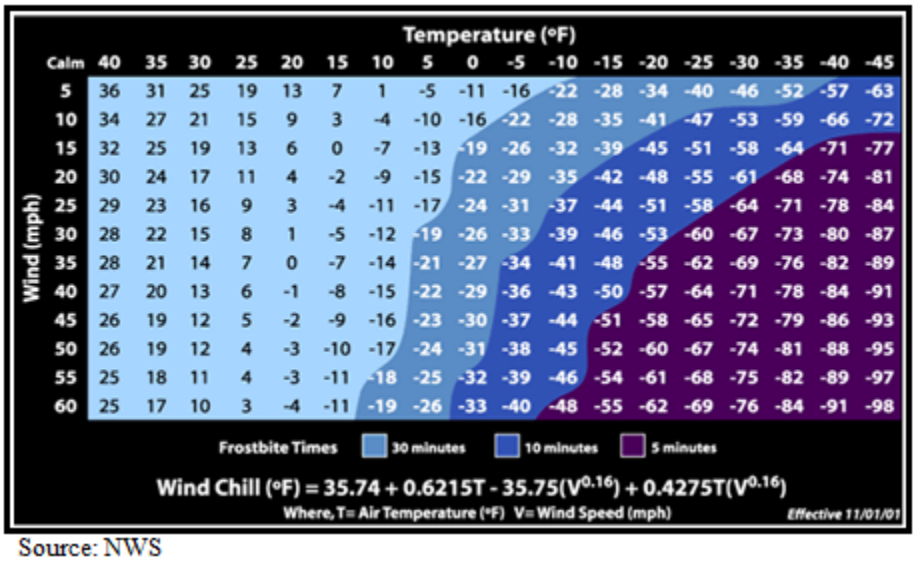
Source: National Weather Service Heat Index Program,

The National Weather Service (NWS) has a system in place to initiate alert procedures when the Heat Index is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. A common guideline for issuing excessive heat alerts is when the maximum daytime Heat Index is expected to equal or exceed 105°F and the night time minimum Heat Index is 80°F or above for two or more consecutive days.

Extreme cold can cause hypothermia, an extreme lowering of the body's temperature, frostbite and death. Infants and the elderly are particularly at risk, but anyone can be affected. Other impacts of extreme cold include asphyxiation from toxic fumes from emergency heaters, household fires, which can be caused by fireplaces and emergency heaters, and frozen/burst water pipes. There are no specific data sources recording cold related deaths in east-central Kansas.

Wind can greatly amplify the impact of cold ambient air temperatures. The following figure, provided by the National Weather Service, shows the relationship of wind speed to apparent temperature and typical time periods for the onset of frostbite. The combination of these elements affects the wind chill factor. The wind chill factor is the perceived temperature.

Wind Chill Chart



Source: NWS

In addition, extreme temperatures may exacerbate agricultural and economic losses. The following table presents agricultural loss data for the region for the period 2002 to 2011, the latest available data.

Total Insured Crop Insurance Paid per County from 2002-2011

County	Total Insured Crop Insurance Paid for Extreme Temperature Damages	Annualized Insured Crop Insurance Paid for Extreme Temperature Damages
Anderson	$6,157,966	$615,797
Coffey	$5,964,306	$596,431
Franklin	$5,642,398	$564,240
Linn	$1,104,425	$110,443
Miami	$1,443,364	$144,336
Osage	$4,728,894	$472,889
Shawnee	$2,414,172	$241,417
Regional Total	$27,455,525	$2,745,553

Source: USDA Risk Management Agency

	Magnitude/Severity
Extreme Temperature	2.21

Future Development

Future development and population increase would tend to increase the likelihood of the population being impacted by extreme temperatures. Extreme temperatures tend to impact work and living conditions which may be affected due to increase demands, and potentially resultant failures of, utility systems. Additionally, increases in agriculture and livestock within the region could be impacted by extreme temperatures.

Probability of Future Hazard Events

Although periods of extreme heat and cold occur on an annual basis, events that create a serious public health risk or threaten infrastructure capacity occur less often. An extreme heat event is more likely to occur in the months of June, July, August, and September, and an extreme cold event is more likely to occur in the months of November, December, January, February, and March. Also the EPA has projected that with climate changes in the Great Plains, temperatures will continue to increase and affect all east-central Kansas communities.

	Probability
Extreme Temperature	3.06

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Extreme Temperature Consequence Analysis

Subject	Ranking	Impacts of Extreme Temperature
Health and Safety of Persons in the Area of the Incident	Minimal - Severe	Depending on the duration of the event, impact is expected to be severe for unprepared and unprotected persons. Impact will be minimal to moderate for prepared and protected persons.
Responders	Minimal to Severe	Impact could be severe if proper precautions are not taken, i.e. hydration in heat, clothing in extreme cold. With proper preparedness and protection the impact would be minimal.
Continuity of Operations	Minimal	Minimal expectation for utilization of the COOP.
Property, Facilities, and Infrastructure	Minimal to Severe	Impact to infrastructure could be minimal to severe depending on the temperature extremes.
Delivery of Services	Minimal	Impact should be non-existent to minimal.
Environment	Severe	The impact to the environment could be severe. Extreme heat and extreme cold could seriously damage wildlife and plants, trees, crops, etc.
Economic Conditions	Minimal to Severe	Impacts to the economy will be dependent on how extreme the temperatures get, but only in the sense of whether people will venture out to spend money. Utility bills could increase causing more financial hardship.
Public Confidence in Governance	Minimal to Moderate	Confidence will be dependent on how well utilities hold up as they are stretched to provide heat and cool air, depending on the extreme. Planning and response could be challenged.

3.7.8 FLOOD

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Flood	3.36	3.14	2.57	3.14	**3.15**

Description

Flooding is the most frequent and costly natural hazard in the United States. During the twentieth century, floods were the leading natural disaster in the United States, representing 40 percent of all natural disasters in terms of number of lives lost, estimated at more than 10,000 deaths since 1990, and property damaged. Nearly 90% of presidential disaster declarations result from natural events where flooding was a major component. The USGS reports that nationwide, floods kill an average of 140 people each year and cause $6,000,000,000 in property damage.

Floods that threaten east-central Kansas are generally the result of excessive precipitation, and can be classified under three categories:

- **Flash Flood:** The product of heavy, localized precipitation in a short time period over a given location
- **Riverine Flood:** Occurs when precipitation over a given river basin for a long period of time causes the overflow of rivers, streams, lakes and drains
- **Urban Flood:** Occurs where man-made development has obstructed the natural flow of water and decreased the ability of natural groundcover to absorb and retain surface water runoff

The severity of a flooding event is generally determined by the following factors:

- The combination of stream and river basin topography and physiography
- Precipitation and weather patterns
- Soil moisture conditions
- Degree of vegetative clearing or impermeable ground cover

Riverine Floods

The NWS provides the following definitions of warnings for actual and potential flood conditions for Riverine and Urban Flooding:

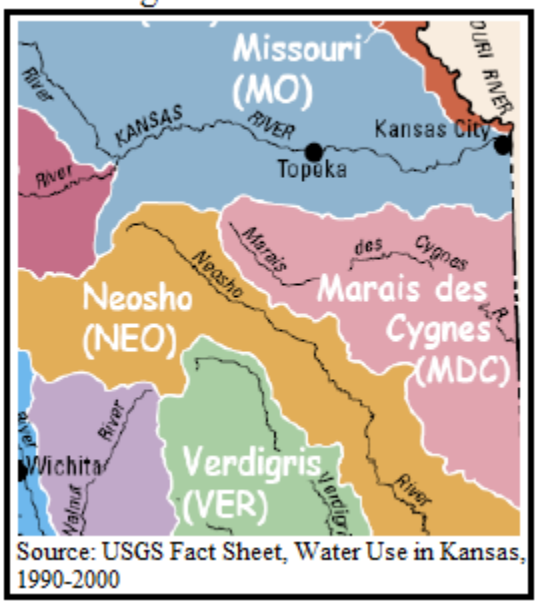
- **Flood Potential Outlook:** In hydrologic terms, a NWS outlook that is issued to alert the public of potentially heavy rainfall that could send rivers and streams into flood or aggravate an existing flood.
- **Flood Watch:** Issued to inform the public and cooperating agencies that current and developing hydro meteorological conditions are such that there is a threat of flooding, but the occurrence is neither certain nor imminent.

- **Flood Warning:** In hydrologic terms, a release by the NWS to inform the public of flooding along larger streams in which there is a serious threat to life or property. A flood warning will usually contain river stage (level) forecasts.
- **Flood Statement:** In hydrologic terms, a statement issued by the NWS to inform the public of flooding along major streams in which there is not a serious threat to life or property. It may also follow a flood warning to give later information.

Riverine flooding is defined as the overflow of rivers, streams, drains, and lakes due to excessive rainfall, rapid snowmelt or ice melt. The areas adjacent to rivers and stream banks that carry excess floodwater during rapid runoff are called floodplains. A floodplain is defined as the lowland and relatively flat area adjoining a river or stream. The terms "base flood" and "100-year flood" refer to the area in the floodplain that is subject to a one percent or greater chance of flooding in any given year. Floodplains are a larger entity called a basin, which is defined as all the land drained by a river and its branches.

A river basin is the land drained by a river and its branches. The surface waters of east-central Kansas flow through three river basins of the State as shown in the following figure.

Regional River Basins



Source: USGS Fact Sheet, Water Use in Kansas, 1990-2000

Flash Floods

The NWS provides the following definitions of warnings for actual and potential flood conditions for Flash Floods:

- **Flash Flood Watch**: Issued to indicate current or developing hydrologic conditions that are favorable for flash flooding in and close to the watch area, but the occurrence is neither certain or imminent.

- **Flash Flood Warning**: Issued to inform the public, emergency management and other cooperating agencies that flash flooding is in progress, imminent, or highly likely.
- **Flash Flood Statement**: In hydrologic terms, a statement by the NWS which provides follow-up information on flash flood watches and warnings.

The onset of flooding varies depending on the cause and type, with flash flooding and dam/levee failure inundation occurring typically with little or no warning time, whereas flooding caused by long periods of excessive rainfall tend to have longer durations but more gradual onset. Overall warning time is usually 6-12 hours. The duration of flood conditions is generally less than one week, but in exceptional cases can extend significantly longer.

A flash flood is an event that occurs with little or no warning where water levels rise at an extremely fast rate. Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area. Flash flooding results from intense rainfall over a brief period, sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil or impermeable surfaces. Flash flooding may also occur from the breaching or failure of a dam or levee.

Flash flooding is an extremely dangerous event which can reach full peak in only a few minutes and allows little or no time for protective measures to be taken by those in its path. Flash flood waters move at very high speeds with walls of water that can reach heights of 10 feet. Flash flood waters and the accompanying debris can uproot trees, roll boulders, and damage or destroy buildings, bridges, and roads. Flash flooding often results in higher loss of life, both human and animal, than slower developing river and stream flooding.

Although flash floods are somewhat unpredictable, there are factors that can point to the likelihood of flash floods occurring. Weather surveillance radar is being used to improve monitoring capabilities of intense rainfall. This, along with knowledge of the watershed characteristics, modeling techniques, monitoring, and advanced warning systems increases the warning time for flash floods.

Other Floods

In some cases, flooding may not be directly attributable to a river, stream, or lake overflowing its banks. Rather, it may simply be the combination of excessive rainfall or snowmelt, saturated ground, and inadequate drainage. With no place to go, the water will find the lowest elevations– areas that are often not in a floodplain. This type of flooding, often referred to as sheet flooding, is becoming increasingly prevalent as development outstrips the ability of the drainage infrastructure to properly carry and disperse the water flow.

In certain areas, aging storm sewer systems are not designed to carry the capacity currently needed to handle the increased storm runoff. Typically, the result is water backing into basements, which damages mechanical systems and can create serious public health and safety concerns. This combined with rainfall trends and rainfall extremes all demonstrate the high probability, yet generally unpredictable nature of flash flooding in the planning area.

Generally, floods are long-term events that may last for several days.

	Warning Time
Flood	2.57

	Duration
Flood	3.14

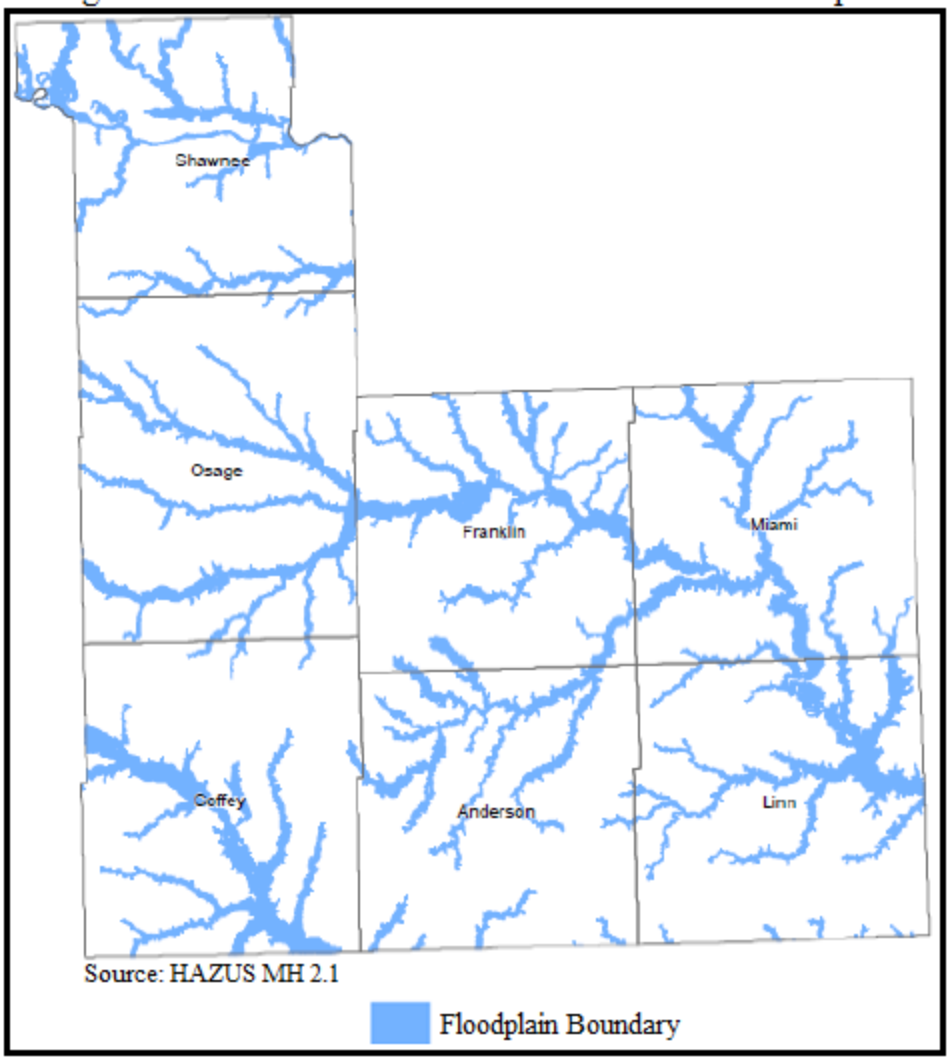
Hazard Location

HAZUS-MH 2.1 was utilized to update the region's risk assessment for riverine flooding. Not all of the region's counties have available DFIRMS. As such, the Hazard Mitigation Planning Team decided to utilize the latest version of HAZUS, released in February 2012, as a GIS-based tool to update the Riverine Flooding Risk Assessment. HAZUS-MH 2.1 produces a flood polygon and flood depth grid that represents the base flood. While not as accurate as utilizing DFIRMs themselves, this approach ensures an "apples to apples" analysis to describe vulnerability in terms of the jurisdictions most threatened by riverine flooding, and most vulnerable to damage and loss associated with flooding events.

While riverine floods can and do occur at various levels, the one percent annual chance flood has been chosen as the basis for this risk assessment. This level is the accepted standard for flood insurance purposes.

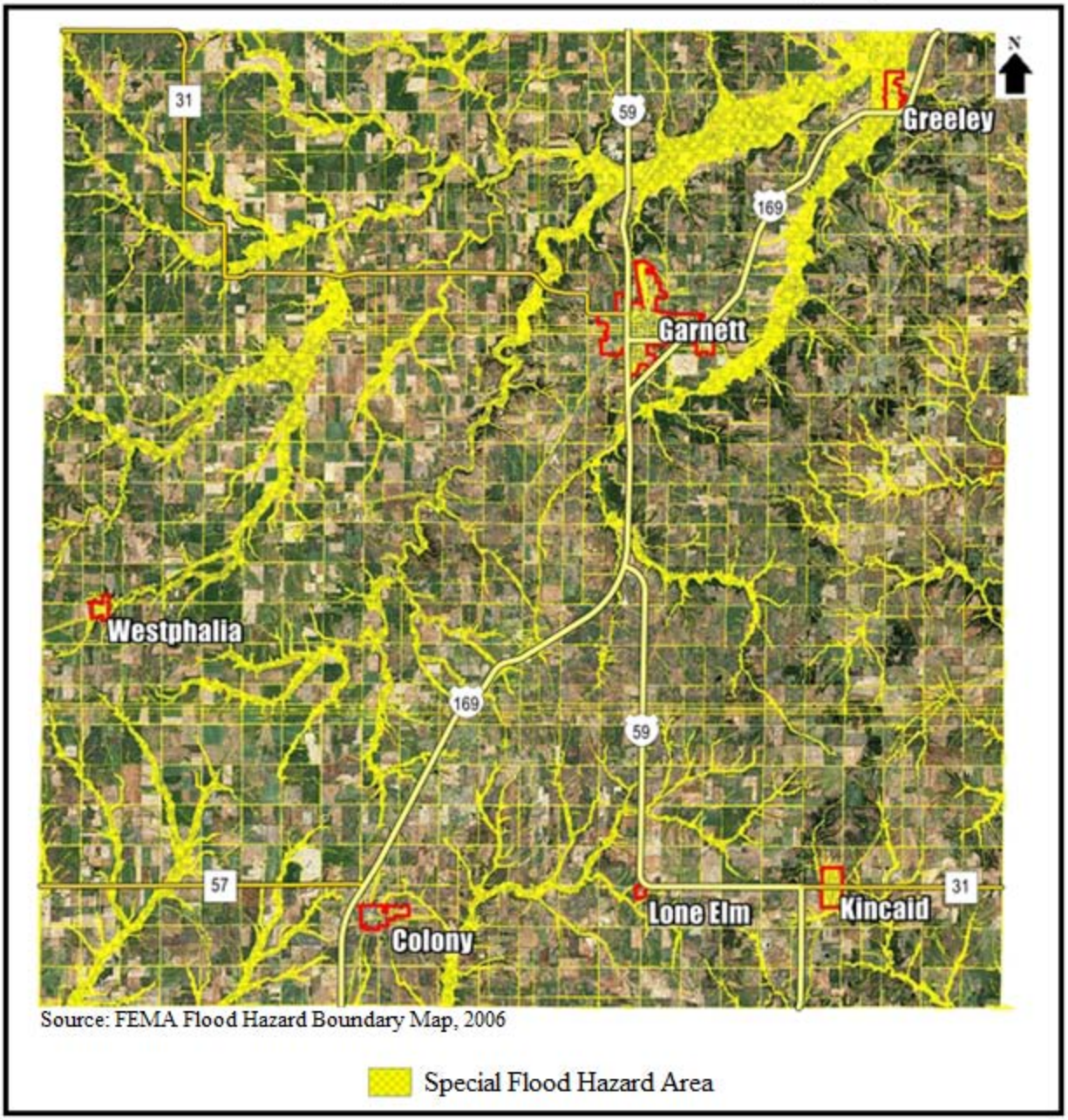
Results from the HAZUS-MH 2.1 analysis will be provided throughout this section to depict floodplain areas as well as varied vulnerability and potential loss estimates. The following map provides a regional overview of the one percent annual chance floodplains in east-central Kansas, generated by HAZUS MH 2.1.

Regional HAZUS One Percent Annual Chance Floodplains



The following are available DFIRM maps for counties within east-central Kansas. Please note that at the time of this plan not all counties were fully mapped. If available, other relevant maps indicating potential flooding zones have been included.

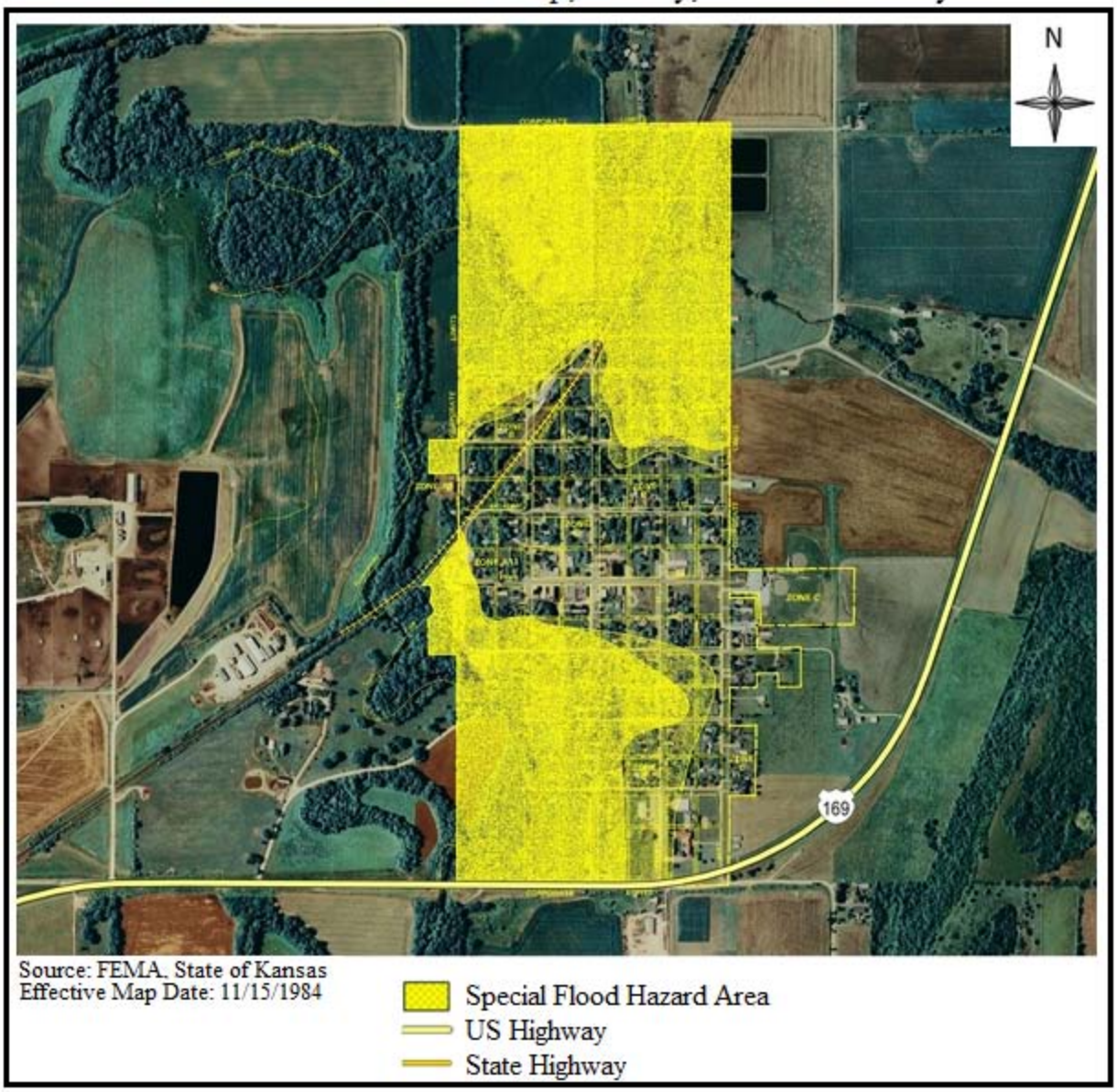
Anderson County FEMA Flood Hazard Boundary Map



Source: FEMA Flood Hazard Boundary Map, 2006

Special Flood Hazard Area

FEMA Flood Indurance Rate Map, Greeley, Anderson County



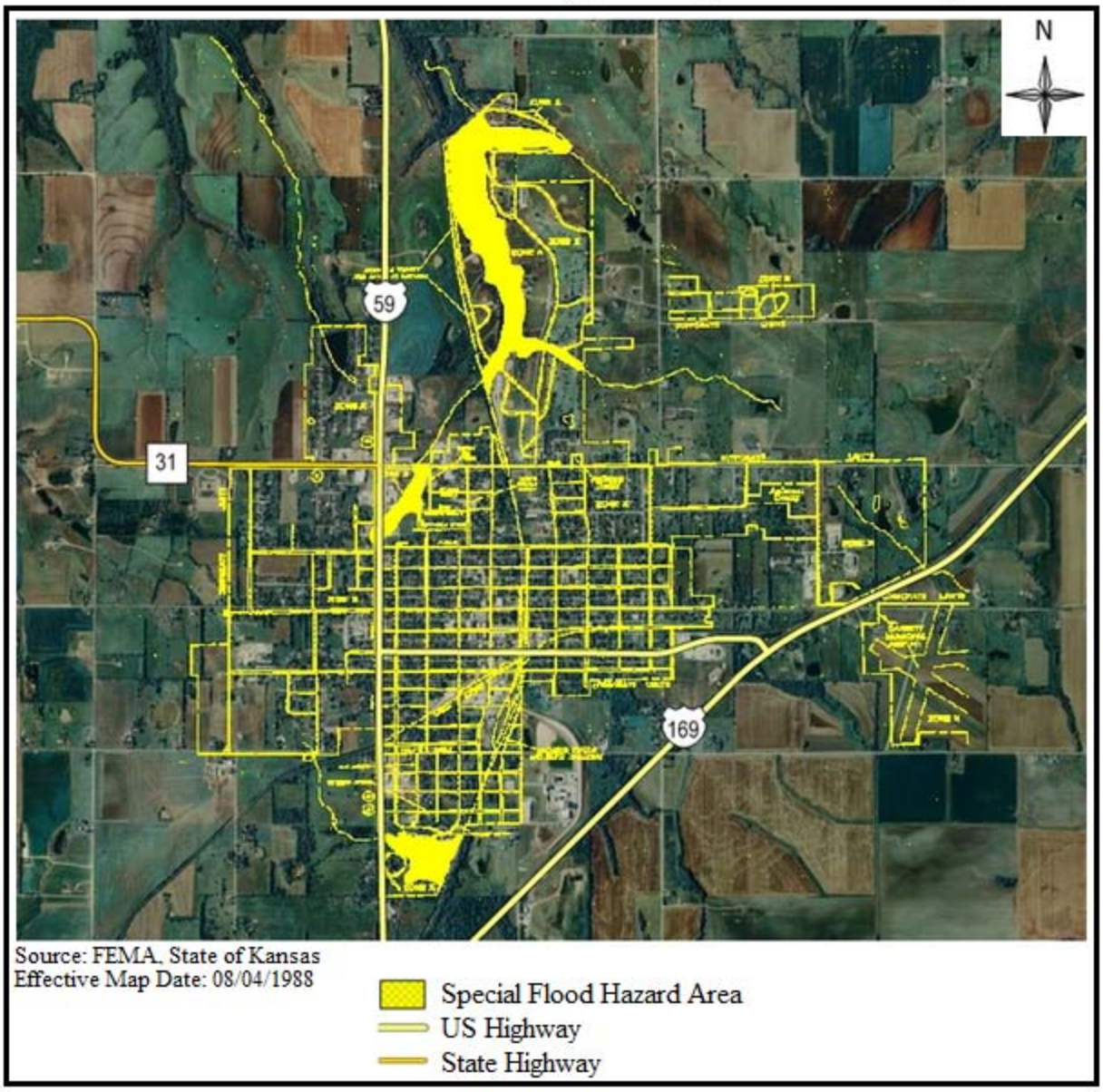
FEMA Flood Insurance Rate Map, Kincaid, Anderson County



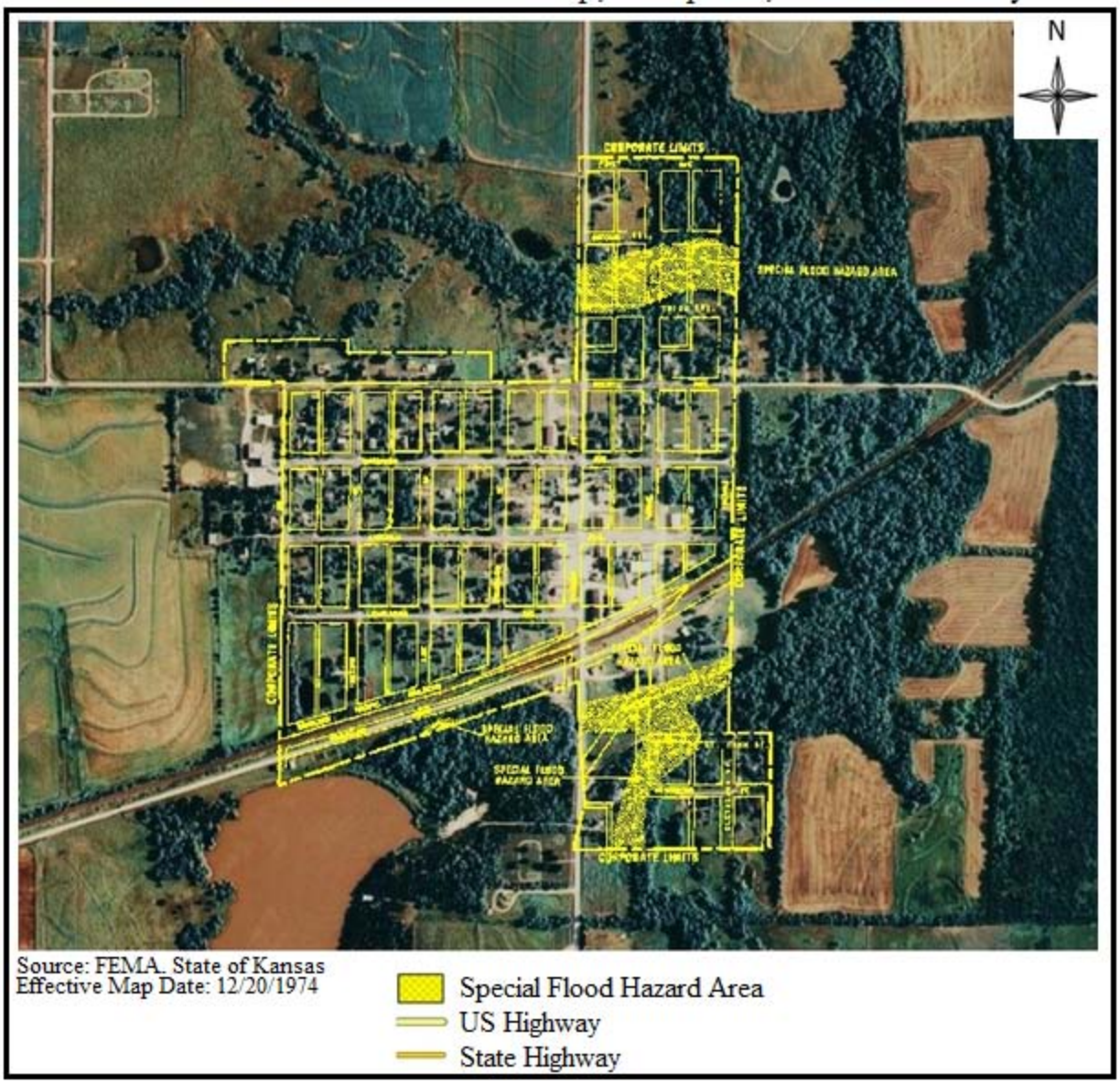
Source: FEMA, State of Kansas
Effective Map Date: 11/22/1974

Special Flood Hazard Area
US Highway
State Highway

FEMA Flood Insurance Rate Map, Garnett, Anderson County



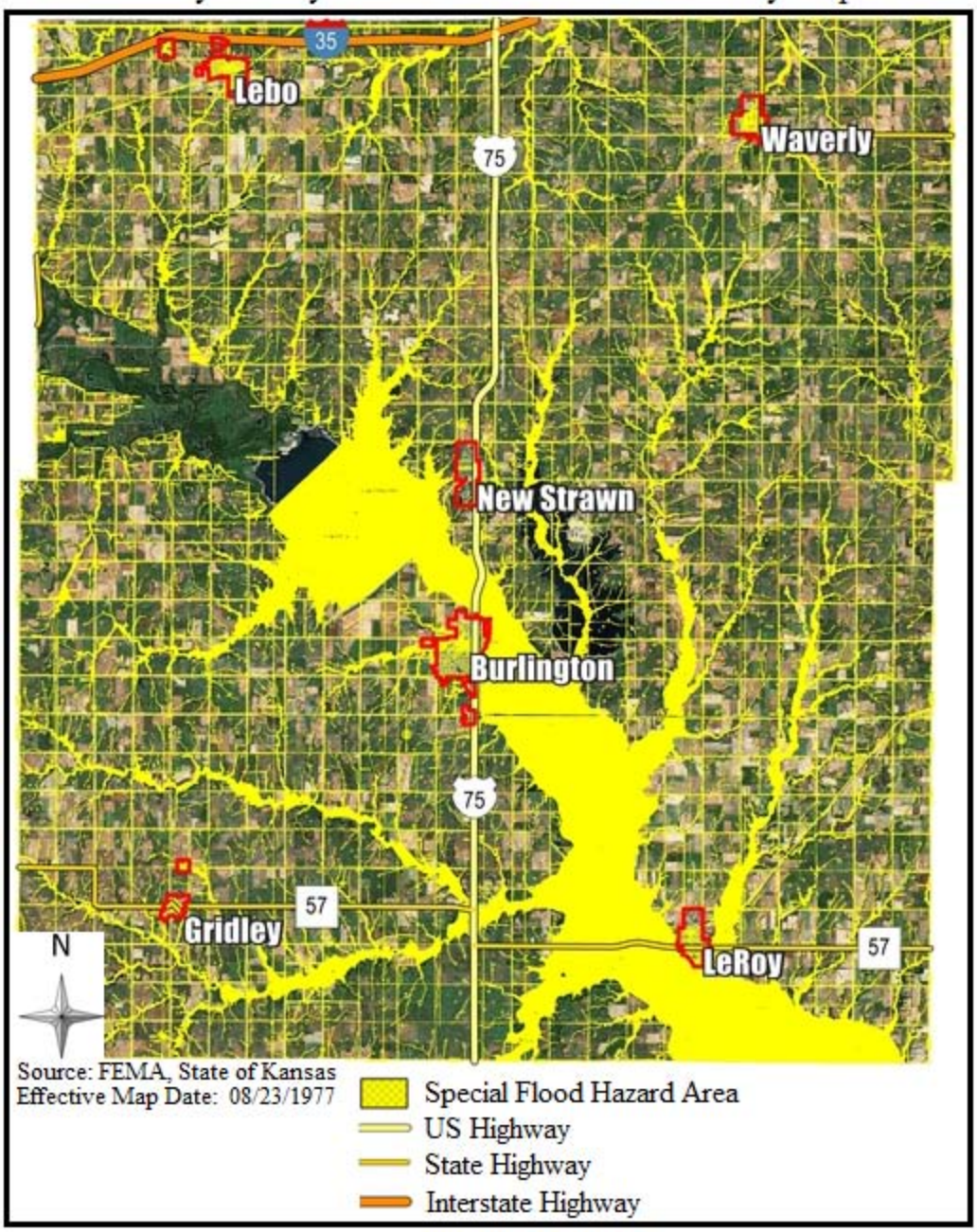
FEMA Flood Insurance Rate Map, Westphalia, Anderson County



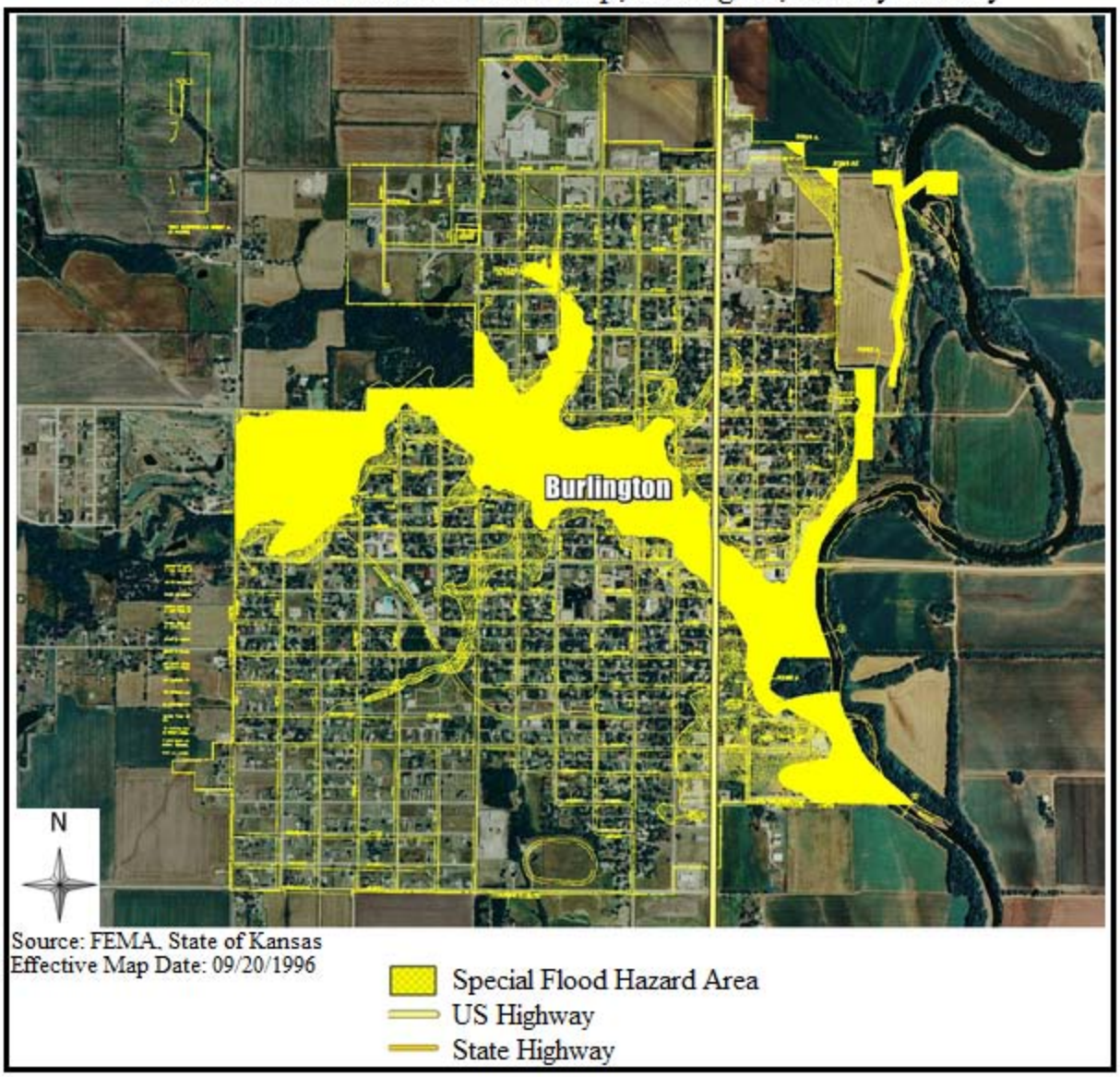
Source: FEMA, State of Kansas
Effective Map Date: 12/20/1974

Special Flood Hazard Area
US Highway
State Highway

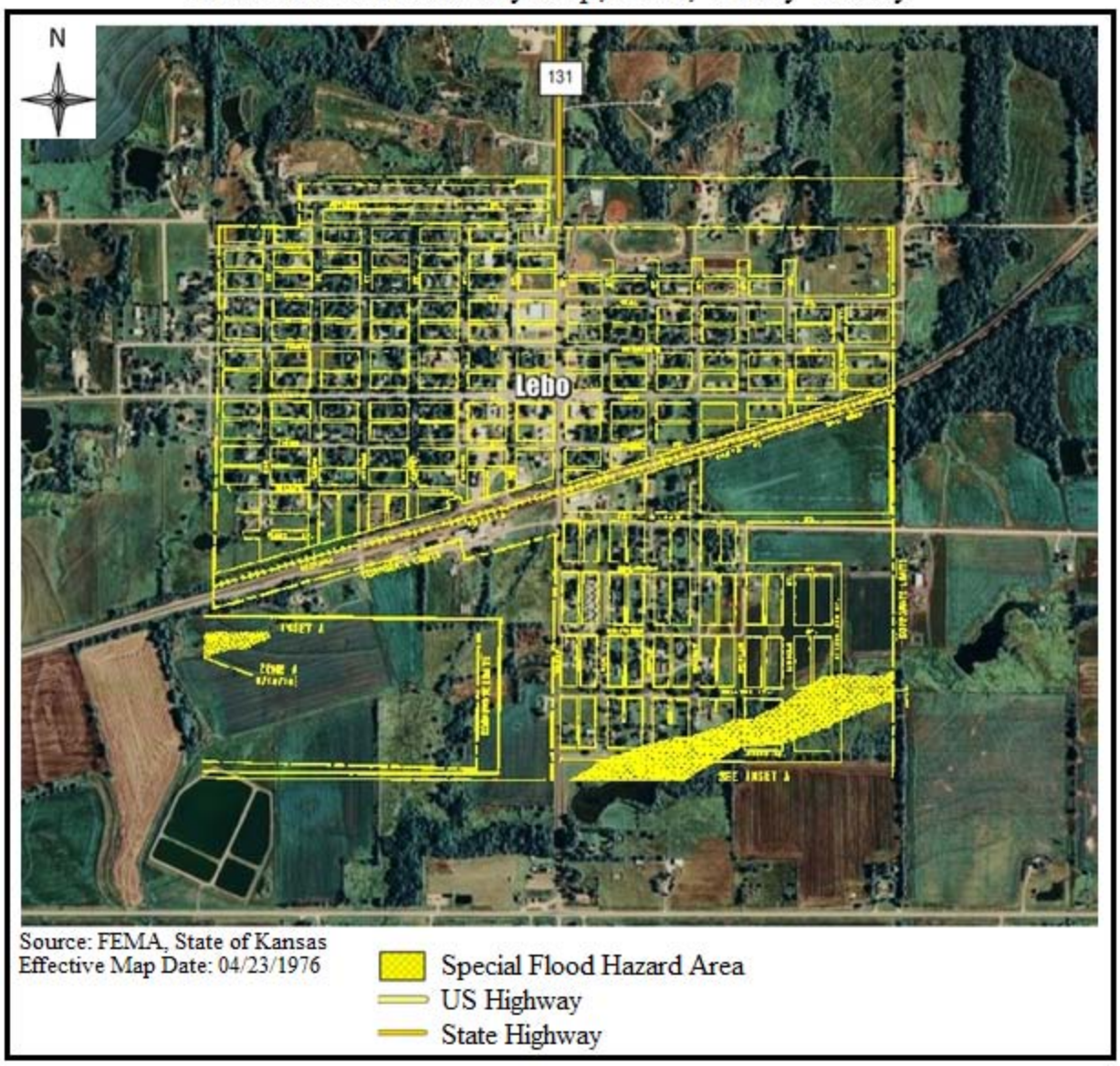
Coffey County FEMA Flood Hazard Boundary Map



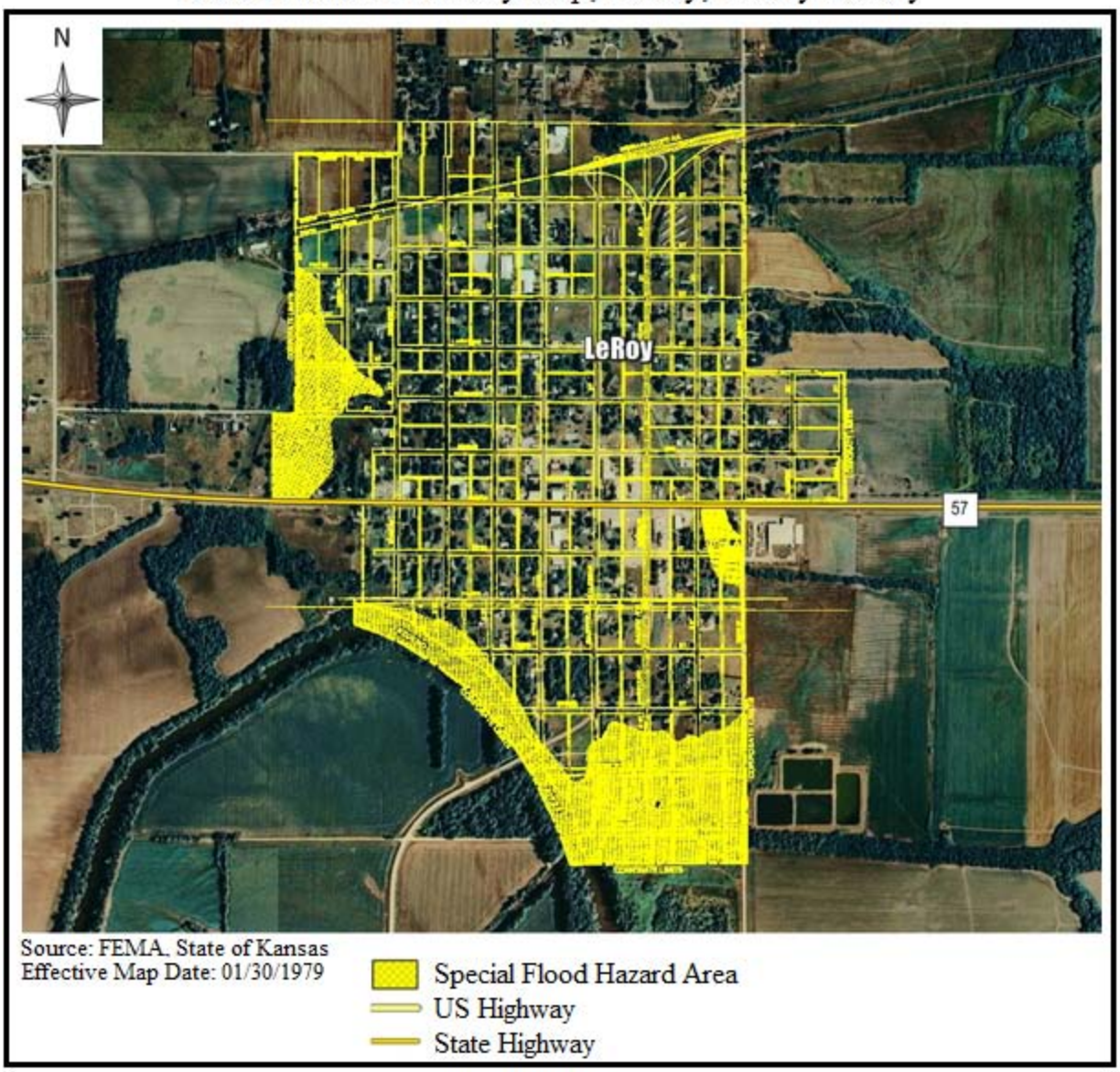
FEMA Flood Insurance Rate Map, Burlington, Coffey County



Flood Hazard Boundary Map, Lebo, Coffey County

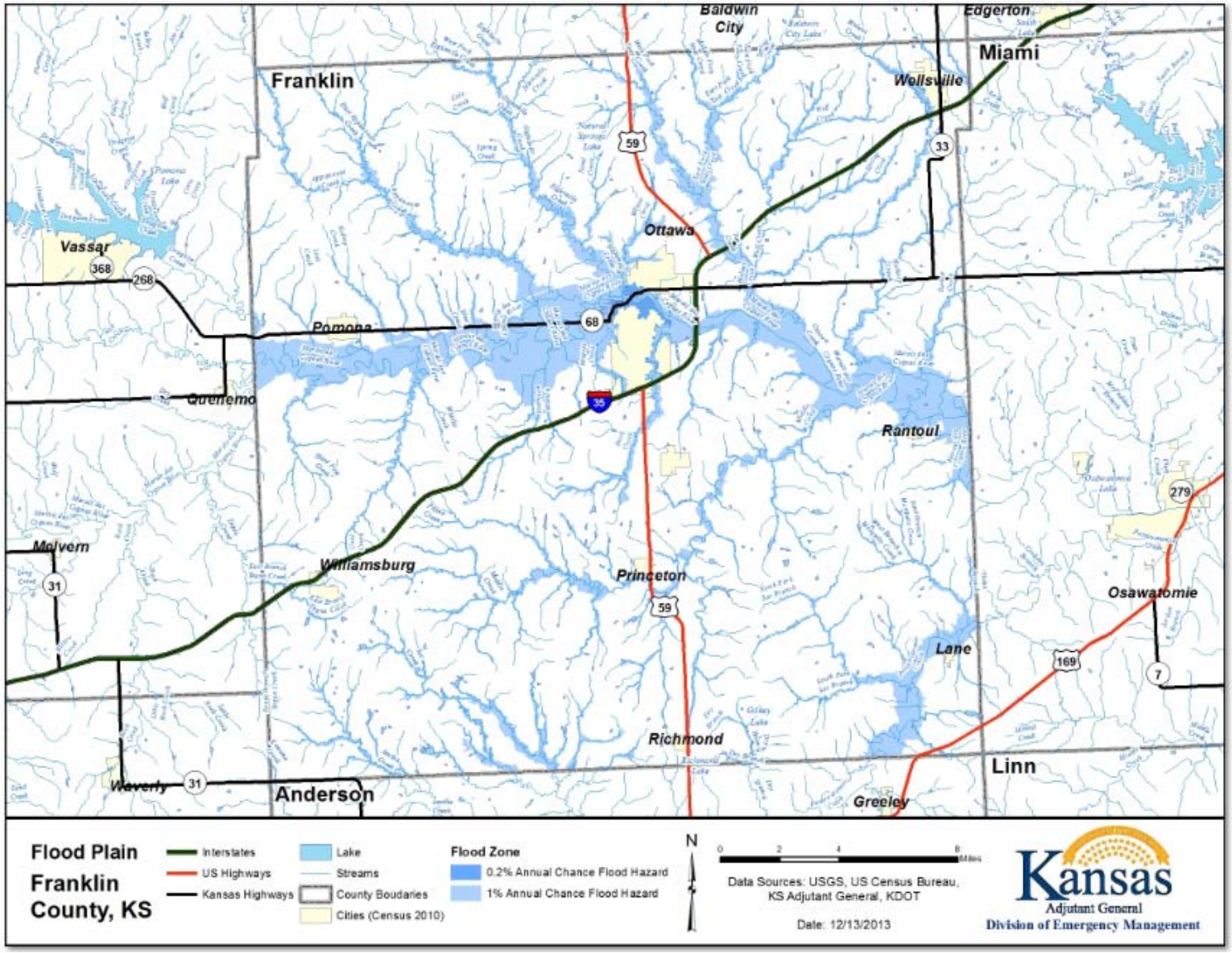


Flood Hazard Boundary Map, LeRoy, Coffey County

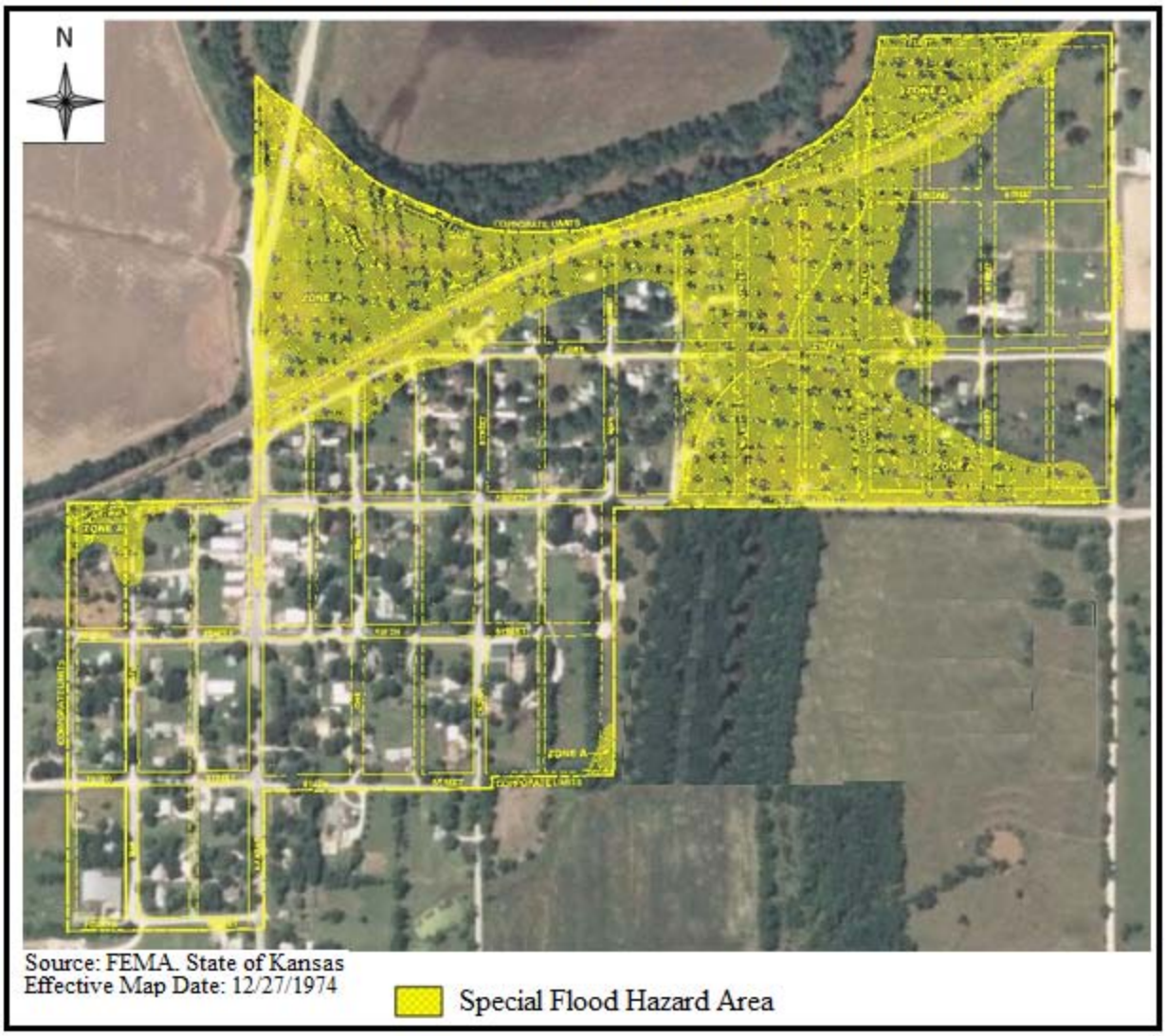


FEMA Flood Insurance Rate Map, Waverly, Coffey County

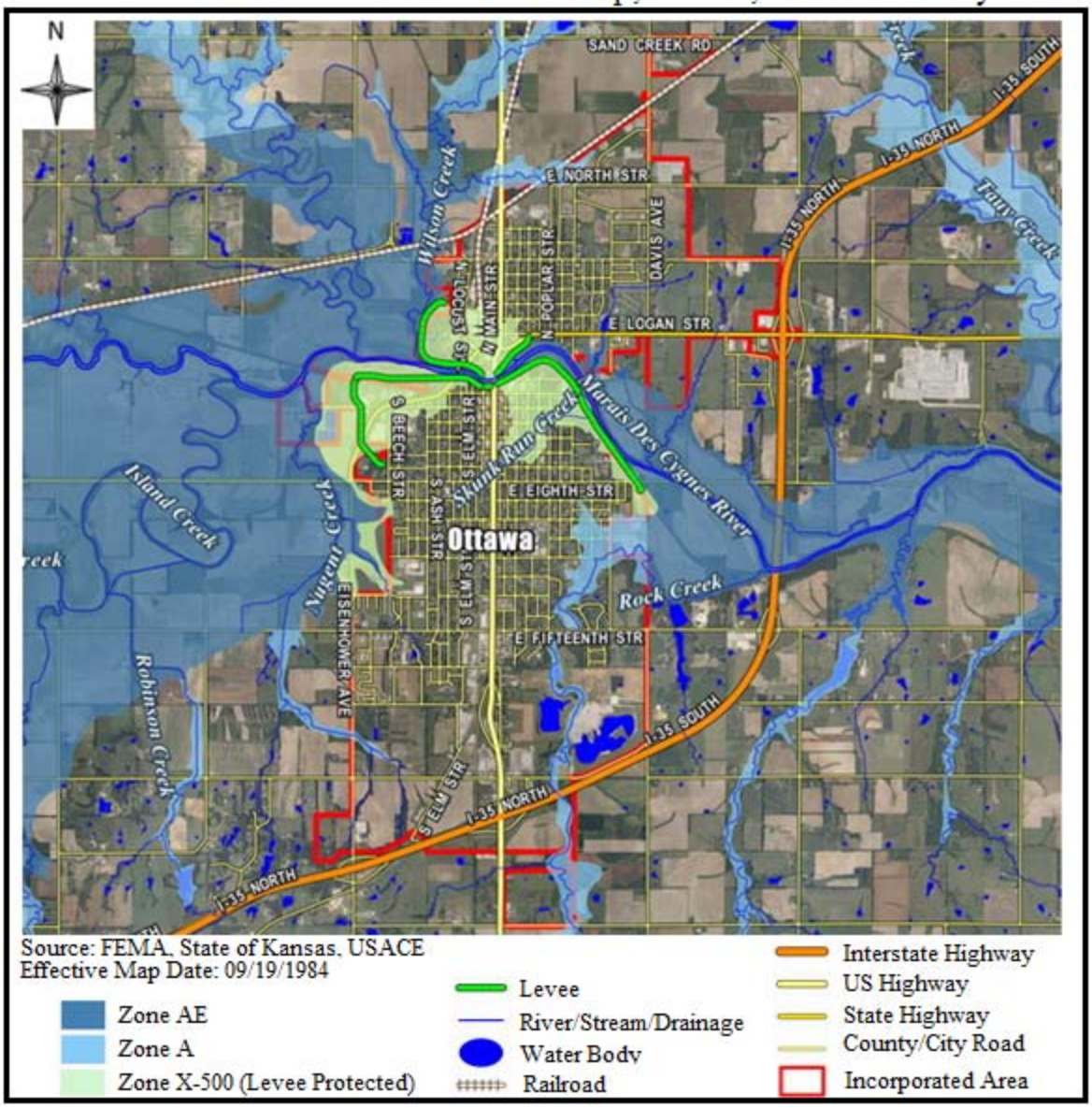

N
Waverly
ZONE A
ZONE A
ZONE A


Baldwin City
Edgerton
Miami
Franklin
Wellsville
Ottawa
Vassar
Pomona
Quenemo
Rantoul
Melvern
Williamsburg
Princeton
Osawatomie
Lane
Richmond
Linn
Waverly
Anderson
Greeley
Flood Plain
Franklin County, KS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
Cities (Census 2010)
Flood Zone
0.2% Annual Chance Flood Hazard
1% Annual Chance Flood Hazard
N
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT
Date: 12/13/2013
Kansas
Adjutant General
Division of Emergency Management

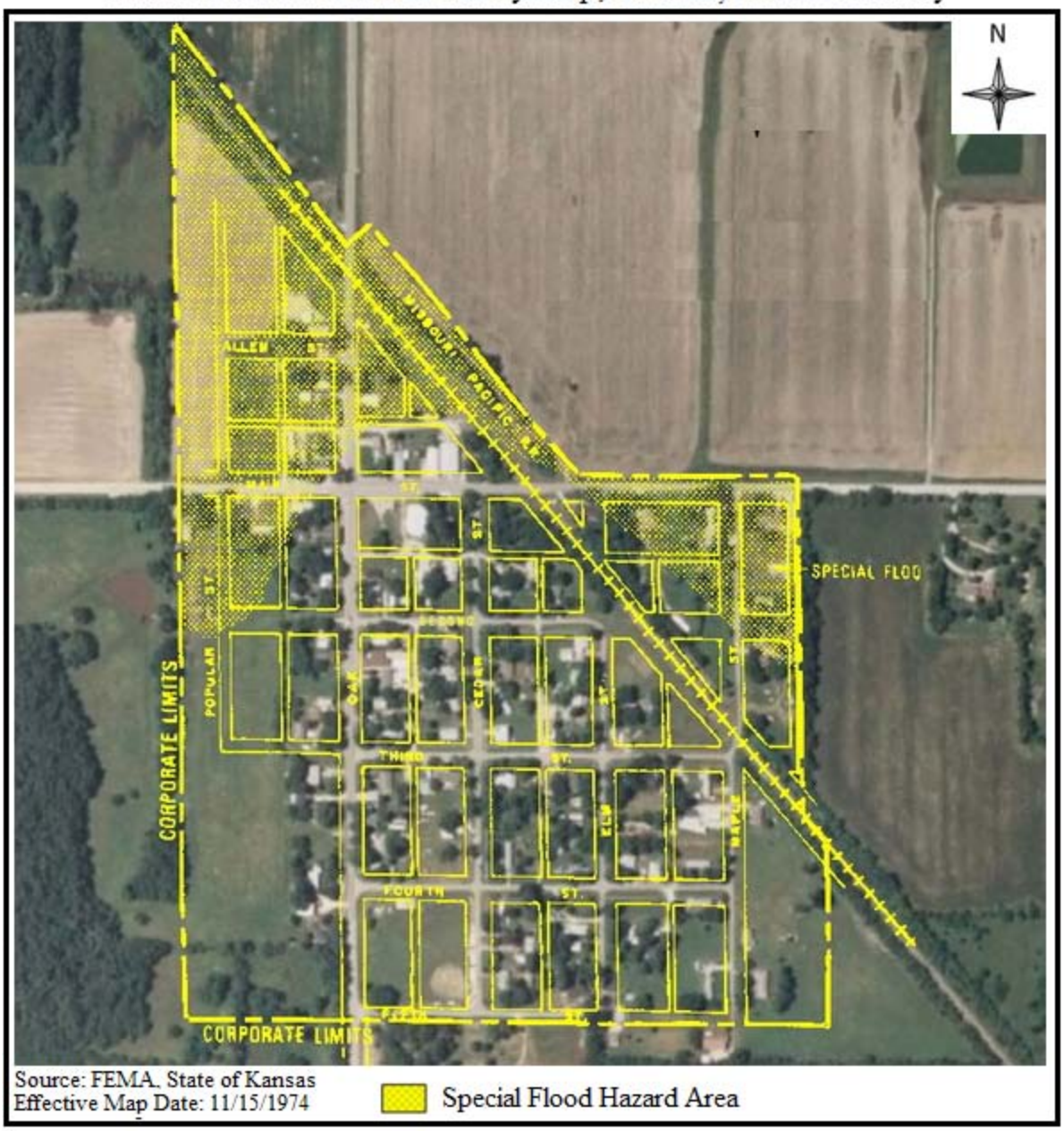
FEMA Flood Hazard Boundary Map, Lane, Franklin County



FEMA Flood Insurance Rate Map, Ottawa, Franklin County



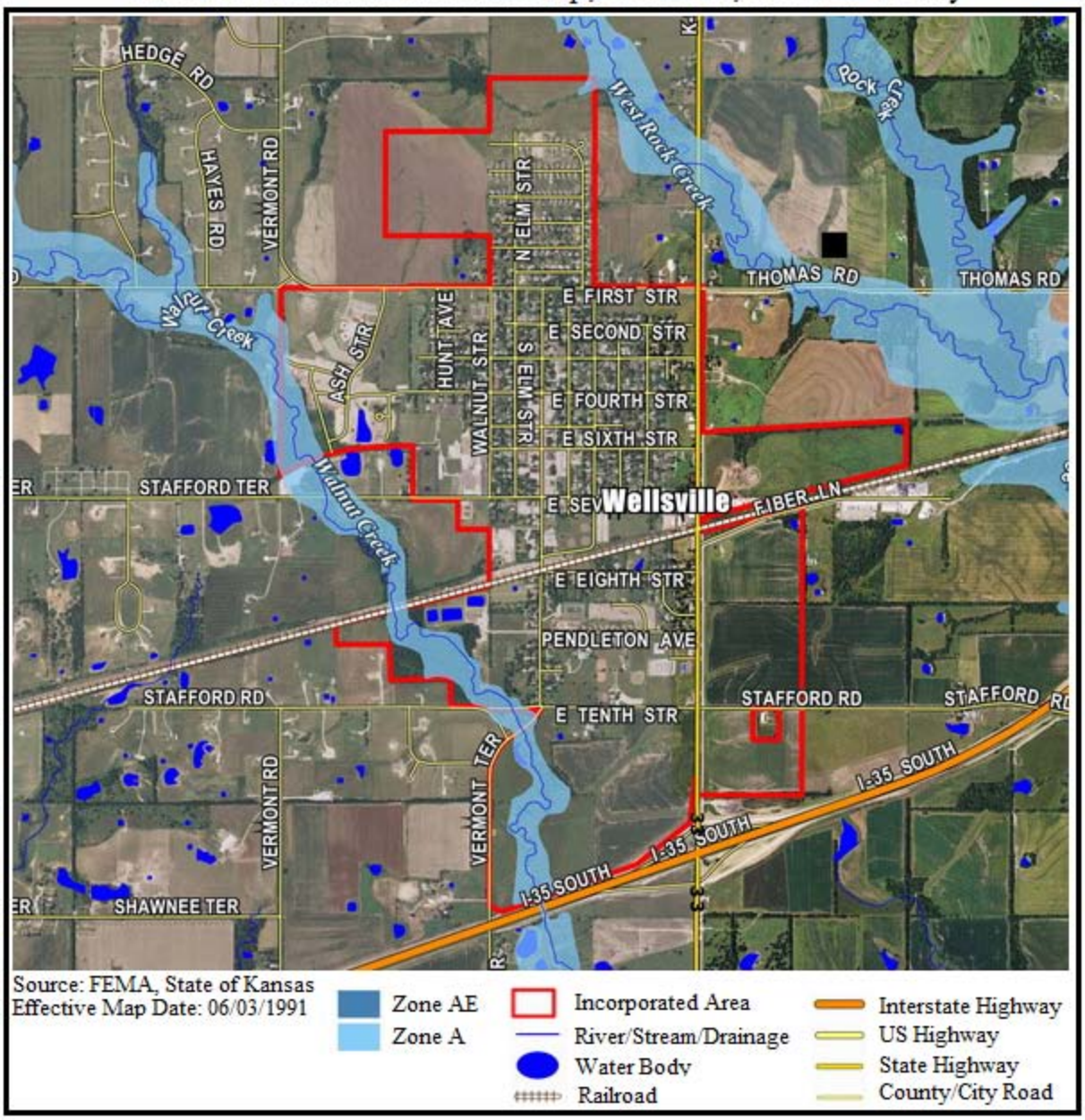
FEMA Flood Hazard Boundary Map, Rantoul, Frankilin County

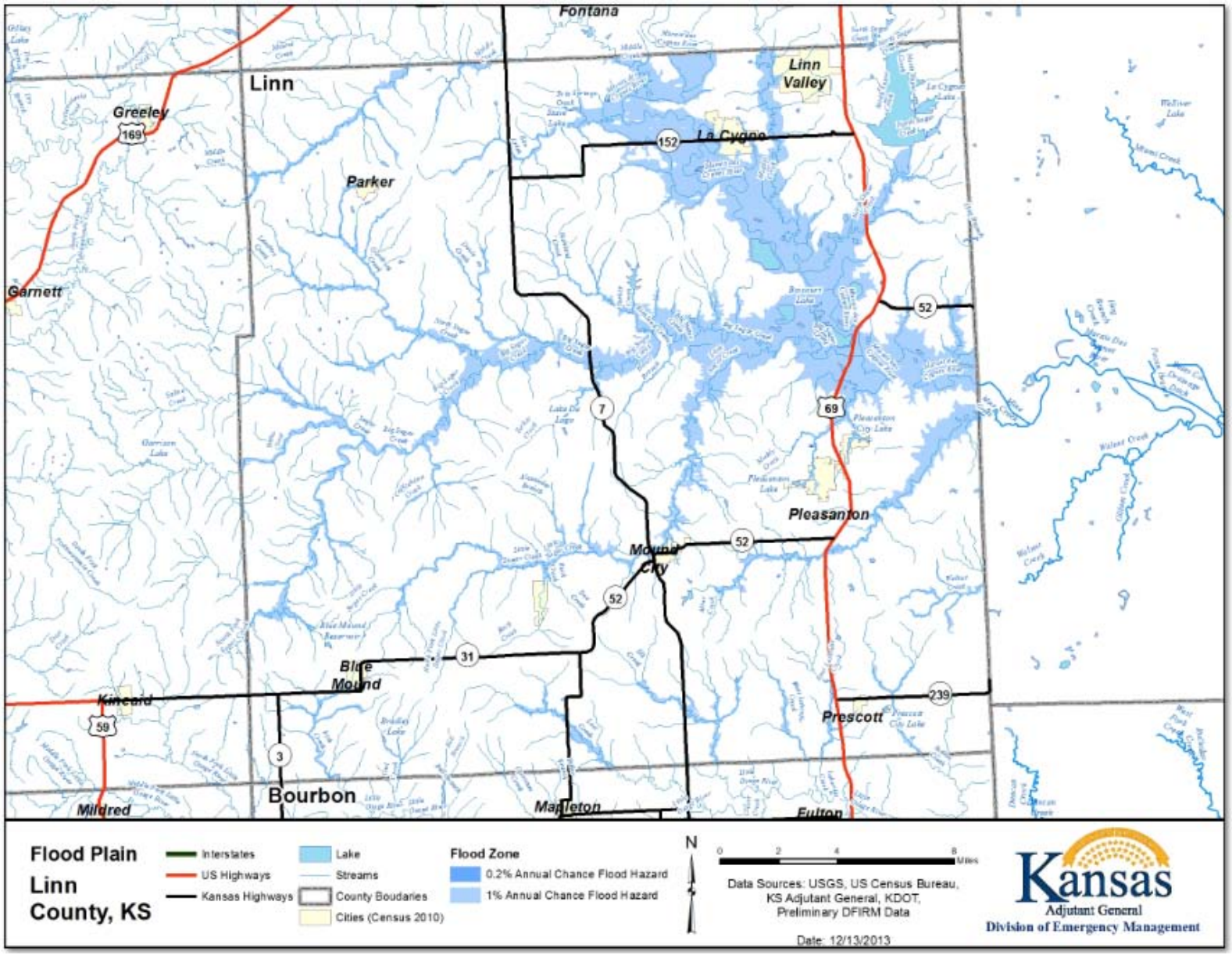


Source: FEMA, State of Kansas
Effective Map Date: 11/15/1974

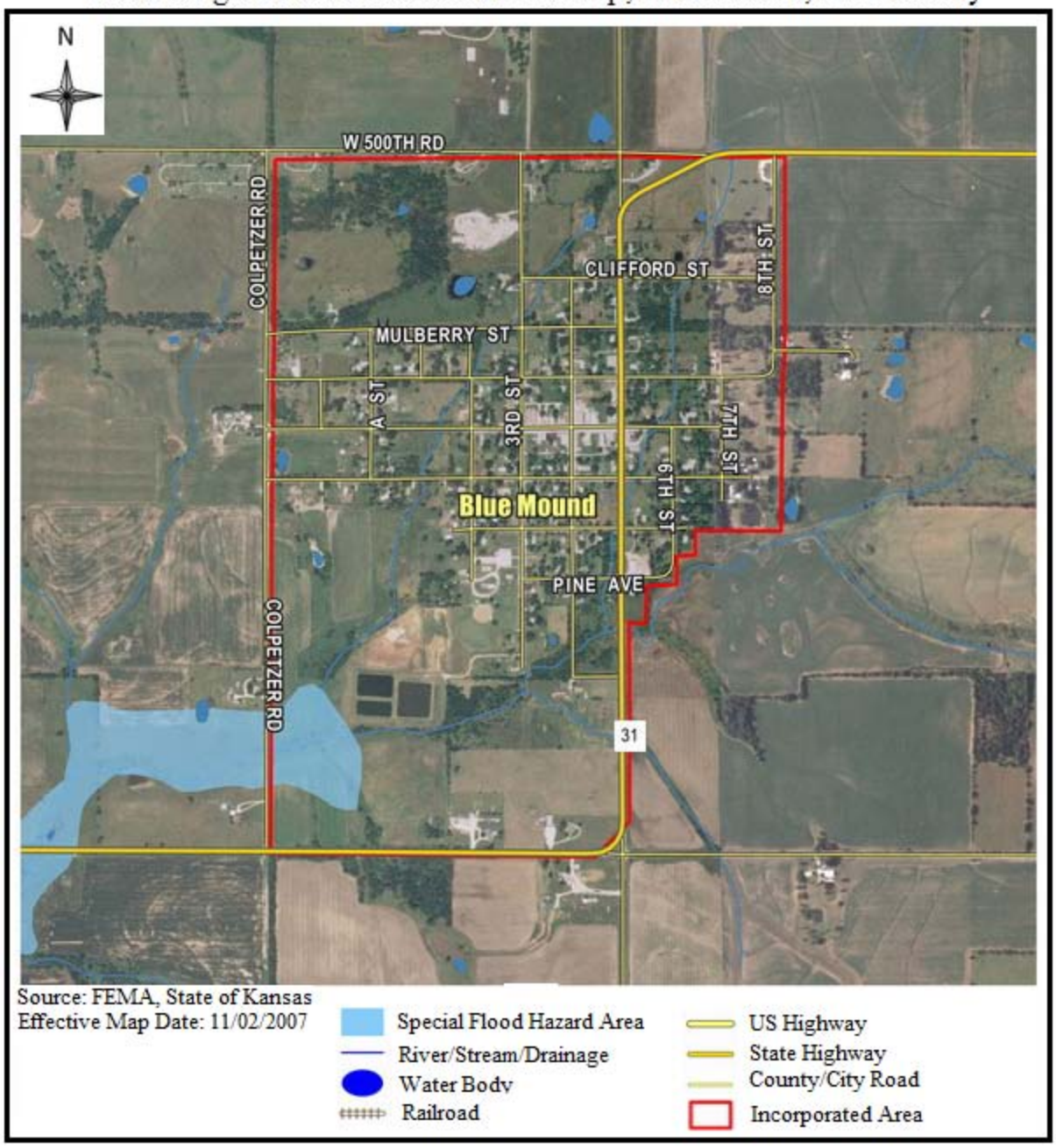
Special Flood Hazard Area

FEMA Flood Insurance Rate Map, Wellsville, Franklin County

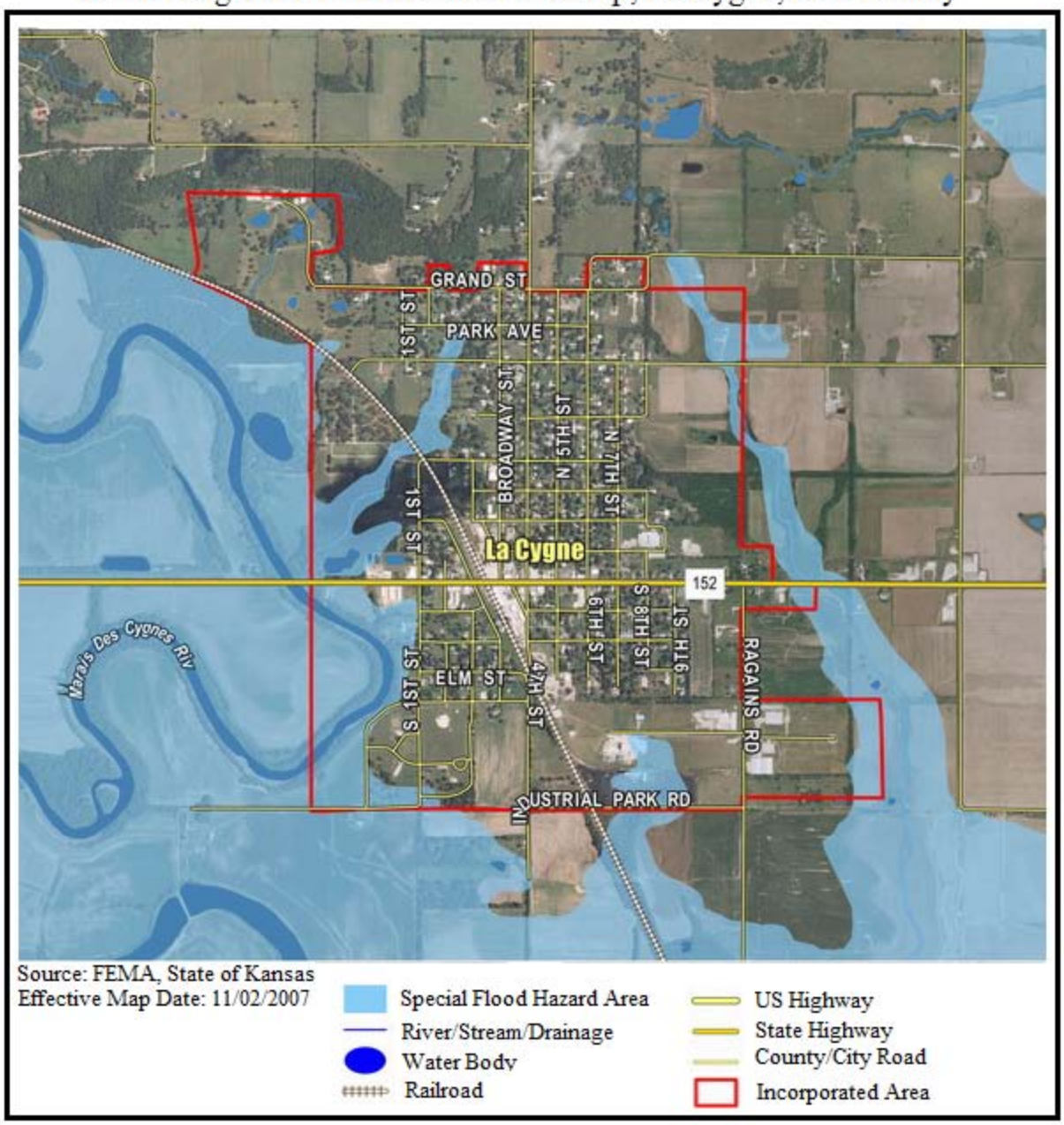



Fontana
Linn
Linn Valley
Greeley
169
Parker
152
La Cygne
Garnett
52
69
7
Pleasanton
Mound City
52
52
31
Blue Mound
Kincaid
59
239
Prescott
3
Bourbon
Mildred
Mapleton
Fulton
Flood Plain
Linn
County, KS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
Cities (Census 2010)
Flood Zone
0.2% Annual Chance Flood Hazard
1% Annual Chance Flood Hazard
N
0 2 4 8
Miles
Data Sources: USGS, US Census Bureau,
KS Adjutant General, KDOT,
Preliminary DFIRM Data
Date: 12/13/2013
Kansas
Adjutant General
Division of Emergency Management

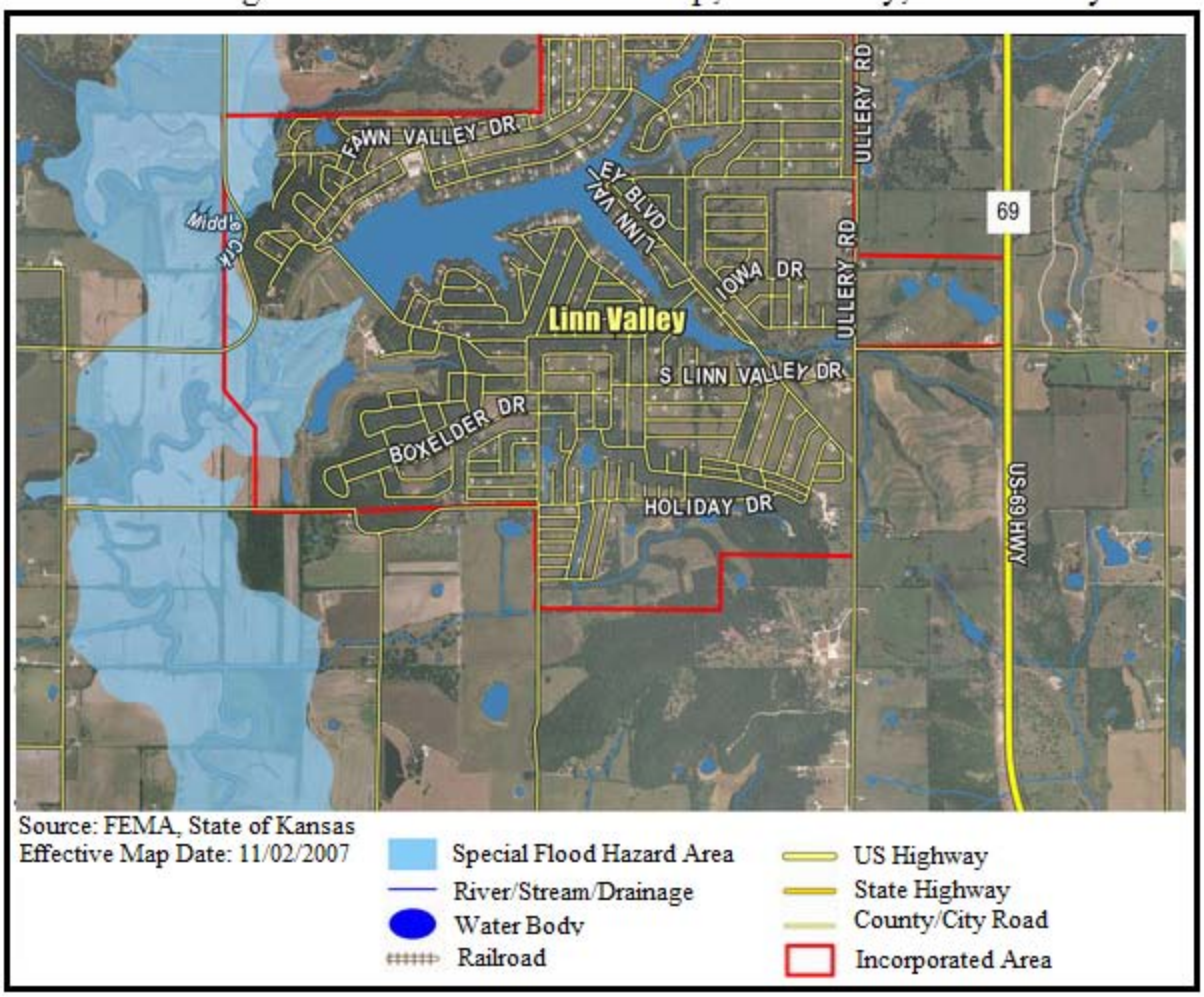
FEMA Digital Flood Insurance Rate Map, Blue Mound, Linn County



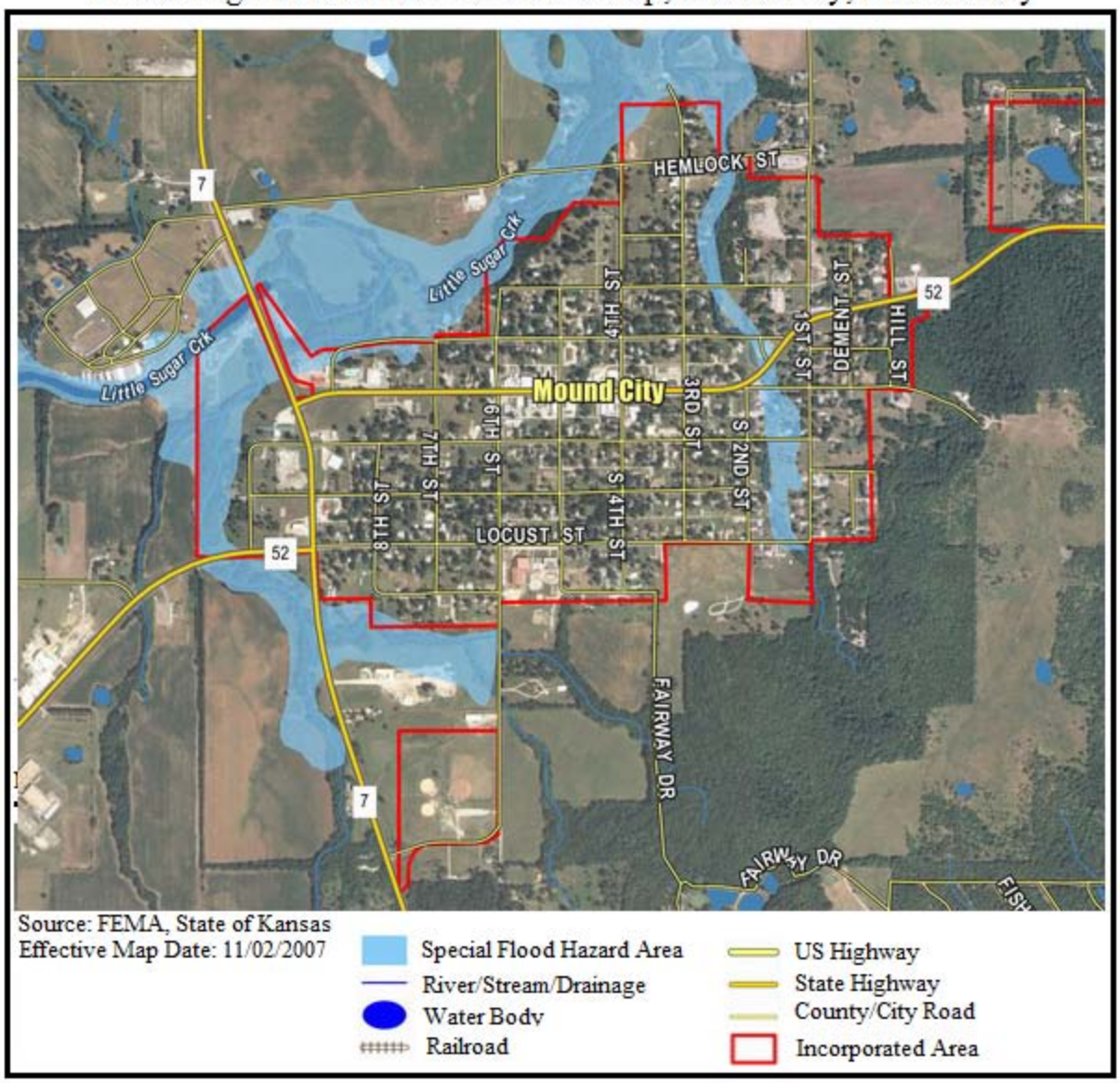
FEMA Digital Flood Insurance Rate Map, La Cygne, Linn County



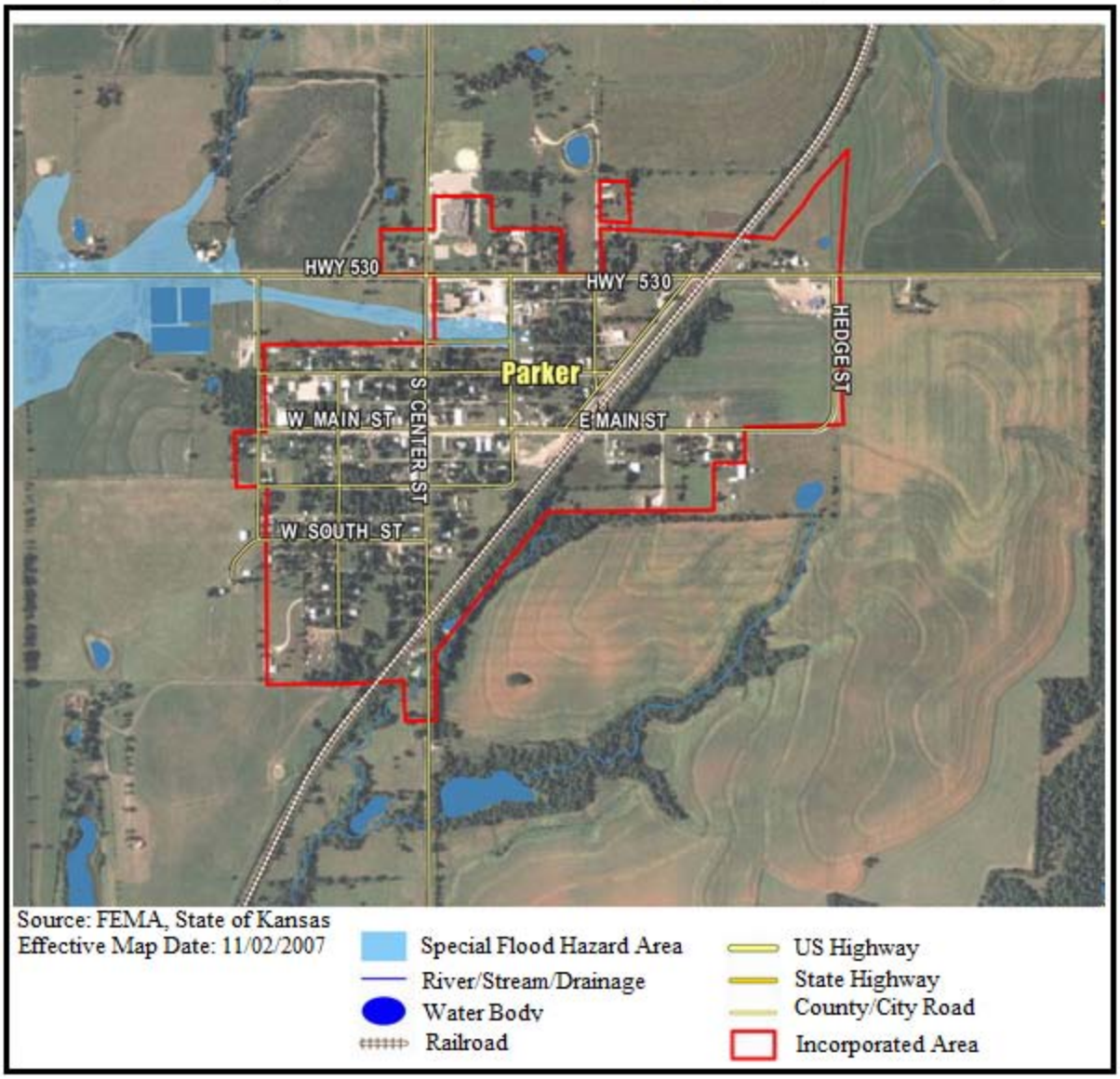
FEMA Digital Flood Insurance Rate Map, Linn Valley, Linn County



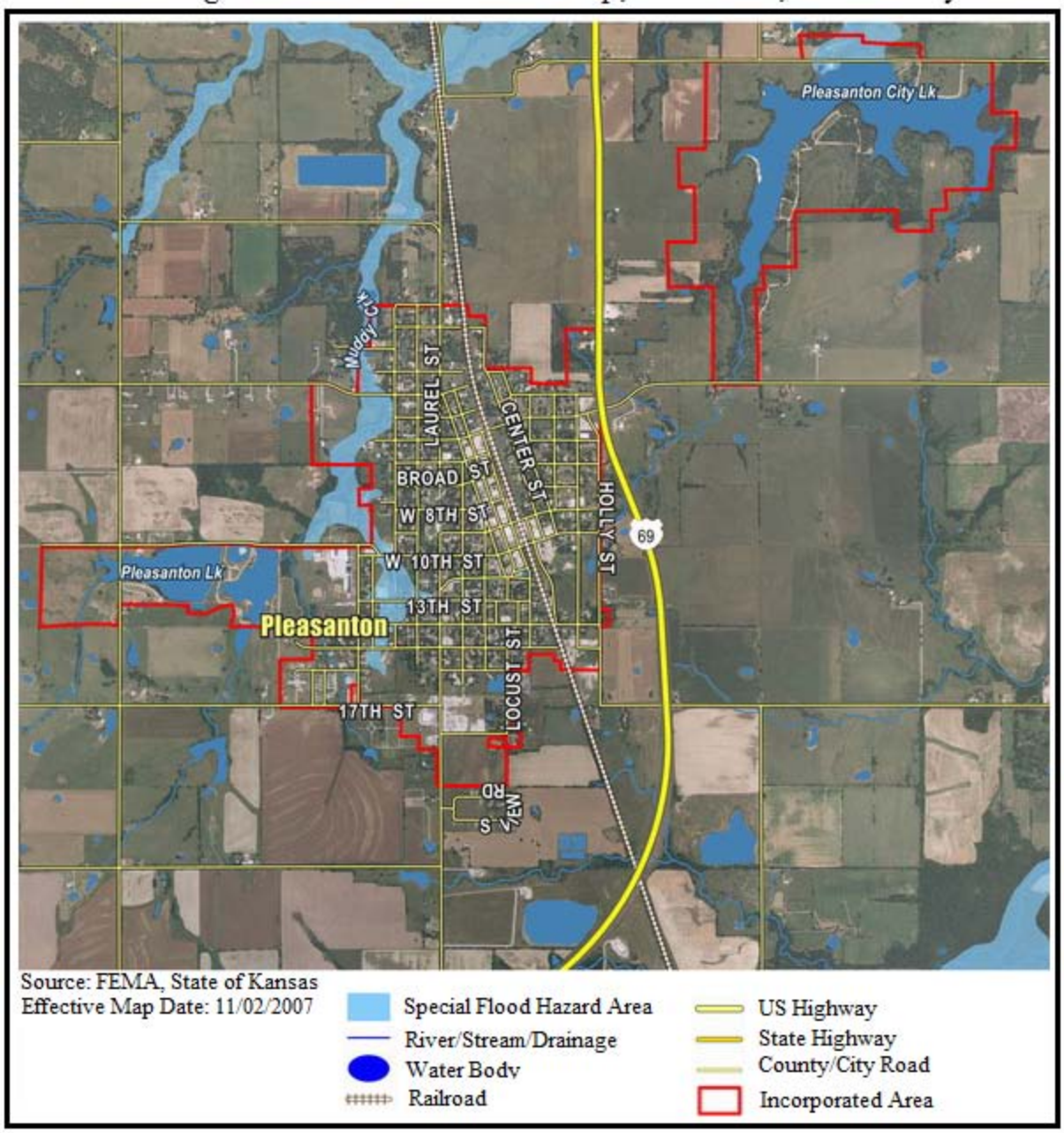
FEMA Digital Flood Insurance Rate Map, Mound City, Linn County



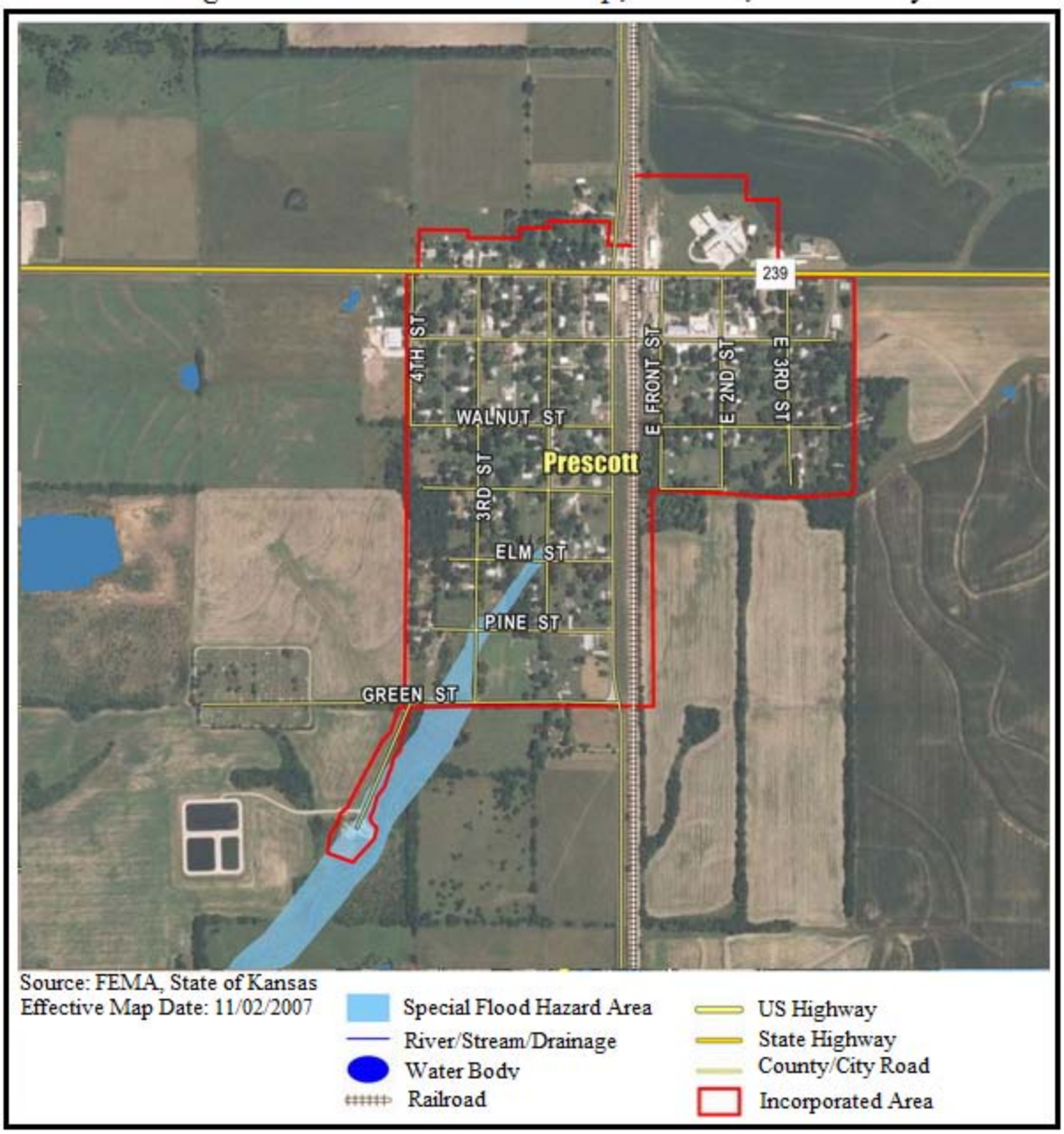
FEMA Digital Flood Insurance Rate Map, Parker, Linn County

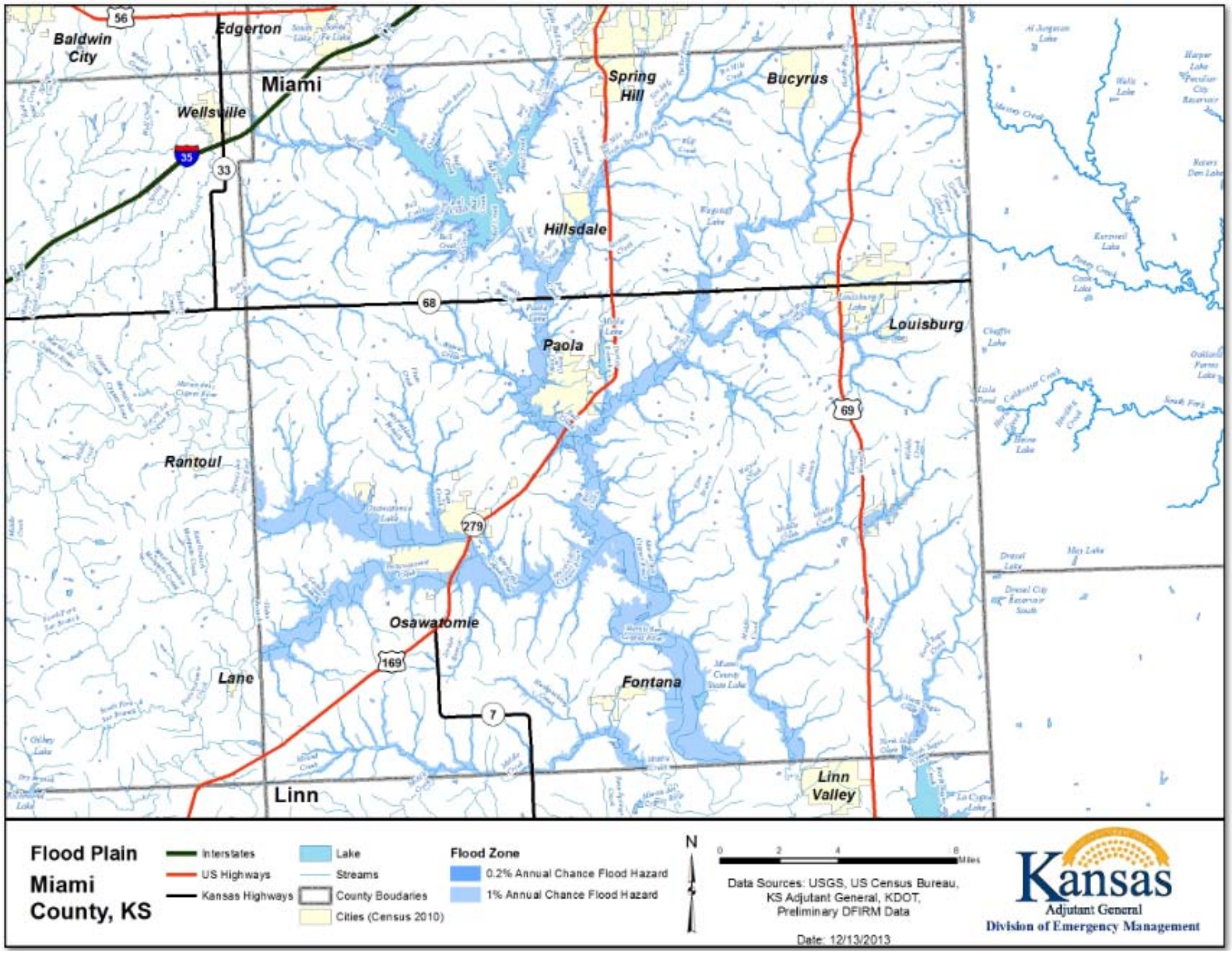


FEMA Digital Flood Insurance Rate Map, Pleasanton, Linn County

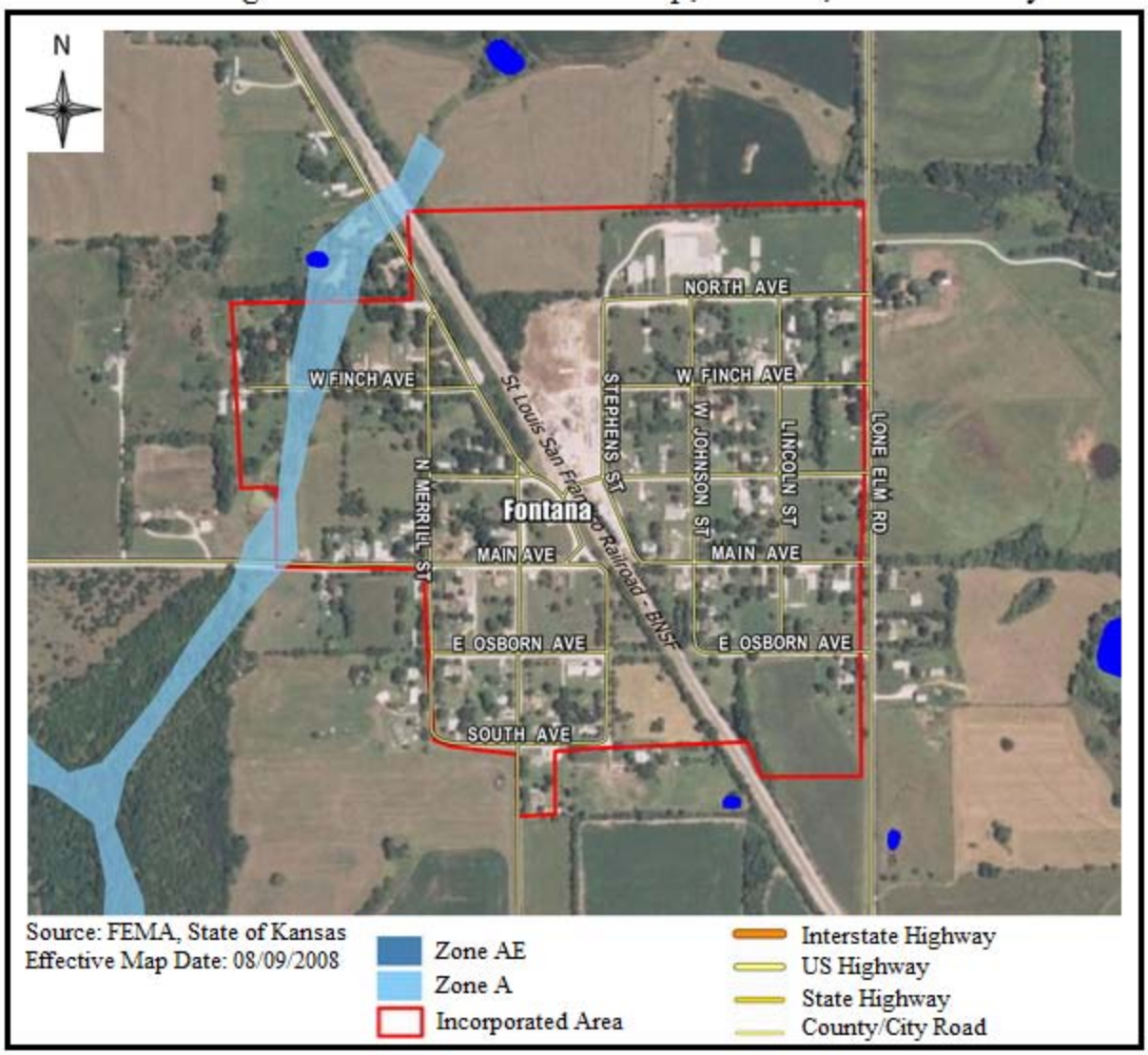


FEMA Digital Flood Insurance Rate Map, Prescott, Linn County

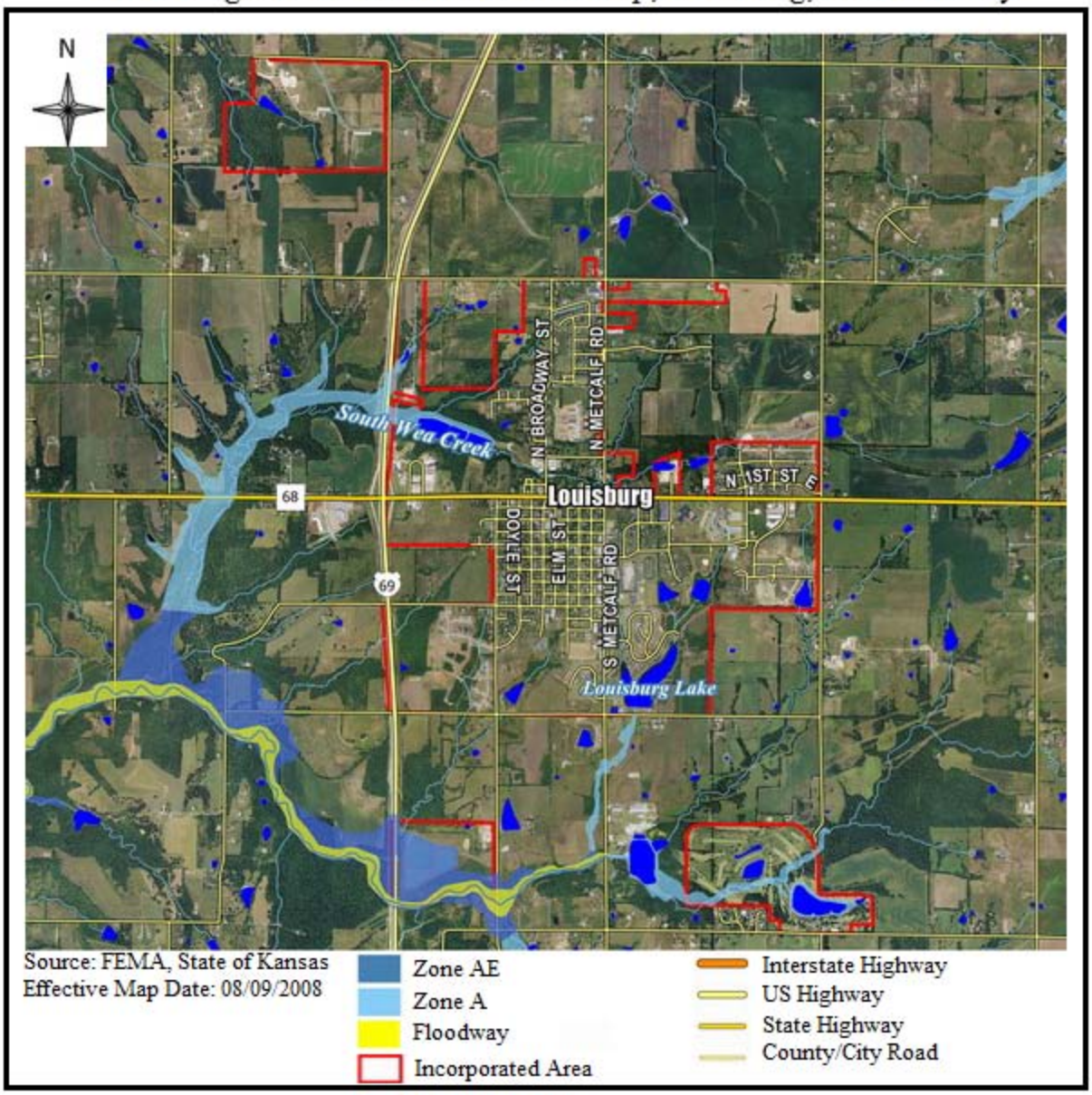



Baldwin City
Edgerton
Miami
Wellsville
Spring Hill
Bucyrus
Hillsdale
Louisburg
Paola
Rantoul
Osawatomie
Lane
Fontana
Linn
Linn Valley
56
35
33
68
69
279
169
7
Flood Plain
Miami
County, KS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
Cities (Census 2010)
Flood Zone
0.2% Annual Chance Flood Hazard
1% Annual Chance Flood Hazard
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, Preliminary DFIRM Data
Date: 12/13/2013
Kansas
Adjutant General
Division of Emergency Management

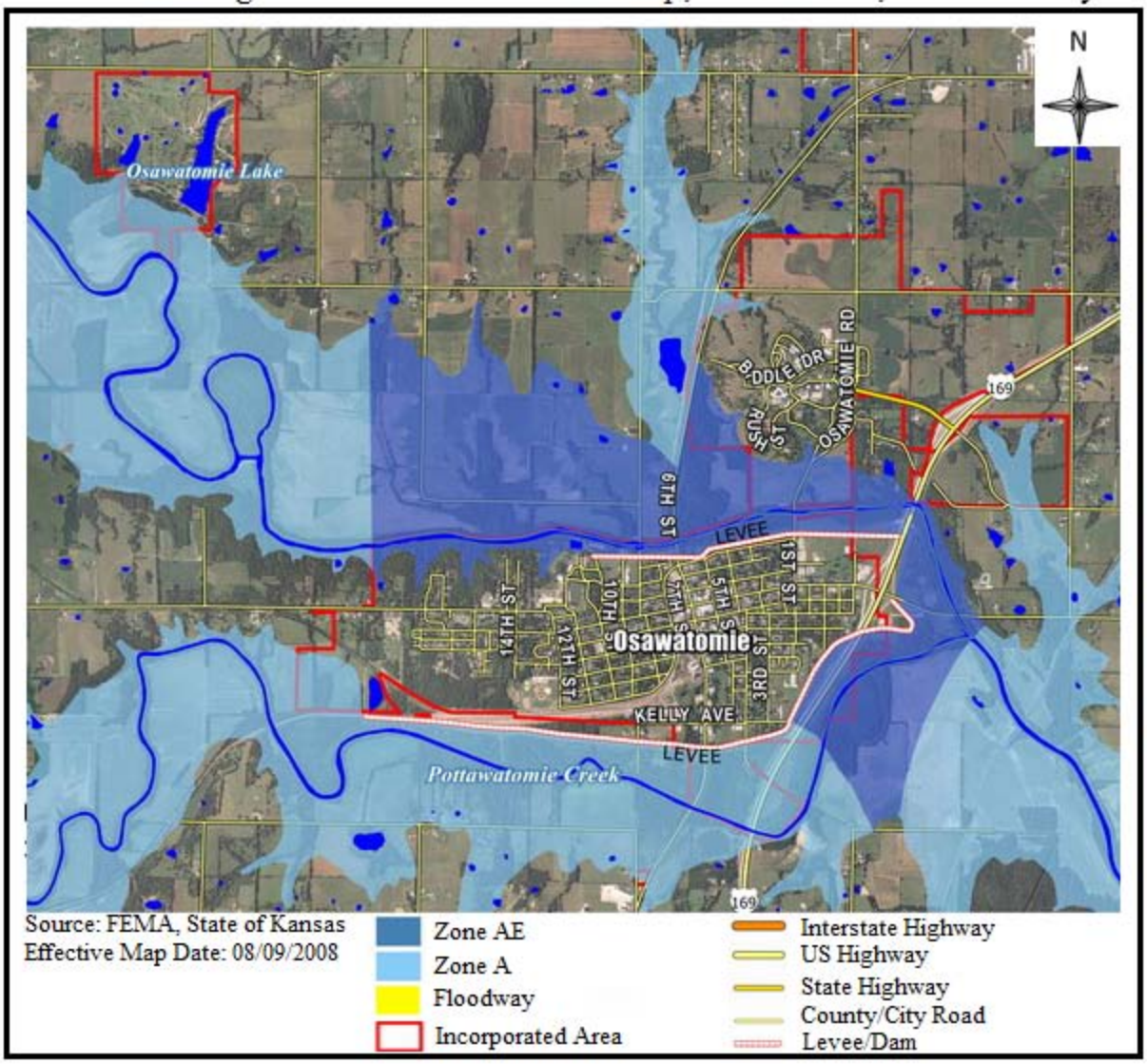
FEMA Digital Flood Insurance Rate Map, Fontana, Miami County



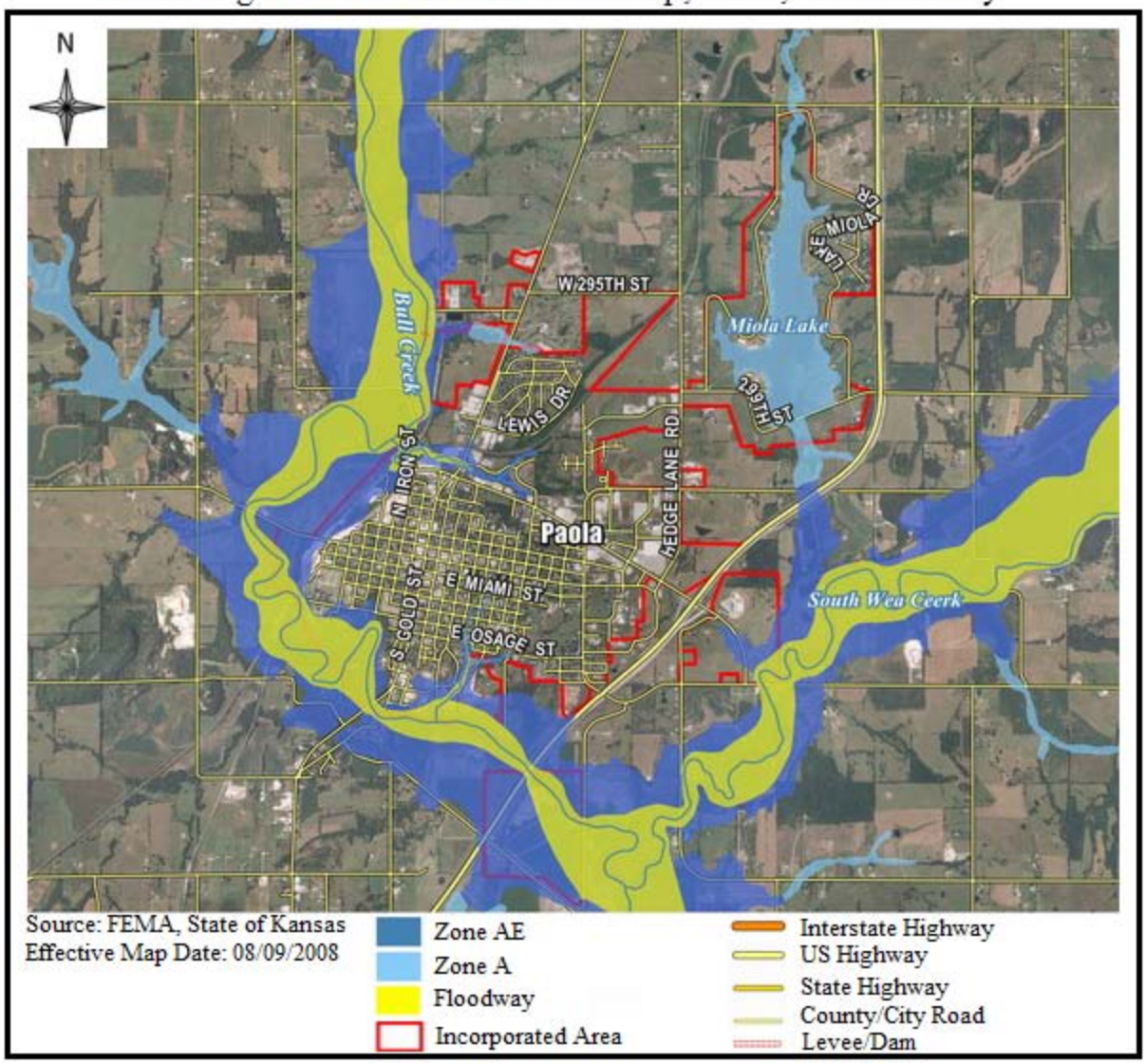
FEMA Digital Flood Insurance Rate Map, Loiusburg, Miami County



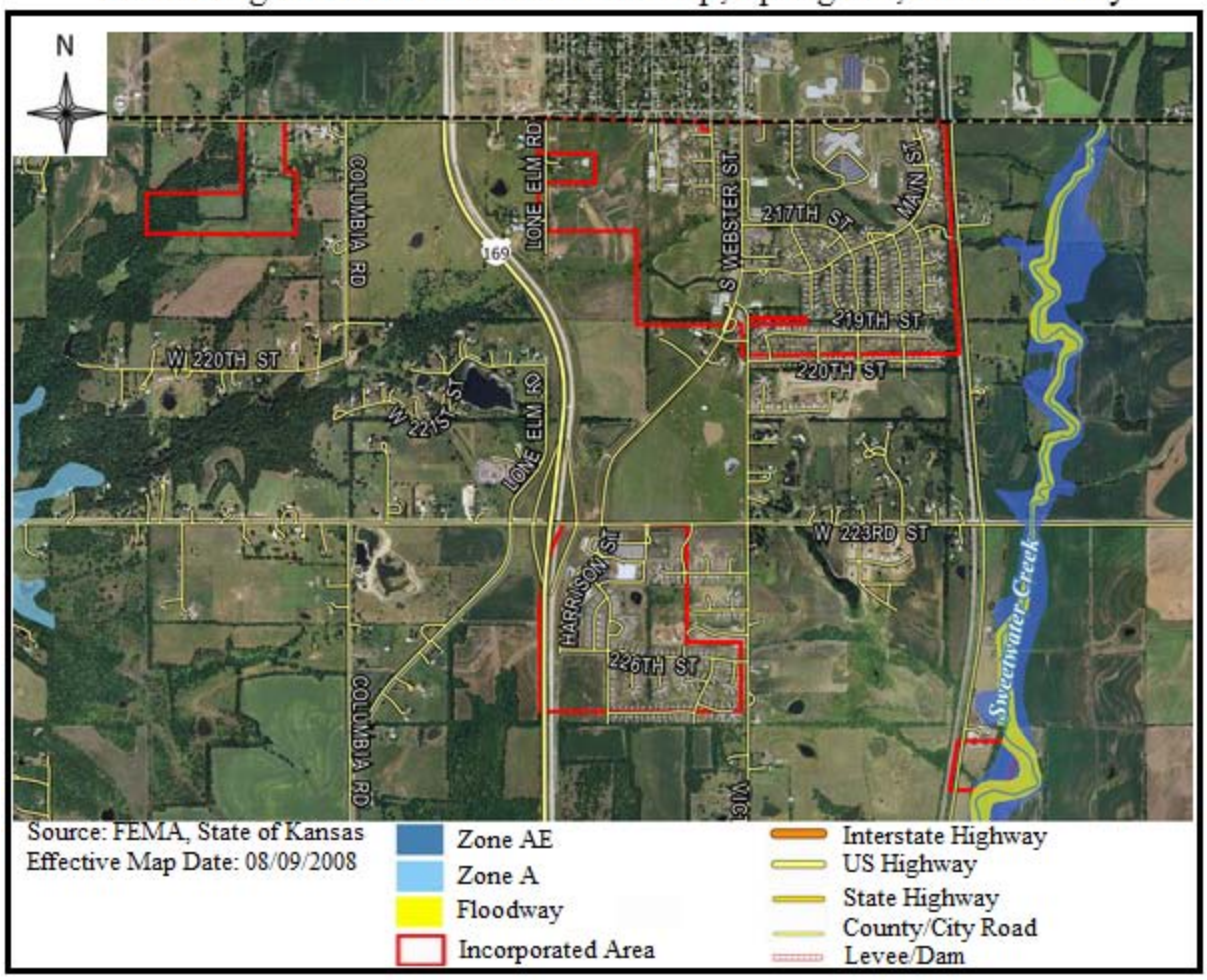
FEMA Digital Flood Insurance Rate Map, Osawatomie, Miami County

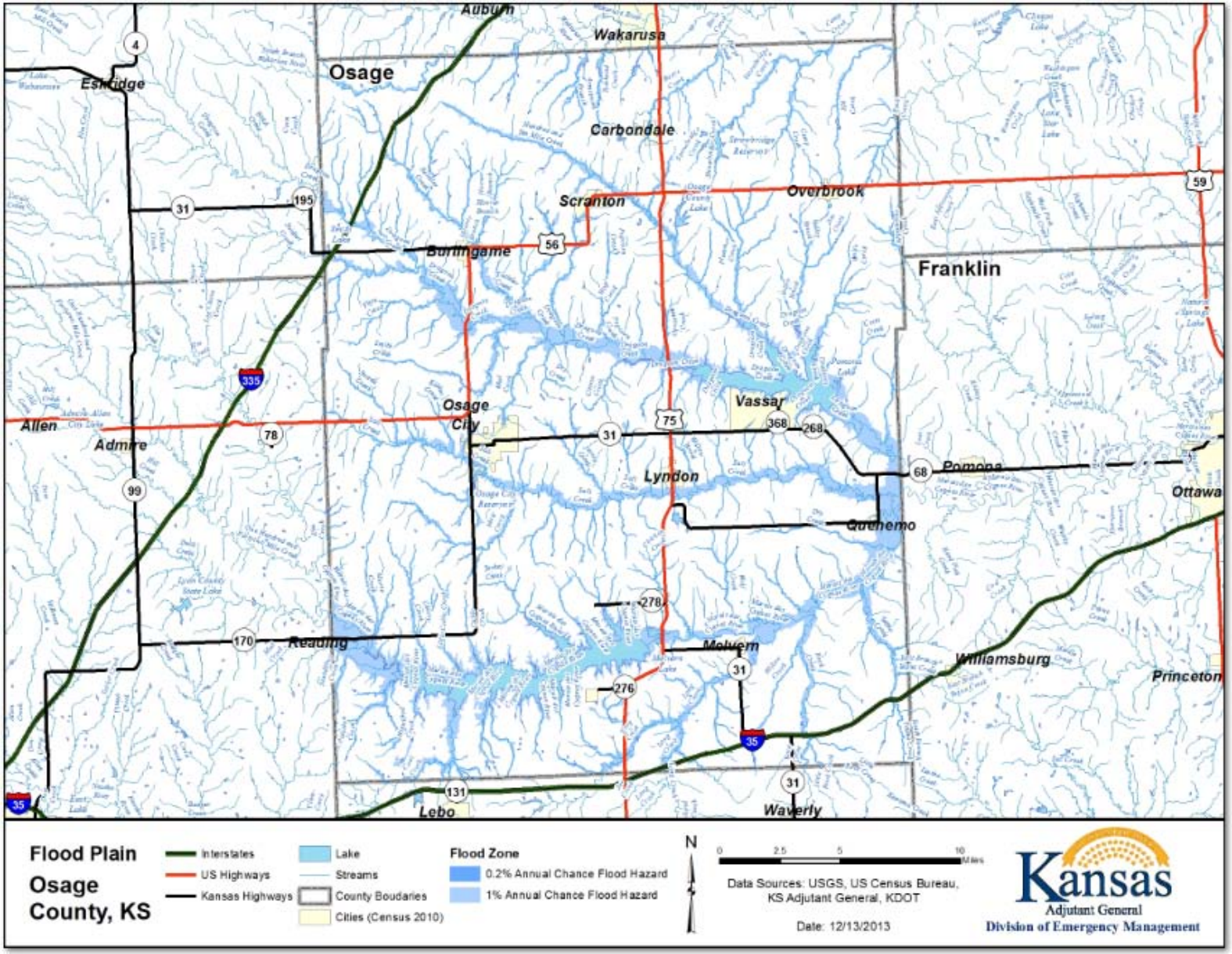


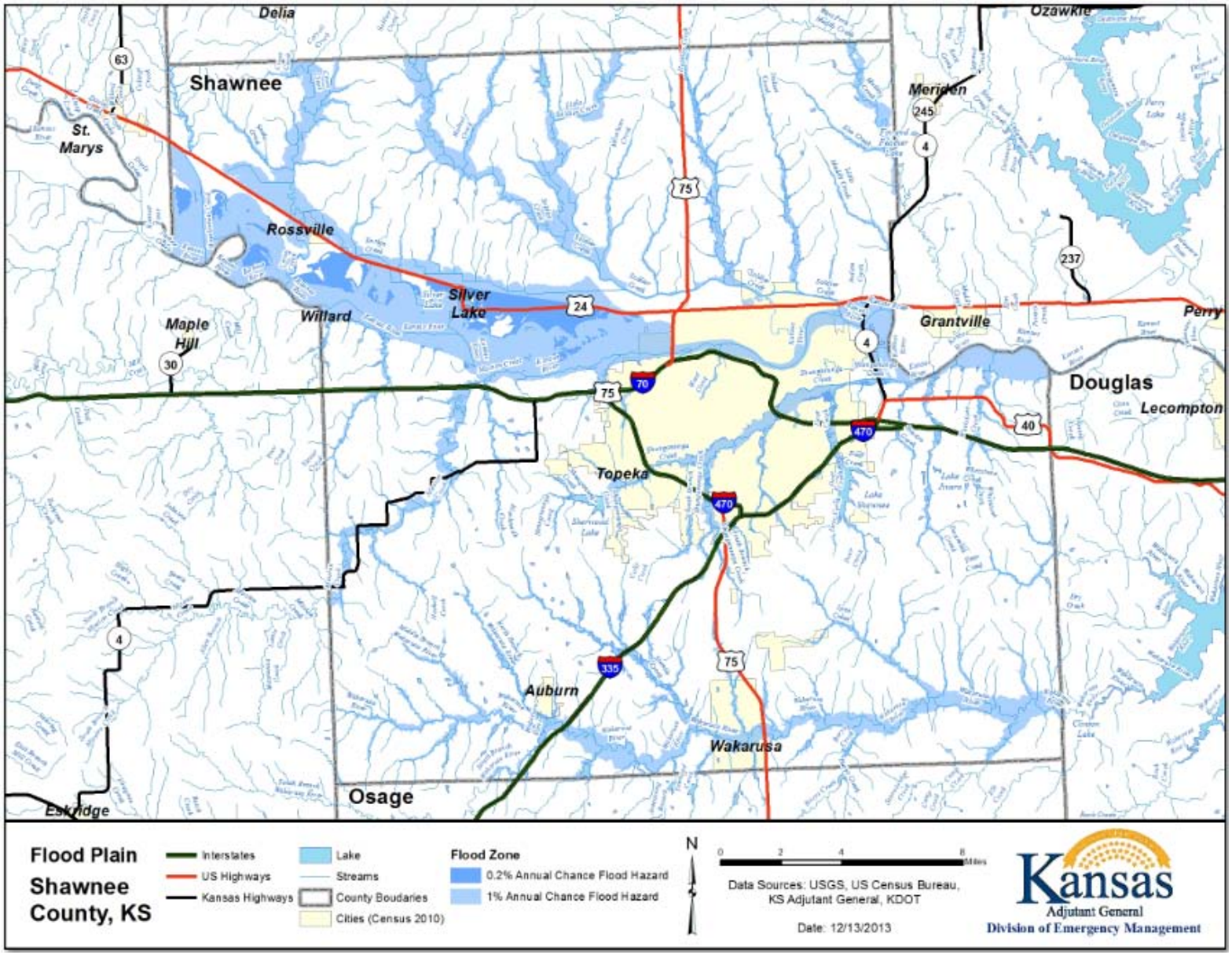
FEMA Digital Flood Insurance Rate Map, Paola, Miami County



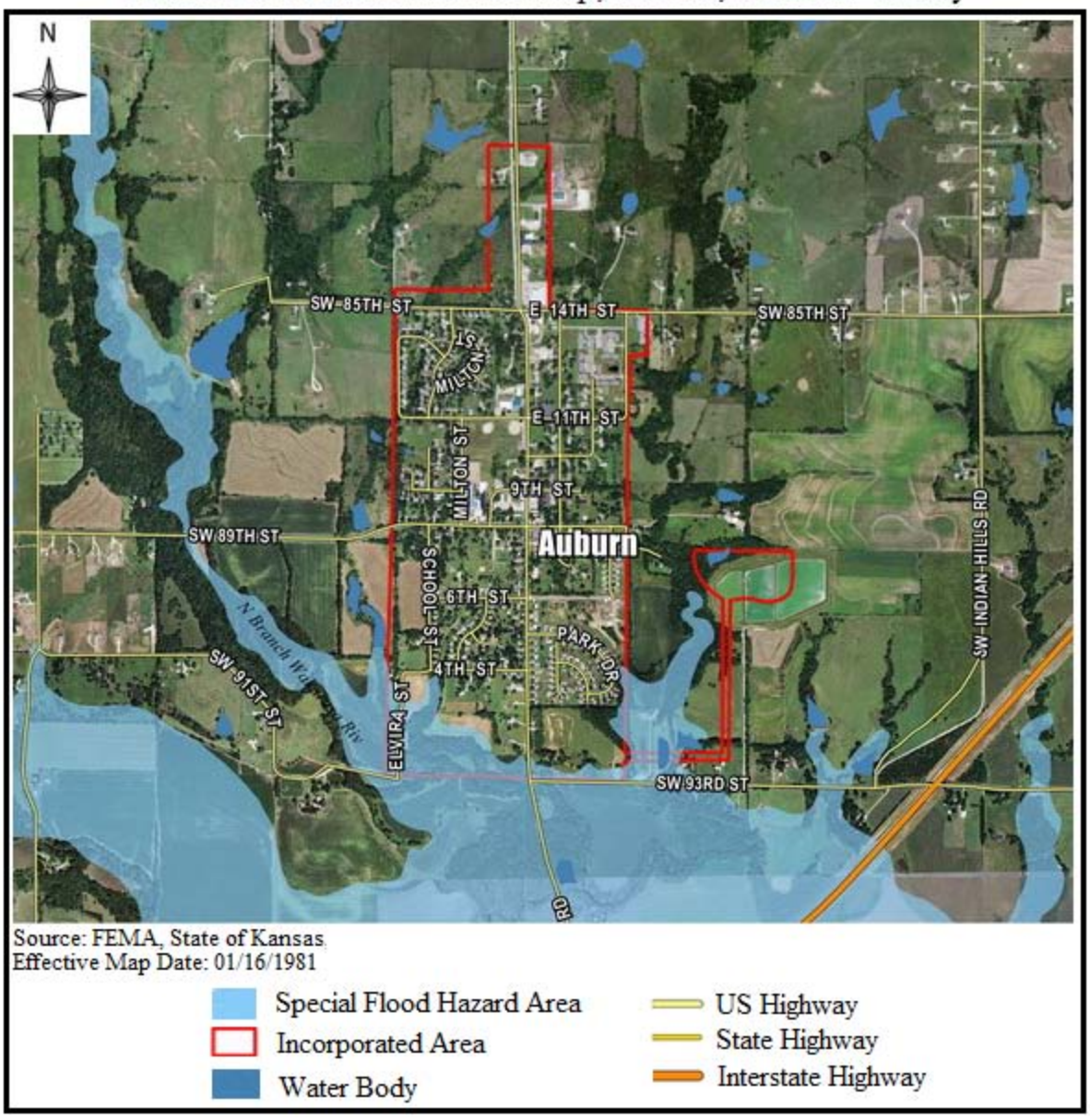
FEMA Digital Flood Insurance Rate Map, Spring Hill, Miami County



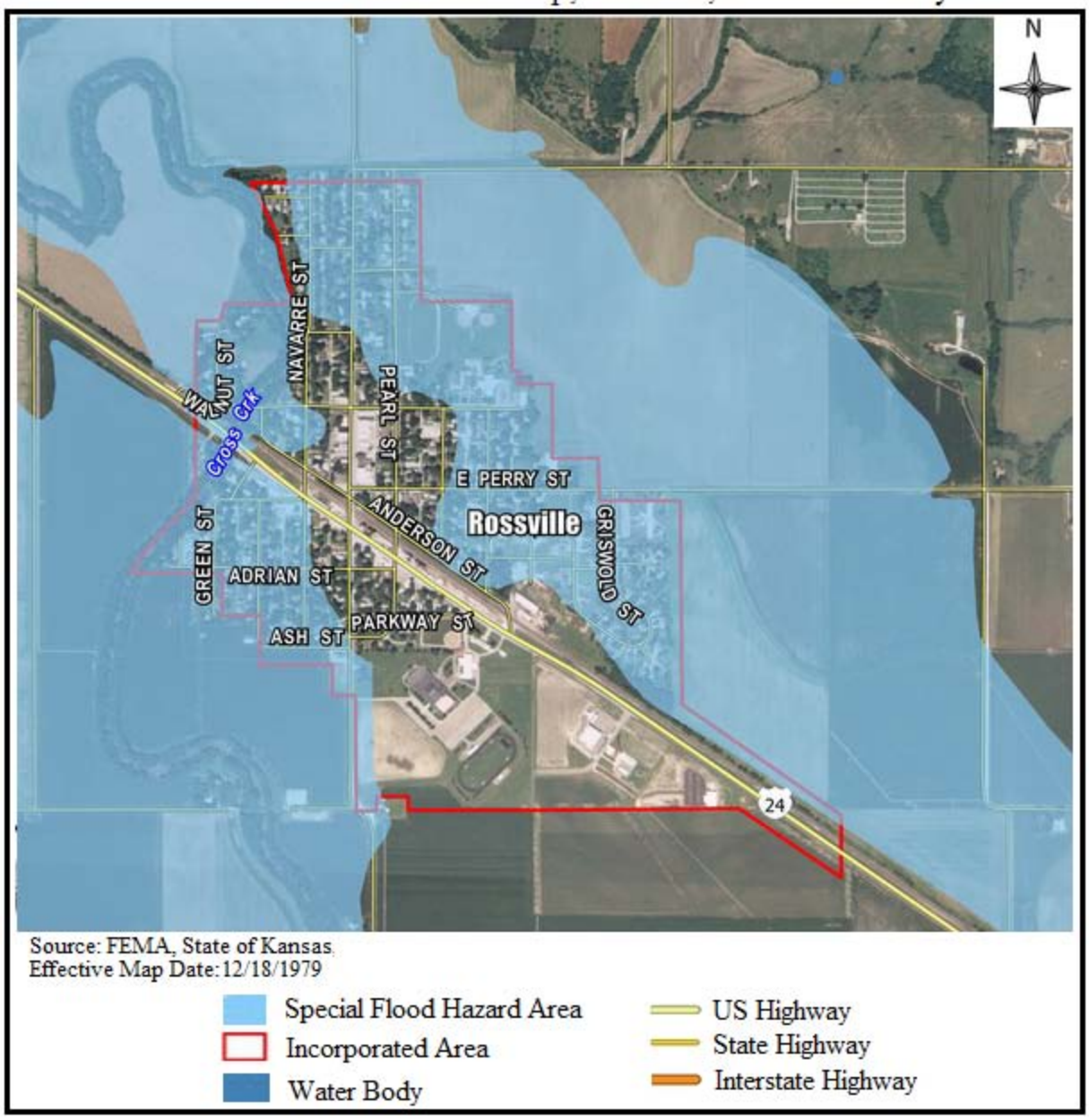

Auburn
Wakarusa
Osage
Eskridge
Carbondale
Scranton
Overbrook
Burlingame
Franklin
Vassar
Osage City
Allen
Admire
Lyndon
Pomona
Ottawa
Quenemo
Reading
Melvern
Williamsburg
Princeton
Lebo
Waverly
Flood Plain
Osage County, KS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
Cities (Census 2010)
Flood Zone
0.2% Annual Chance Flood Hazard
1% Annual Chance Flood Hazard
N
0 2.5 5 10 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT
Date: 12/13/2013
Kansas
Adjutant General
Division of Emergency Management


Delia
Ozawkie
Shawnee
Meriden
St. Marys
Rossville
Silver Lake
Willard
Maple Hill
Grantville
Perry
Douglas
Lecompton
Topeka
Auburn
Wakarusa
Osage
Eskridge
Flood Plain
Shawnee County, KS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
Cities (Census 2010)
Flood Zone
0.2% Annual Chance Flood Hazard
1% Annual Chance Flood Hazard
N
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT
Date: 12/13/2013
Kansas
Adjutant General
Division of Emergency Management

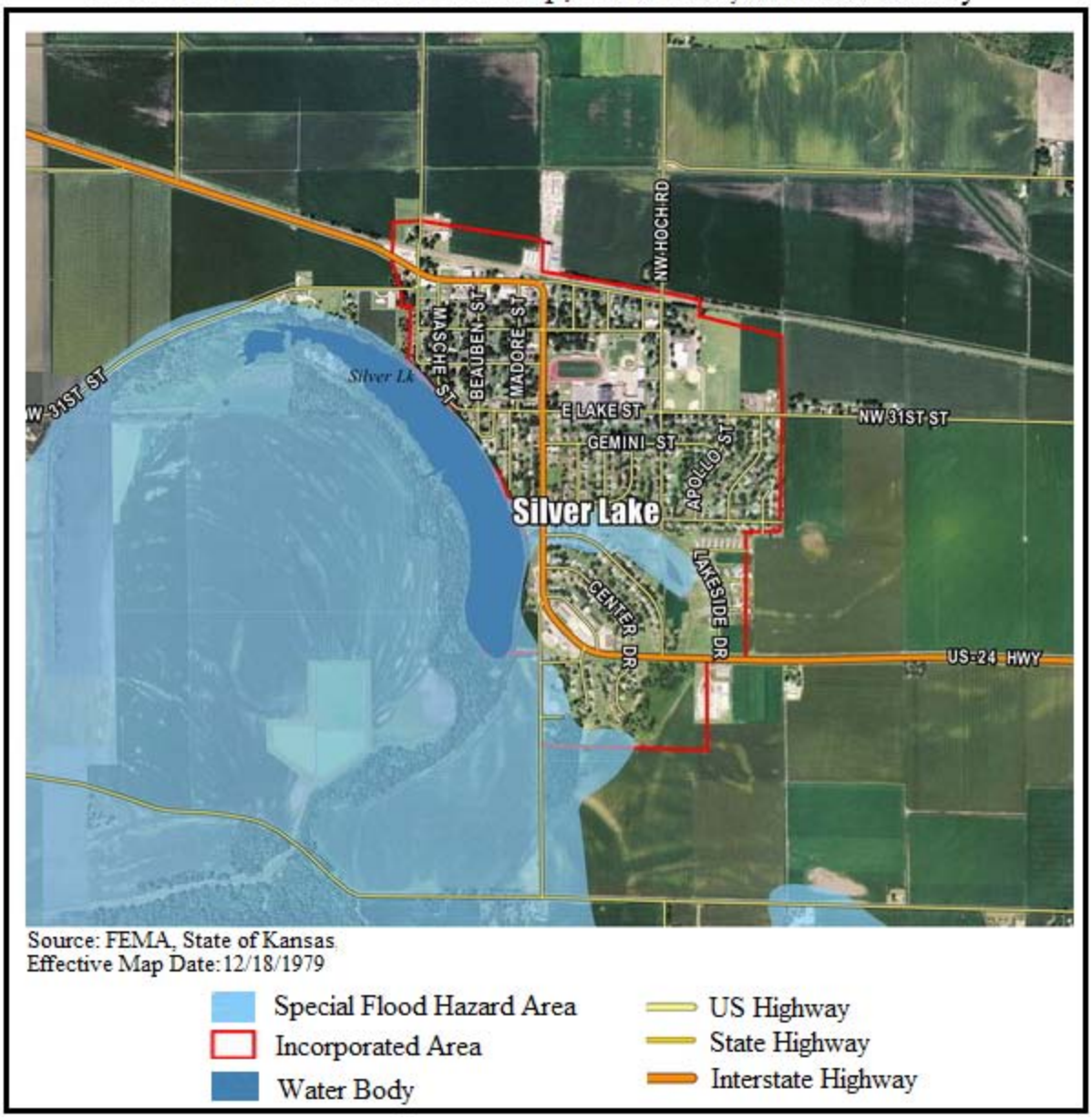
FEMA Flood Insurance Rate Map, Auburn, Shawnee County



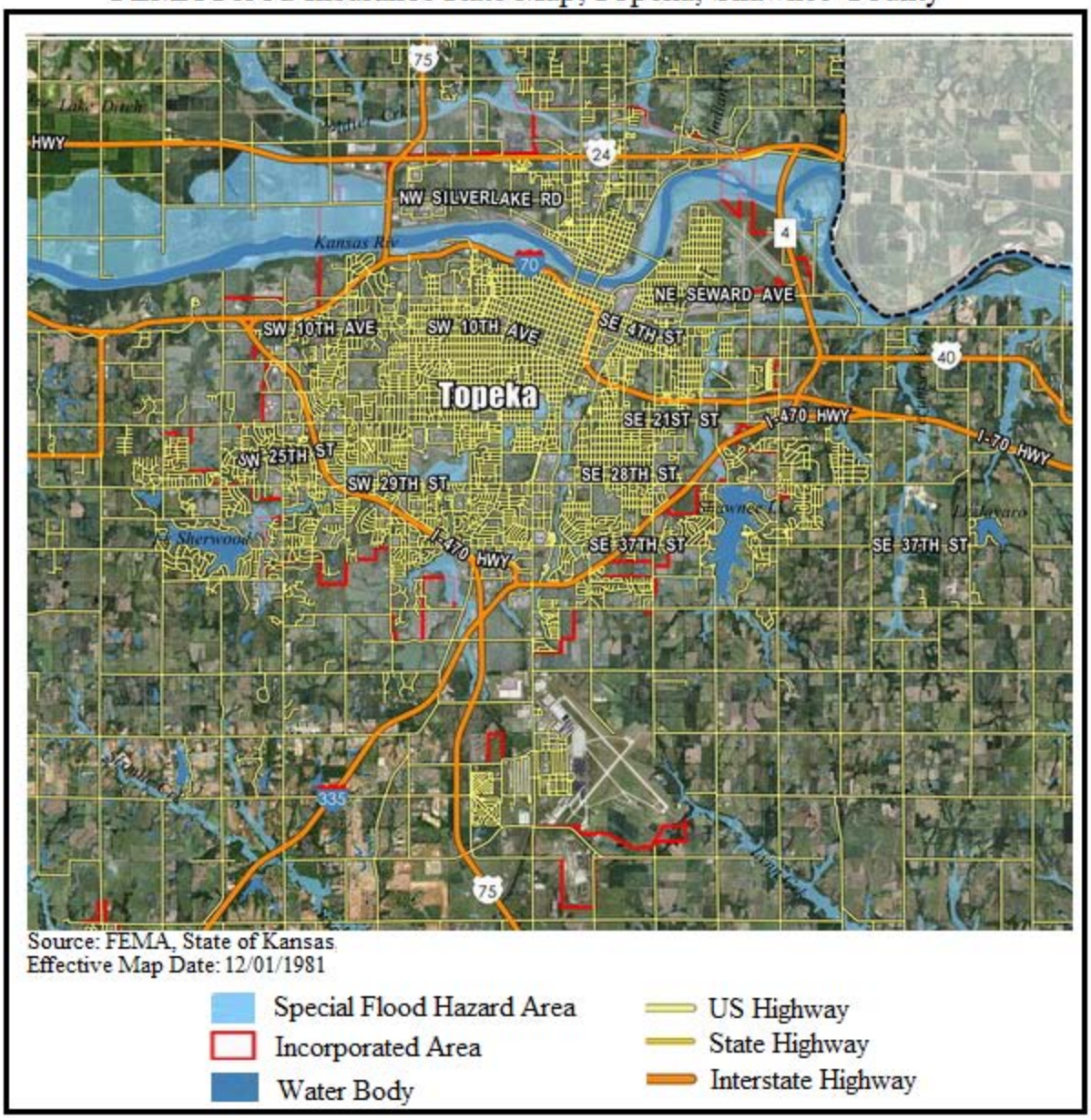
FEMA Flood Insurance Rate Map, Rossville, Shawnee County



FEMA Flood Insurance Rate Map, Silver Lake, Shawnee County



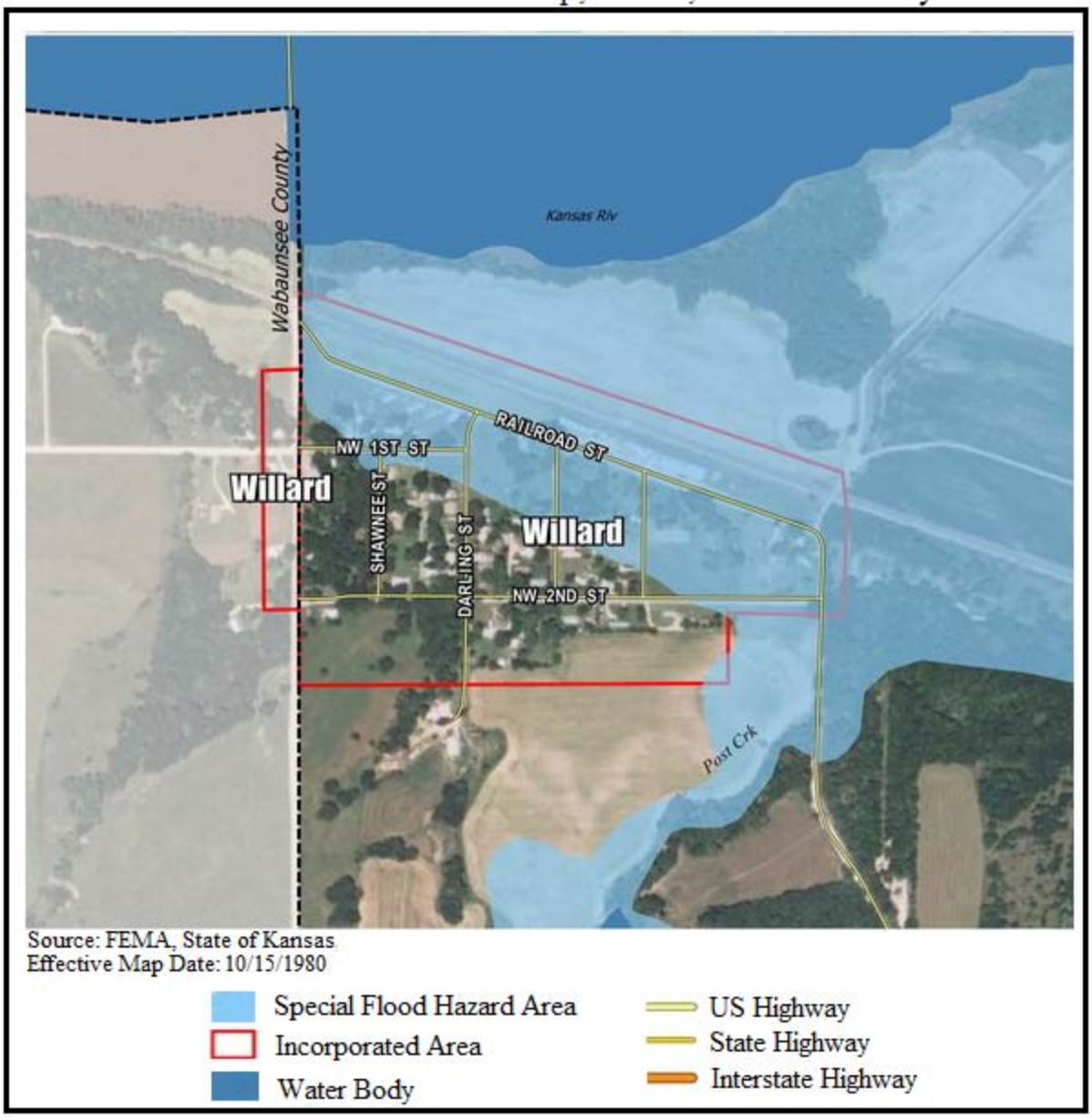
FEMA Flood Insurance Rate Map, Topeka, Shawnee County



Source: FEMA, State of Kansas
Effective Map Date: 12/01/1981

Special Flood Hazard Area
Incorporated Area
Water Body
US Highway
State Highway
Interstate Highway

FEMA Flood Insurance Rate Map, Willard, Shawnee County



Previous Occurrences and Extent

In the past ten years, eight Presidential Disaster Declarations for major floods have been declared for east-central Kansas. Details about some of these events can be found on the following pages. Please note that some of the Presidential Disaster Declarations included flooding (primarily flash flooding) as a secondary cause of damages

Kansas Presidential Declarations Involving Flooding

Declaration Number	Declaration Date*	Disaster Description	Regional Counties Involved	Disaster Cost
4010	07/29/2011 (5/19-6/4/2011)	Severe Storms, Straight-Line Winds, Tornados and **Flooding**	Osage	$8,259,620
1932	08/10/2010 (6/7-7/21/2010)	Severe Storms, **Flooding** and Tornados	Franklin, Miami and Osage	$9,279,257
1860	09/30/2009 (7/8-7/14/2009)	**Flooding** and Severe Storms	Anderson, Franklin and Linn	$3,347,662
1849	06/25/2009 (4/25-5/16/2009)	Severe Storms, **Flooding**, Straight-Line Winds and Tornados	Anderson, Coffey and Linn	$15,013,488
1808	10/31/2008	Severe Storms, **Flooding** and Tornados	Anderson	$4,167,044
1776	07/09/2008	Severe Storms, **Flooding** and Tornados	Franklin and Linn	$70,629,544
1711	7/2/2007 (6/26-30/2007)	**Flooding** and Severe Storms	Anderson, Coffey, Franklin, Linn, Miami and Osage	$40,238,600
1699	5/6/2007 (5/4/2007)	Severe Storms, **Flooding** and Tornados	Osage and Shawnee	$117,565,269
1579	2/8/2005 (1/4-6/2005)	Severe Winter Storm, Heavy Rains and **Flooding**	Anderson, Coffey, Franklin, Osage and Shawnee	$106,873,672
1535	8/3/2004 (6/12-7/25/2004)	Severe Storms, **Flooding** and Tornados	Shawnee	$12,845,892
1462	5/6/2003 (5/4-30/2003)	Severe Storms, **Flooding** and Tornados	Anderson, Miami and Osage	$988,056

Kansas Presidential Declarations Involving Flooding, Continued

Declaration Number	Declaration Date*	Disaster Description	Regional Counties Involved	Disaster Cost
1258	11/5/1998 (10/30-11/15/1998)	**Flooding** and Severe Storms	Coffey and Franklin	$16,688,650
1254	10/14/1998 (10/1-10/8/1998)	Severe Storms, **Flooding** and Tornados	Franklin and Linn	$9,770,769
1000	7/22/1993 (6/28-10/5/1993)	**Flooding** and Severe Storms	Osage and Shawnee	$99,790,368
663	6/28/1982	**Flooding** and Severe Storms	Shawnee	$804,048
539	9/20/1977	**Flooding** and Severe Storms	Shawnee	$4,041,566
403	9/28/1973	Severe Storms, **Flooding** and Tornados	Coffey, Franklin, Linn, Miami, Osage and Shawnee	$4,296,913
378	5/2/1973	**Flooding** and Severe Storms	Coffey, Franklin, Linn, Miami, Osage and Shawnee	$1,954,624
267	7/15/1969	Severe Storms, **Flooding** and Tornados	Anderson, Franklin, Linn, Miami and Osage	$733,524
229	7/18/1967	Severe Storms, **Flooding** and Tornados	Anderson, Coffey, Franklin, Linn, Miami and Osage	$847,439

Sources: FEMA and Kansas Division of Emergency Management
* Incident dates are in parentheses.
** Disaster costs include Public Assistance and Individual Assistance and may include additional ,unlisted counties

The following provide brief discussions of the most recent Presidential Disaster Declarations for the region:

FEMA-4010-DR: Severe Storms, Straight-Line Winds, Tornados and Flooding – July 29, 2011 - From May 10 to June 4, 2011 severe storms, straight-line winds, tornadoes, and flooding caused damages in 25 Kansas Counties. The primary impacts of this event were to public roads and bridges with an estimated $9,800,000 in damages.

FEMA 1932-DR: Severe Storms, Flooding and Tornados - August 10, 2010 - From June 7 to July 21, 2010, severe storms, flooding, and tornadoes caused damages in 41 Kansas Counties. The primary impacts of this event were to public roads and bridges with an estimated $11,200,000 in damages.

FEMA 1808-DR: Severe Storms, Flooding, and Tornadoes - October 31, 2008 (Sept. 11-17) - During the period of September 11-17, 2009, severe storms accompanied by tornados, lightning and torrential rains resulted in flooding and flash flooding across south central and eastern Kansas. Rainfall amounts were generally around 5 inches, Interstate 35 near Wellington was closed. In Anderson County, nearly 30 percent of all roads in the county were closed because of flood waters.

FEMA 1776-DR: Severe Storms, Flooding, and Tornados - July 9, 2008 - Beginning May 22, 2008 and continuing through June 16, 2008, severe storms across Kansas produced large hail, lightning, high winds, tornados and torrential rains. The severe weather produced widespread flooding. Several high water rescues were reported as local law and fire officials had to rescue individuals from on top of their vehicles and in one instance clinging to a tree. Street flooding was reported throughout the impacted areas.

FEMA-1711-DR: Severe Storms and Flooding - July 2, 2007 (June 26–30) - Beginning June 26 and continuing through June 30, 2007, strong storms across south central and southeast Kansas produced torrential rainfall and subsequent flooding/flash flooding. Some counties, which were still recovering from flooding in mid-May, received over a foot of rain. In Miami County, the Kansas National Guard was sent to help with a mandatory evacuation of Osawatomie, one of the hardest hit communities in eastern Kansas. The town evacuated 40% of its 4,600 residents after Pottawatomie Creek and the Marais des Cygnes River rose out of their banks.

FEMA 1254-DR: Severe Storms, Flooding and Tornados - October 1-8, 1998 - From October 1-8, extensive thunderstorms with strong wind gusts, heavy rains, hail, tornadoes, and flooding impacted one county in southwestern Kansas and several counties along the eastern edge of the state. Many low lying roads were blocked by flash flooding. The storms damaged over 500 residential structures and impacted numerous businesses. There were two fatalities.

FEMA-1000-DR: Severe Storms and Flooding - July 22, 1993: About 40 inches of rain fell during the first seven months of the year in northeast Kansas. Runoff resulted in further flooding throughout the lower Missouri River basin in central and east Kansas. One of the most devastating floods in U.S. history (a once in 100-500-year event), this event put millions of acres of farmland under water for weeks, damaged roads, and made rivers un-navigable. Waters overtopped or destroyed numerous levees and eroded valuable topsoil. Fifty-six Kansas counties, (more than half the counties in the state) were included in the federal disaster declaration. The flood caused two deaths in Kansas. A high percentage of crop acres in the Kansas City District floodplains suffered losses because of the overtopping of 9 of 15 units in the federally-constructed Missouri River Levee System and virtually all the nonfederal farm levees in the district. More than 1,400,000 crop acres were classified as failed, which resulted in $359,000,000 in damage. Damage to property was estimated at $15,000,000,000 to $20,000,000,000 across all nine states. The total cost of repairing federal levees was estimated at $41,900,000 and nonfederal levees at $300,000,000.

Further descriptions and other notable flooding events are detailed below

May 2006: Three inches of rain fell in west central Anderson County on May 21. Streams rose out of their banks and water flowed over rural roads. Debris blocked storm drains in Topeka on May 29. Portions of I-70 in west Topeka were closed because of water on the roadway. On May 30 and 31, flash flooding occurred in Lyon, Osage, Anderson, Coffey, Ottawa, and Republic Counties. Hardest hit was the city of Emporia, where widespread street flooding affected the city. There were water rescues of stranded motorists, and many homes and businesses were flooded.

June 3-15, 2005: Linn County was designated as a primary disaster area by the U.S. Department of Agriculture because of losses caused by excessive rain, flash flooding, and flooding. Twenty-nine contiguous counties were also eligible for assistance.

April 2002: As a result of severe storms, tornados and flooding, the Small Business Administration declared a disaster for businesses in Linn County.

The following table presents NCDC identified flood events and the resulting damage totals in the region from the period 2001 - 2013.

NCDC Flood Events, 1996 - 2013

County	Number of Flash Flood Events	Number of Flood Events	Property Damages	Crop Damage	Deaths
Anderson	68	42	$16,424,000	$85,000	0
Coffey	59	37	$15,501,000	$90,000	0
Franklin	73	43	$18,575,000	$83,000	0
Linn	58	58	$20,346,000	$1,807,000	0
Miami	60	50	$29,096,000	$1,057,000	0
Osage	71	40	$17,008,000	$83,000	0
Shawnee	42	25	$13,096,000	$57,000	0
Regional Total	431	295	$130,046,000	$3,262,000	0

Source: NCDC Storm Events Database

Local Events

July 27, 2013: Linn County: Flooding caused $100,000 in damages to county roads. State and federal disaster relief was received. Funds not received yet as Presidential declaration just approved.

June 18, 2013: Overbrook and Michigan Valley area, Osage County: Flash flooding and high winds damaged roads, crops and power lines.

June, 2010 : Osage County: Severe flooding, tornados and high winds damaged trees, power lines and buildings. Federal aid was received as part of DR-1932.

May 15, 2009: Osage County: A flood caused moderate road and crop damage.

September 12, 2008: Miami County: An area of early morning thunderstorms, produced heavy rains across portions of east central Kansas. The heavy rains caused flash flooding in a few locations. High water was reported on 391 Street at Hedge Lane. There were no fatalities, injuries, crop or property damage reported for this event.

July 1, 2007: Miami County: The Marais des Cygnes River at Osawatomie experienced the second highest flood crest on record. The crest was at 49.19 feet on July 1st, which was 21.19 feet above flood stage. Numerous homes and businesses suffered total loss, or severe damage. Near record level flooding on the Marais des Cygnes continued from June and ended on July 8th. Numerous homes and businesses experienced damage or total loss in Osawatomie. Property damage was estimated at $16 million and crop damage was estimated at $1 million. There were no fatalities or injuries attributed to the event.

July 1, 2007: City of Ottawa, Franklin County: A flood of the Marais des Cygnes River, Rock Creek and Wilson Creek caused damages to infrastructure business and homes.

June/July, 2007: City of La Cygne, Linn County: A flood affected part of one city park, the sewer lagoon and discharge ponds. Flooding of some homes occurred. There were road closures that affected 5 of the 6 in/out roads to the City. Traffic could travel in/out only on the north route which is a gravel road maintained by Linn and Miami Counties. FEMA assistance was received.

June 18, 2007: Miami County: Thunderstorms with very heavy rains caused flash flooding in portions Miami county. One car was reported submerged due to rising water near 69 Highway and 359th Street.

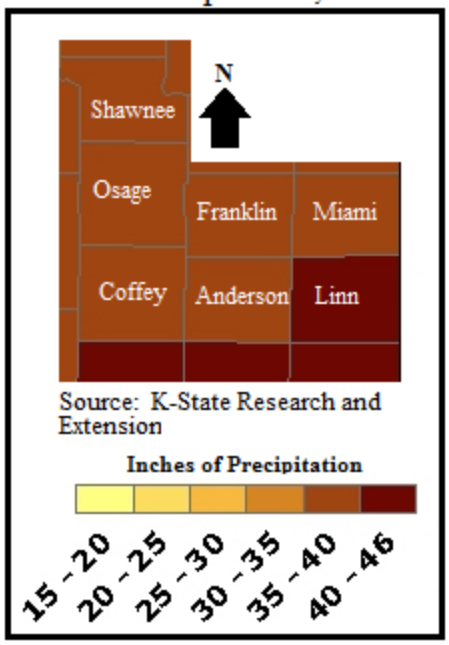
October 1, 2005: City of Rossville, Shawnee County: A flood closed businesses for 48 hours, damaged he city hall, and severely damaged two homes.

March 4, 2004: Miami County: The Marais des Cygnes River at Osawatomie crested at 36.70 feet, or 8.70 feet above flood stage. No damages, fatalities or injuries were attributed to the event.

Hazard Vulnerability and Impact

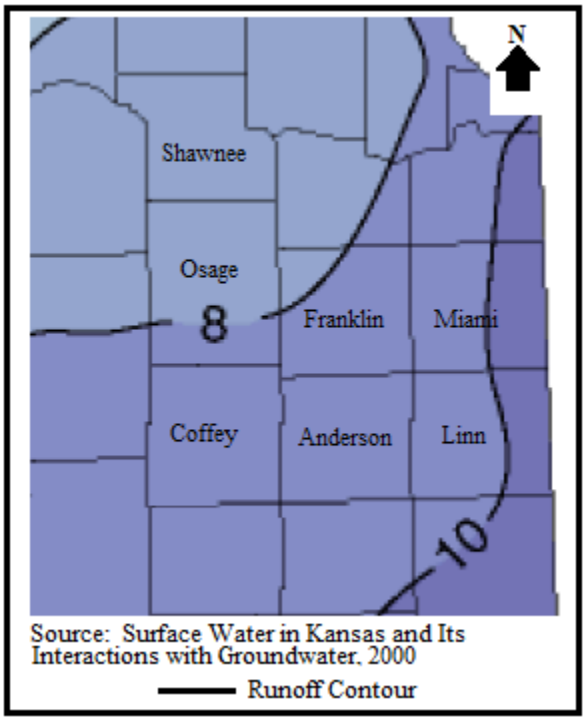
Flash flooding occurs in those locations of the in the planning area that are low-lying and/or do not have adequate drainage to carry away the amount of water that falls during intense rainfall events. The average annual precipitation varies significantly across the region. Precipitation in the central part of the state averages approximately 35 inches. The following map shows how the annual normal precipitation varies across the region.

Annual Normal Precipitation, 1971 - 2000



The following map shows the distribution of water runoff in southeast Kansas. This data indicates the approximate amount of water that does not infiltrate the ground and is potentially carried to streams and rivers. Although the climatically controlled rainfall variation is significant, average annual runoff across the state varies much more than the precipitation. The average runoff ranges from approximately 8 to 10 inches in the region. Both precipitation and runoff can impact flash flooding.

Distribution of Water Runoff In East-Central Kansas



The region acquired data from the USDA's Risk Management Agency to provide crop loss data based on crop insurance payments. Data was requested for the 10-year period from 2002 to 2011 for the State of Kansas. During this period, $321,995,951 in crop insurance payments was made to Kansas farmers as a result of flood, excess moisture/precipitation/rain, and hurricane/tropical depression. This translates to $321,995,951 annually. The most damaging year during this time-frame was 2007 which coincides with Presidential Declarations 1699 and 1711 for major flooding in east-central Kansas. The following table provides the crop insurance payments by year for this ten-year period. Please note that this data only applies to insured crops and for the entire State. According to the *2011 Kansas Crop Insurance Profile Report* issued by the USDA Risk Management Agency 82 percent of Kansas' row crops were insured in 2011.

USDA Risk Management Agency Crop Insurance Payments Due to Flood Excess Moisture/Precipitation/Rain, and Hurricane/Tropical Depression

Year	Statewide Crop Insurance Paid
2011 Total	$16,554,331
2010 Total	$51,325,423
2009 Total	$69,363,919
2008 Total	$58,422,531
2007 Total	$86,141,405
2006 Total	$1,510,143
2005 Total	$15,082,104
2004 Total	$16,276,418
2003 Total	$4,944,342
2002 Total	$2,375,336
Statewide Total	**$321,995,951**

Source: USDA Risk Management Agency, 2012;

To determine vulnerability to flooding and the jurisdictions most threatened by flooding and most vulnerable to damage and losses, the region analyzed data from several sources including:

- NCDC Storm Events Database
- USDA Risk Management Agency Crop Loss Statistics
- HAZUS MH-2.1 100-year Food Scenario
- NFIP Flood Insurance Claims
- Repetitive Loss Properties/Severe Repetitive Loss Properties

The NCDC Storm Events Database was the primary source of data to complete the vulnerability analysis of flash flood in the State; while the HAZUS-MH 2.1 analysis was utilized to describe vulnerability to riverine flooding. Flash flooding is not considered to be a geographic hazard. Due to the large number of variables that occur in rainfall amounts and intensity, it is not possible to predict all specific locations that are vulnerable to flash flooding. However, it is known that certain low-lying areas with poor drainage are more vulnerable than areas higher in elevation with good drainage. Additionally, historical statistics of areas that have been prone to flash flooding in the past can be utilized to determine potential vulnerability to future events.

The following table provides total crop insurance payments and annualized crop insurance payments for flood damage for each county over the 10-year period from 2002 to 2011. The USDA does not differentiate damages from riverine flooding and flash flooding. As such, these losses include combined losses for both types of flooding. The crop exposure value from the 2007 Census of Agriculture is provided to provide the basis for an annualized ratio of insurance payments to total value. Please note that this data only applies to insured crops. According to the *2011 Kansas Crop Insurance Profile Report* issued by the USDA Risk Management Agency 82 percent of Kansas' row crops were insured in 2011. The crop exposure values have not been adjusted in the table below.

Flood-Related Crop Insurance Payments Analysis, 2002-2011

County	Crop Exposure Value (2007 Census of Agriculture)	Flood-Related Crop Insurance Payments 2002-2011	Annualized Crop Insurance Payments	Annualized Flood-Related Crop Insurance Payment Ratio
Anderson	$33,029,000	$5,622,495	$562,250	1.70%
Coffey	$25,497,000	$4,744,041	$474,404	1.86%
Franklin	$32,349,000	$5,325,613	$532,561	1.65%
Linn	$13,053,000	$5,119,649	$511,965	3.92%
Miami	$27,726,000	$4,307,798	$430,780	1.55%
Osage	$27,618,000	$3,879,506	$387,951	1.40%
Shawnee	$32,959,000	$1,362,345	$136,235	0.41%
Regional Total	$192,231,000	$30,361,447	$3,036,145	-

Source: USDA Risk Management Agency; 2007 USDA Census of Agriculture;

HAZUS-MH 2.1 One-Percent Annual Chance Food Scenario

According to the HAZUS-MH 2.1 one percent annual chance flood scenario results, there are 3,474 buildings and 16,671 people in the one percent annual chance floodplain. It is worth noting that the results for Shawnee County are markedly higher than all other counties within the region. The following table provides the HAZUS-MH 2.1 results for the number of vulnerable buildings and population vulnerable to displacement for each county in east-central Kansas.

Vulnerable Buildings and Population, HAZUS One Percent Annual Chance Flood Scenario

County	Vulnerable Buildings	Population Vulnerable to Displacement
Anderson	7	276
Coffey	23	315
Franklin	101	1,090
Linn	3	342
Miami	103	886
Osage	0	479
Shawnee	3,237	13,283
Regional Total	3,474	16,671

Source: HAZUS MH 2.1

NFIP Flood Insurance Claims Analysis

The region analyzed NFIP flood-loss data to determine areas of east-central Kansas with the greatest flood risk. East-central Kansas NFIP participation and flood loss statistics were obtained from FEMA's Policy and Claim Statistics for Flood Insurance (which provides losses from 1978 to the present). As of October 2012, 48 communities (including the counties) were NFIP participants, including four that do not have special flood hazard areas and seven that are only minimally flood-prone. The following table presents east-central Kansas NFIP communities.

East-Central Kansas NFIP Communities

Community	Initial Flood Hazard Boundary Map Identified	Initial Flood Insurance Rate Map Identified	Current Effective Map Date
Anderson County			
Anderson County	12/13/1977	01/01/06	01/01/06(L)
Garnett	02/08/74	08/01/87	08/04/88(M)
Greeley	11/22/1974	03/20/79	11/15/1984
Kincaid	11/22/1974	-	11/22/1974
Westphalia	12/20/1974	-	12/20/1974
Coffey County			
Coffey County	08/23/77	-	08/23/77
Burlington	12/21/1973	12/4/1979	09/20/96
Gridley	11/22/1974	12/2/2003	12/02/03(M)
Lebo	02/01/74	-	04/23/76
Leroy	12/28/1973	11/1/2011	11/01/11(L)
New Strawn	11/22/1974	-	(NSFHA)
Waverly	02/15/74	09/18/85	09/18/85(M)
Franklin County			
Franklin County	08/16/77	06/03/91	05/03/11
Lane	12/27/1974	09/01/08	05/03/11(M)
Ottawa	01/09/74	09/19/84	05/03/11
Pomona	02/08/74	05/03/11	(NSFHA)
Princeton	05/28/76	05/03/11	(NSFHA)
Rantoul	11/15/1974	09/01/90	05/03/11
Richmond	-	05/03/11	(NSFHA)
Wellsville	02/15/74	05/03/11	05/03/11
Williamsburg	-	05/03/11	05/03/11
Linn County			
Linn County	-	11/2/2007	11/2/2007
Blue Mound	01/17/75	11/2/2007	11/2/2007
La Cygne	03/15/74	11/2/2007	11/2/2007

East-Central Kansas NFIP Communities, Continued

Community	Initial Flood Hazard Boundary Map Identified	Initial Flood Insurance Rate Map Identified	Current Effective Map Date
Linn Valley	-	11/2/2007	11/2/2007
Mound City	03/01/74	11/2/2007	11/2/2007
Parker	02/07/75	11/2/2007	11/2/2007
Pleasanton	06/14/74	11/2/2007	11/2/2007
Prescott	04/23/76	11/2/2007	11/2/2007
Miami County			
Miami County	06/07/77	12/1/2006	08/19/08(M)
Fontana	12/20/1974	08/19/08	08/19/08
Louisburg	03/01/74	08/19/08	08/19/08
Osawatomie	01/23/74	09/19/84	08/19/08
Paola	12/14/1973	04/17/78	08/19/08
Osage County			
Osage County	08/09/77	02/03/10	02/03/10
Burlingame	12/24/1976	02/03/10	02/03/10
Carbondale	05/24/74	03/04/88	02/03/10
Lyndon	06/28/74	06/03/86	02/03/10(M)
Melvern	07/30/76	02/03/10	02/03/10
Osage City	02/28/75	02/03/10	02/03/10
Overbrook	08/15/75	02/03/10	02/03/10
Quenemo	12/20/1974	09/01/90	02/03/10
Scranton	09/19/75	02/03/10	02/03/10
Shawnee County			
Shawnee County	02/21/78	06/01/82	09/29/11
Auburn	10/25/1974	01/16/81	09/29/11
Rossville	12/28/1973	12/18/1979	09/29/11
Silver Lake	05/31/74	10/15/1980	09/29/11
Topeka	-	10/22/1971	09/29/11
Willard	08/16/74	10/15/1980	09/29/11

Notes: NSFHA: No Special Flood Hazard Area - All Zone C
(L): Original FIRM by letter - All Zone A, C and X
(M): No elevation determined - All Zone A, C and X

In addition, Shawnee County is a participant in the Community Rating System (CRS) program and is taking additional steps the minimum requirements of the NFIP.

There are likely other communities in east-central Kansas that have flood hazard areas but have not yet been mapped by FEMA to show where those hazard areas are.

Kansas flood-loss information was pulled from FEMA's "Policy and Loss Data by Community with County and State Data," which documents losses from 1978 through August 31, 2012. There are several limitations to this data, including:

- Only losses to participating NFIP communities are represented
- Communities joined the NFIP at various times since 1978
- The number of flood insurance policies in effect may not include all structures at risk to flooding
- Some of the historical loss areas have been mitigated with property buyouts

Some properties are under-insured. The flood insurance purchase requirement is for flood insurance in the amount of federally-backed mortgages, not the entire value of the structure. Additionally, contents coverage is not required.

The following table shows the details of NFIP policy and loss statistics for each county in south Kansas. Loss statistics include losses through March 31, 2014.

Kansas NFIP Policy and Loss Statistics, As of March 31, 2014

	Number of Policies in Force	Insurance in Force	Number of Closed Losses	Total Payments
Anderson County				
Anderson County	9	$455,700	3	$91,440.50
Garnett	-	-	0	$129,113.34
Coffey County				
Burlington	26	$2,487,400	0	$0
Gridley	3	$411,000	0	$0
LeRoy	1	$45,000	0	$0
New Strawn	-	-	1	$2,624.77
Waverly	4	$226,500	0	$0
Franklin County				
Franklin County	29	$4,429,600	8	$172,946.39
Lane	1	$26,000	0	$0
Ottawa	21	$7,686,100	2	$4,436.33
Rantoul	6	$593,000	1	$9,249.70
Linn County				
Linn County	15	$2,782,100	0	$0
La Cygne	1	$1,000,000	0	$0
Mound City	2	$54,000	0	$0
Pleasanton	2	$116,000	0	$0

Kansas NFIP Policy and Loss Statistics, As of March 31, 2014, Continued

	Number of Policies in Force	Insurance in Force	Number of Closed Losses	Total Payments
Miami County				
Miami County	49	$6,813,300	9	$238,414.22
Louisburg	1	$140,000	0	$0
Osawatomie	39	$6,230,300	4	$367,947.84
Paola	14	$2,518,700	1	$6,859.27
Osage County				
Osage County	17	$2,094,200	0	$0
Burlingame	17	$959,700	2	$50,311.90
Carbondale	1	$3,300	2	$3,234.60
Lyndon	1	$72,600	2	$47,759.22
Osage City	2	$385,00	0	$0
Quenemo	17	$637,300	3	$33,271.46
Scranton	3	$324,000	0	$0
Shawnee County				
Shawnee County	291	$68,408,300	48	$791,806.33
Auburn	1	$350,000	0	$0
Rossville	189	$23,161,100	93	$1,092,278.63
Silver Lake	25	$5,501,100	2	$14,784.14
Topeka	1,034	$189,187,000	58	$1,086,345.89
Willard	1	$128,200	2	$16,446.24

Source: FEMA, "Policy and Loss Data by Community with County and State Data"

Repetitive Loss Analysis

A high priority in east-central Kansas and nationwide is the reduction of losses to repetitive loss structures. These structures strain the National Flood Insurance Fund. The NFIP defines a repetitive loss property as "any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling 10-year period, since 1978. At least two of the claims must be more than 10 days apart."

East-central Kansas has made mitigation of repetitive loss properties a priority use of mitigation funds. Current information from the State of Kansas indicates the region has only one active Repetitive Loss property, detailed in the following table.

Repetitive Loss Properties

County	City	Mitigated	Insured	Total Paid
Shawnee	Topeka	No	Yes	$69,800

Severe Repetitive Loss Analysis

The Flood Insurance Reform Act of 2004 identified another category of repetitive loss, categorized as Severe Repetitive Loss (SRL). The definition of severe repetitive loss as applied to this program was established in section 1361A of the National Flood Insurance Act, as amended, 42 U.S.C. 4102a. An SRL property is defined as a residential property that is covered under an NFIP flood insurance policy and:

- That has at least four NFIP claim payments (including building and contents) over $5,000 each, and the cumulative amount of such claims payments exceeds $20,000; or
- For which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.

For both of the above, at least two of the referenced claims must have occurred within any ten-year period, and must be greater than ten days apart.

As of October 1, 2012, there are no validated insured residential properties in east-central Kansas that meet the qualifications of SRL and the requirements to be considered for possible mitigation activities under FEMA's SRL criteria.

History of Severe Repetitive Loss

In addition to the verified residential, insured properties above, the NFIP tracks other categories of properties, including unverified properties, commercial properties, previously mitigated properties, and currently uninsured properties that meet the loss criteria.

As of October 2012, there are no validated properties that have incurred flood-related damage for which four or more separate claims payments have been paid under flood insurance coverage with the amount of each claim payment exceeding $5,000 and with cumulative amounts of such claims payments exceeding $20,000; or for which at least two separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property.

Riverine Flooding

The results of the HAZUS-MH2.1 analysis were utilized to estimate potential losses for riverine flooding. The intent of this analysis was to enable the region to estimate where flood losses could occur and the degree of severity using a consistent methodology. The HAZUS model helps quantify risk along known flood-hazard corridors as well as lesser streams and rivers that have a drainage area of ten square miles or more.

The HAZUS-MH 2.1 analysis provides the number of buildings impacted, estimates of the building repair costs, as well as the associated loss of building contents and business inventory. Building damage can also cause additional losses to a community as a whole by restricting a building's ability to function properly. Income loss data accounts for losses such as business

interruption and rental income losses as well as the resources associated with damage repair and job and housing losses. These losses are calculated by HAZUS-MH 2.1 using a methodology based on the building damage estimates.

Among other factors, flood damage is related to the depth of flooding. HAZUS-MH 2.1 takes into account flood depth when modeling damage (based on FEMA's depth-damage functions). The HAZUS-MH 2.1 reports capture damage by occupancy class (in terms of square footage impacted) by damage percent classes. Occupancy classes in HAZUS-MH 2.1 include agriculture, commercial, education, government, industrial, religion, and residential. Damage percent classes are grouped by 10 percent increments 1-10 percent, 11-20 percent, etc., up to 50 percent. Buildings that sustain more than 50 percent damage are considered to be "substantially" damaged.

The displaced population is based on the inundation area. Individuals and households will be displaced from their homes even when the home has suffered little or no damage either because they were evacuated or there was no physical access to the property because of flooded roadways. Displaced people using shelters will most likely be individuals with lower incomes and those who do not have family or friends within the immediate area. HAZUS-MH 2.1 does not model flood casualties.

The following table provides the HAZUS-MH 2.1 results for vulnerable populations and the population estimated to seek short term shelter as well as the numbers of damaged and substantially damaged buildings for each east-central Kansas county.

HAZUS-MH 2.1 Flood Scenario Displaced Population and Number of Damaged Buildings

County	Population Vulnerable to Displacement (Number of People)	Short Term Shelter Needs (Number of People)	Vulnerable Buildings	Damaged Buildings	Substantially Damaged Buildings
Anderson	276	5	7	0	0
Coffey	315	17	23	4	3
Franklin	1,090	319	101	45	19
Linn	342	53	3	2	0
Miami	886	318	103	55	10
Osage	479	65	0	0	0
Shawnee	13,283	10,349	3,237	1,669	399
Regional Total	16,671	11,126	3,474	1,775	431

Source: HAZUS-MH 2.1

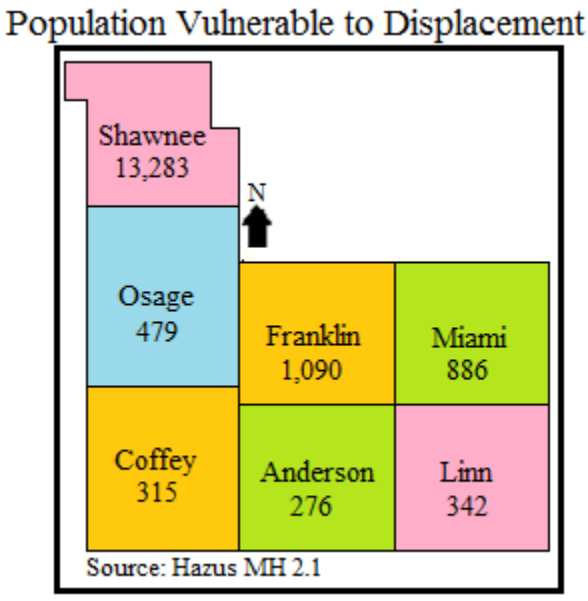
The following table provides total direct building loss and income loss for each east-central Kansas county.

HAZUS-MH 2.1 Flood Scenario Direct Building and Income Losses

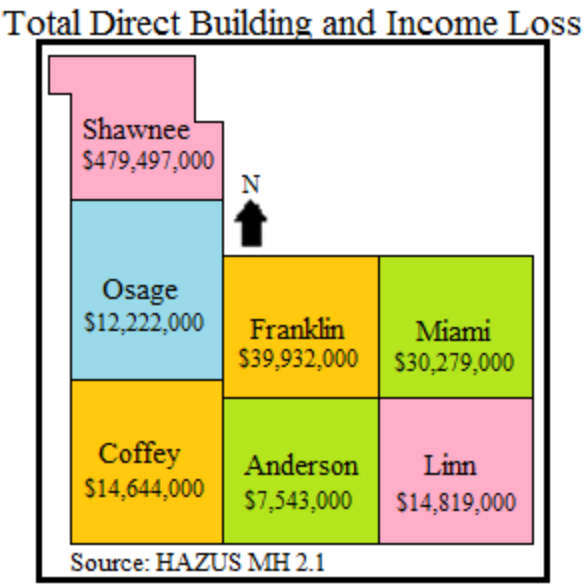
County	Structural Damage	Contents Damage	Inventory Loss	Total Direct Loss	Total Income Loss	Total Direct and Income Loss	Structure and Contents Loss Ratio
Anderson	$3,926,000	$3,441,000	$173,000	$7,540,000	$3,000	$7,543,000	0.40%
Coffey	$6,250,000	$7,909,000	$380,000	$14,539,000	$105,000	$14,644,000	0.71%
Franklin	$18,487,000	$20,542,000	$783,000	$39,812,000	$120,000	$39,932,000	0.77%
Linn	$7,361,000	$7,156,000	$269,000	$14,786,000	$33,000	$14,819,000	0.67%
Miami	$16,796,000	$12,989,000	$479,000	$30,264,000	$15,000	$30,279,000	0.38%
Osage	$6,079,000	$5,934,000	$192,000	$12,205,000	$17,000	$12,222,000	0.38%
Shawnee	$212,028,000	$255,669,000	$9,650,000	$477,347,000	$2,150,000	$479,497,000	1.30%
Regional Total	$270,927,000	$313,640,000	$11,926,000	$596,493,000	$2,443,000	$598,936,000	-

Source: HAZUS-MH 2.1

The following map depicts the potential population vulnerable to displacement



The following map illustrates the potential total direct building and income loss according to the HAZUS results for the region.

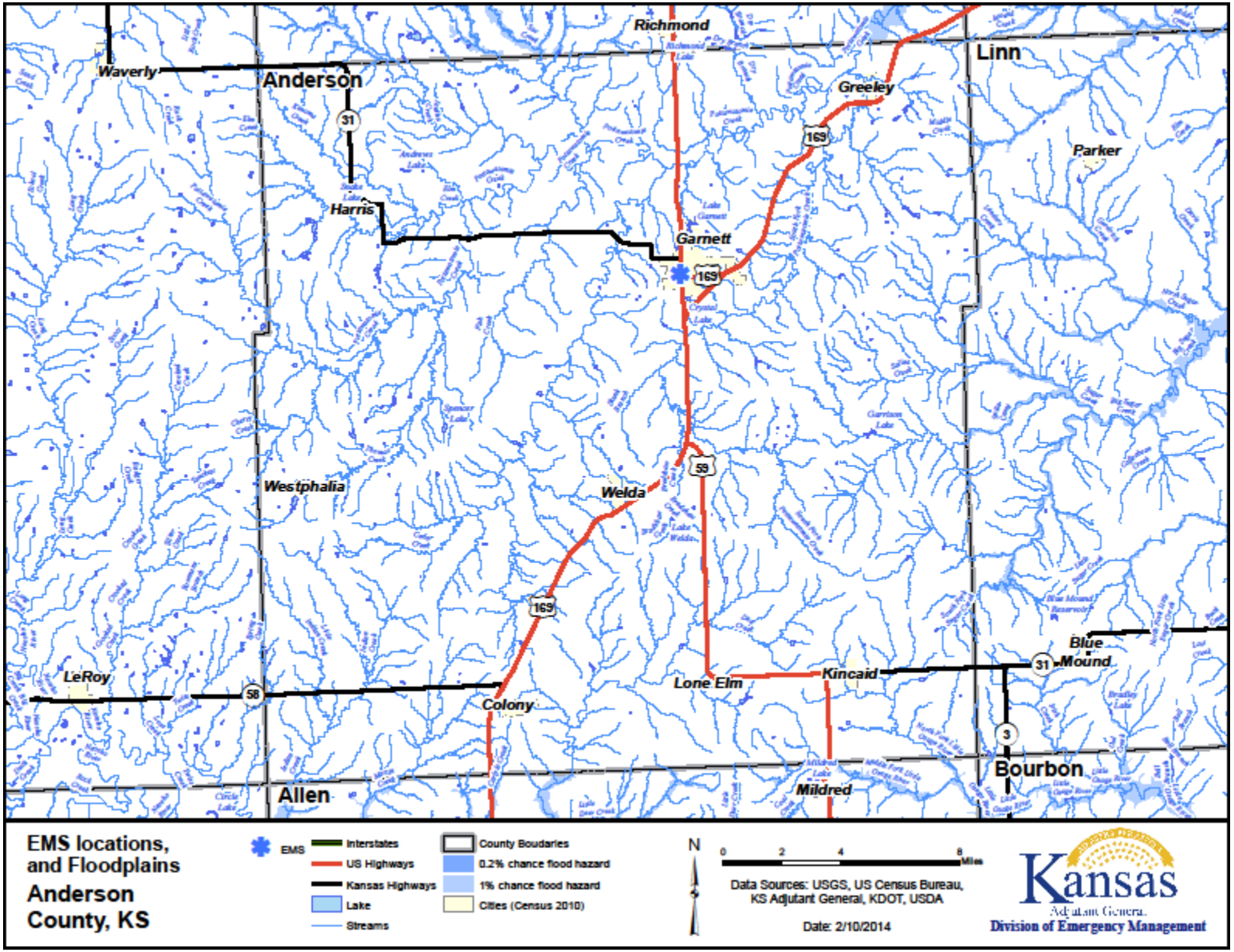


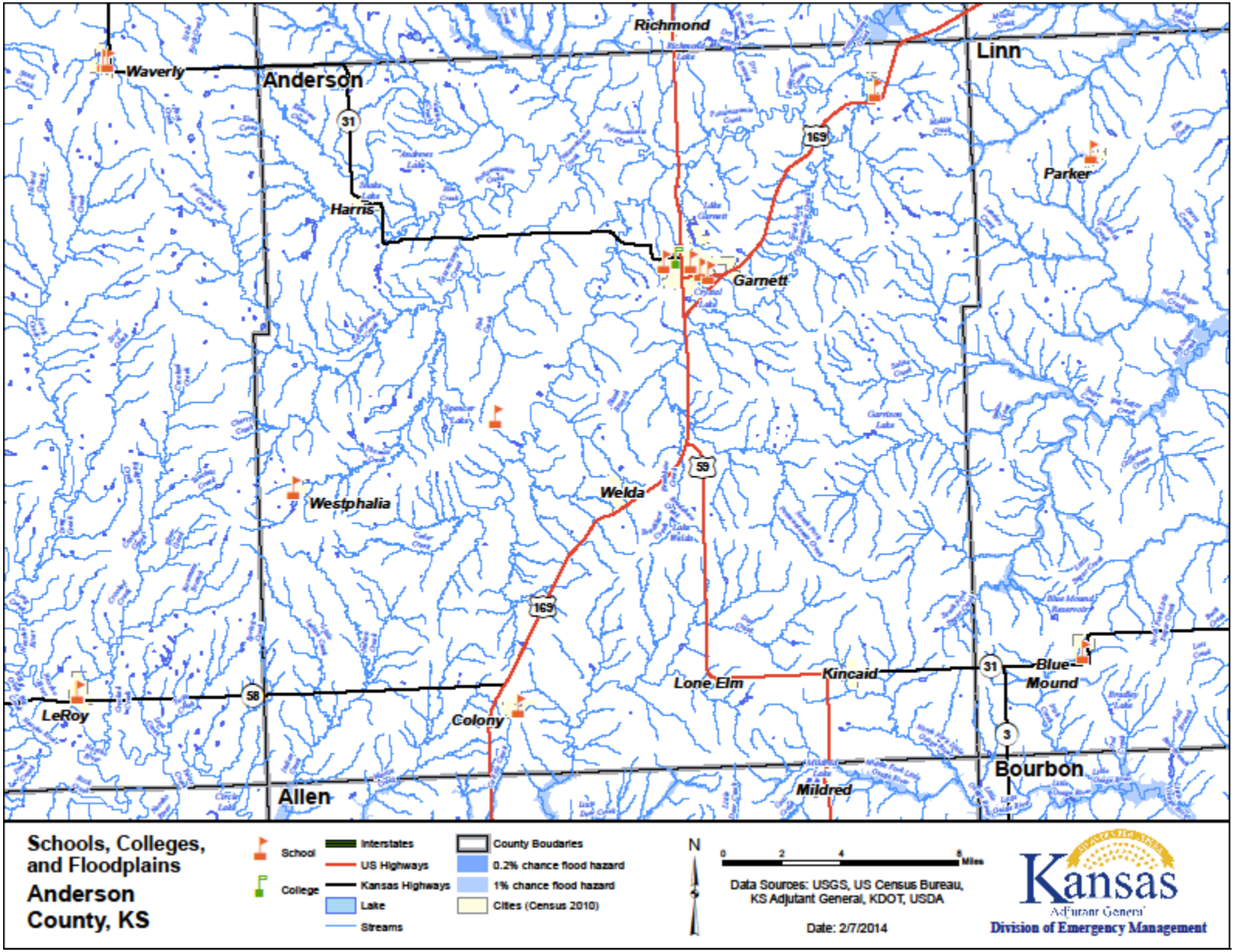
Critical Facilities in Flood Plains

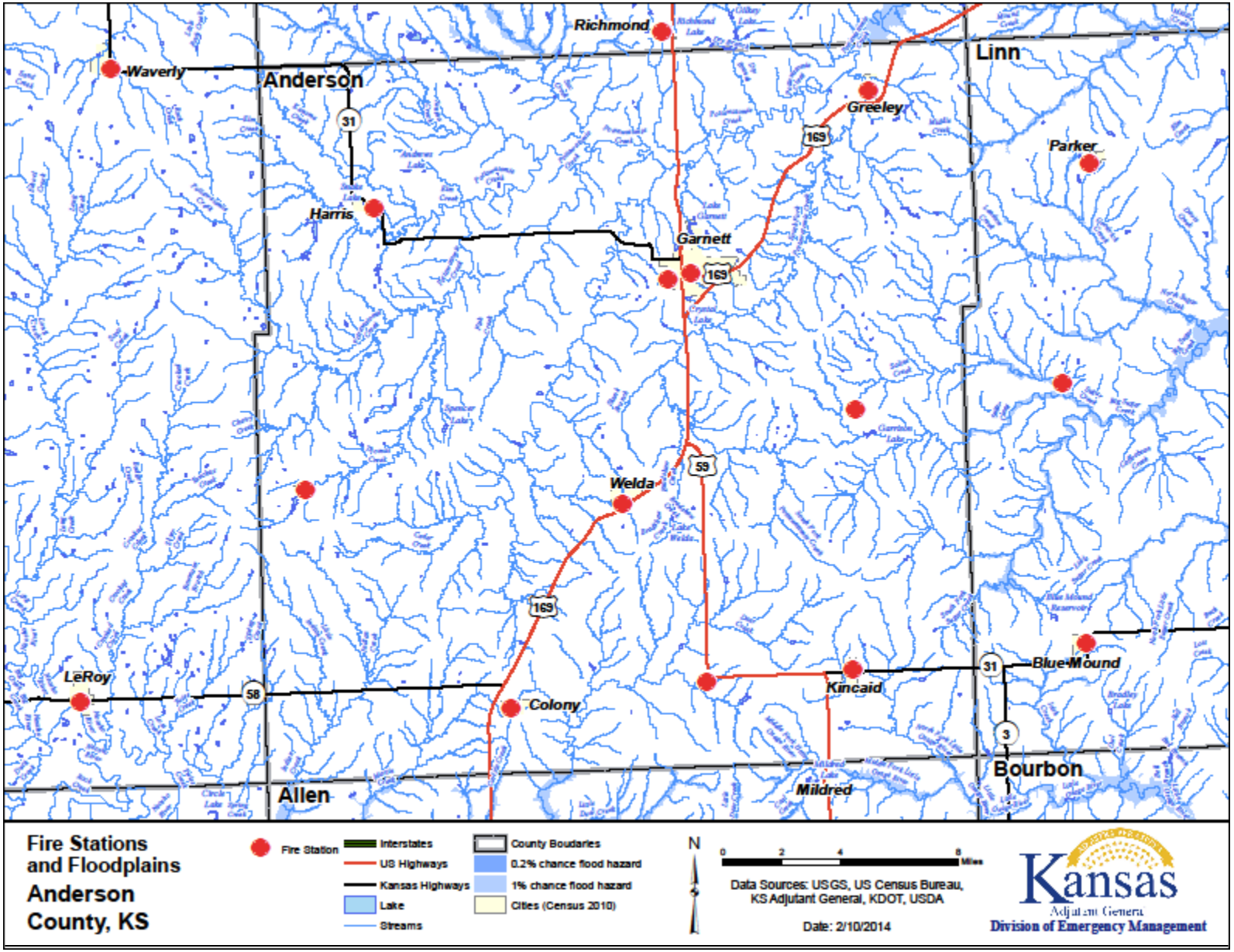
The following county maps show critical facilities located in flood plains. Identified critical facilities include:

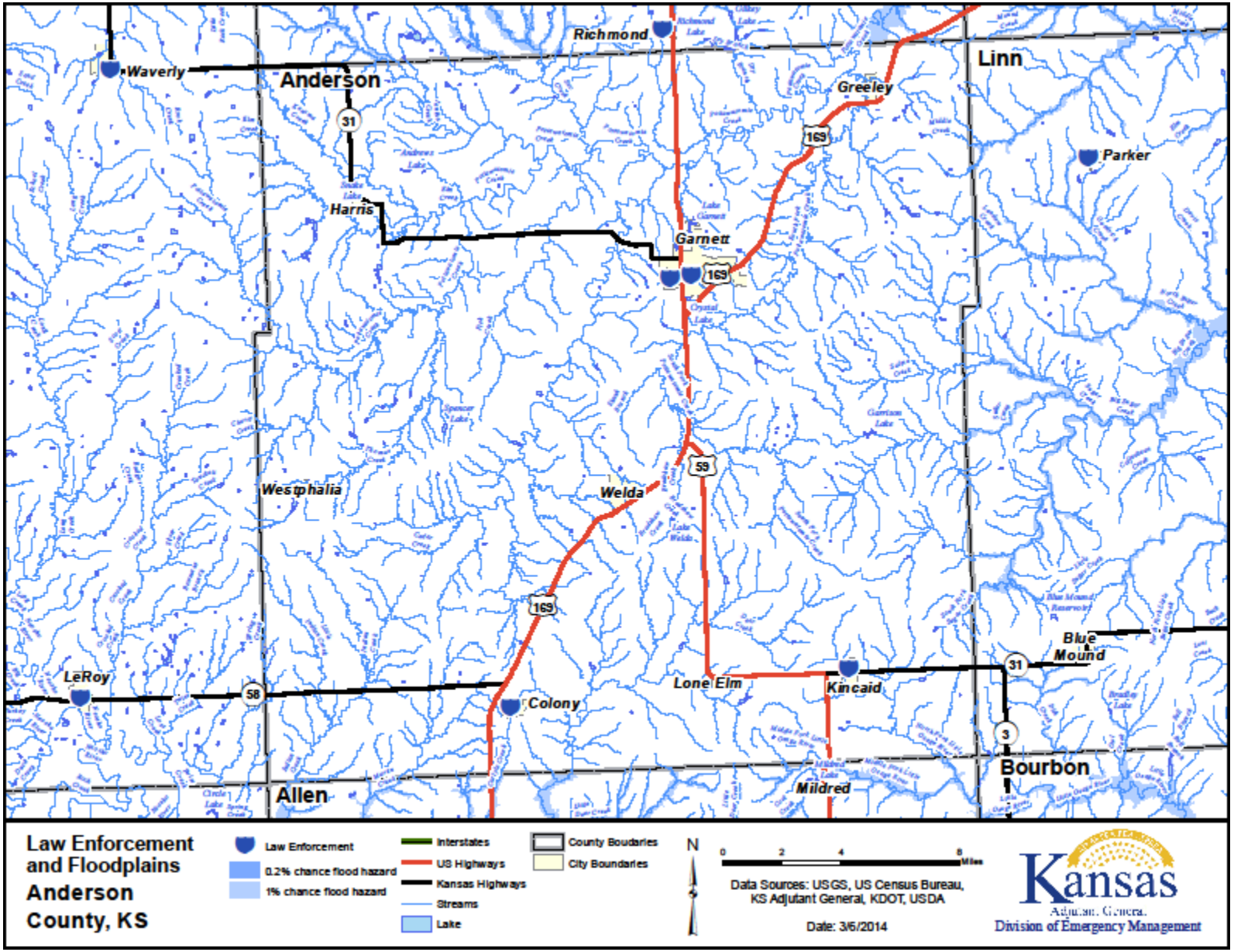
- Schools
- Police Stations
- Fire Stations
- Hospitals (if information made available)
- Elderly care facilities (if information made available)

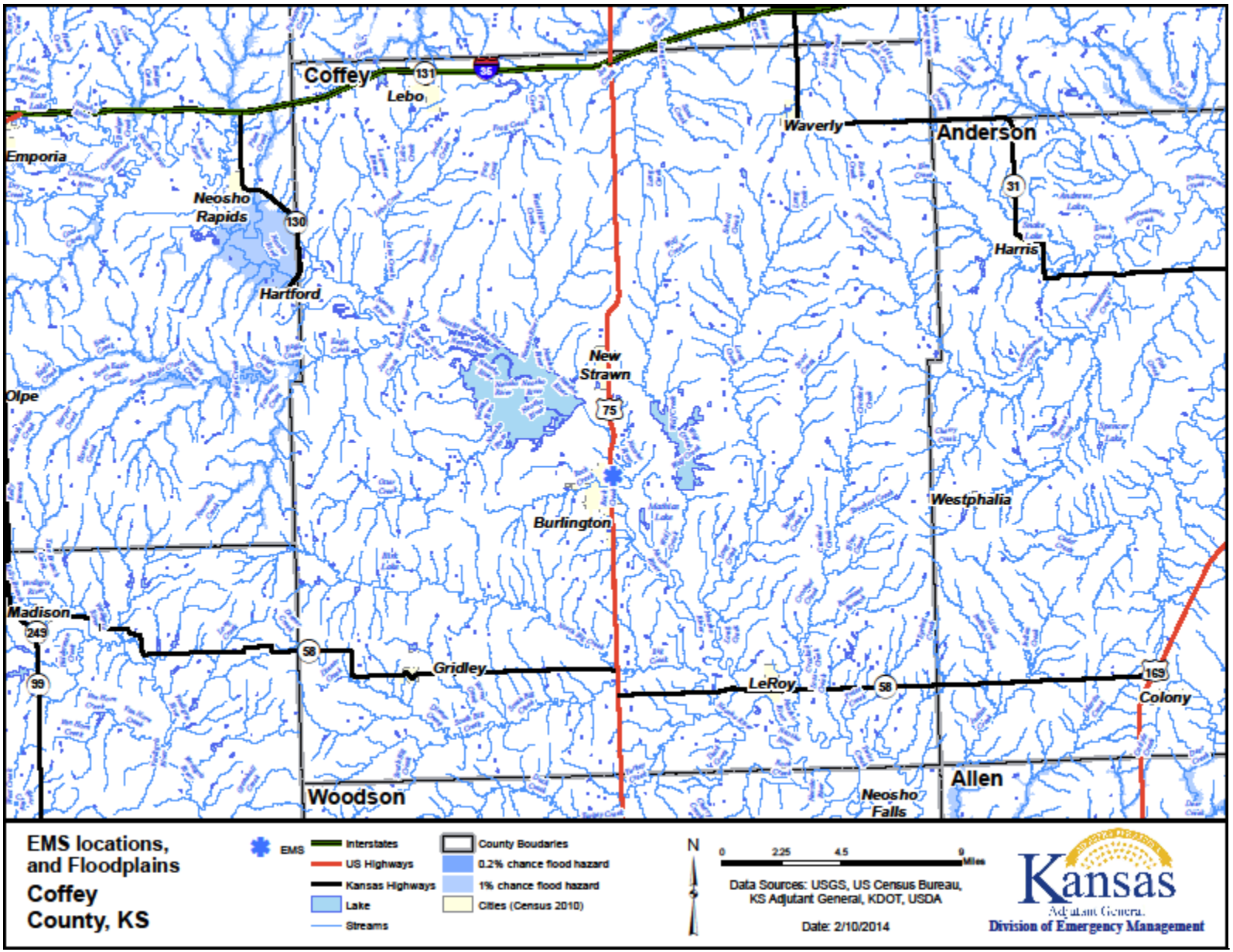
Please note that not all participating counties and/or jurisdictions had this data available.

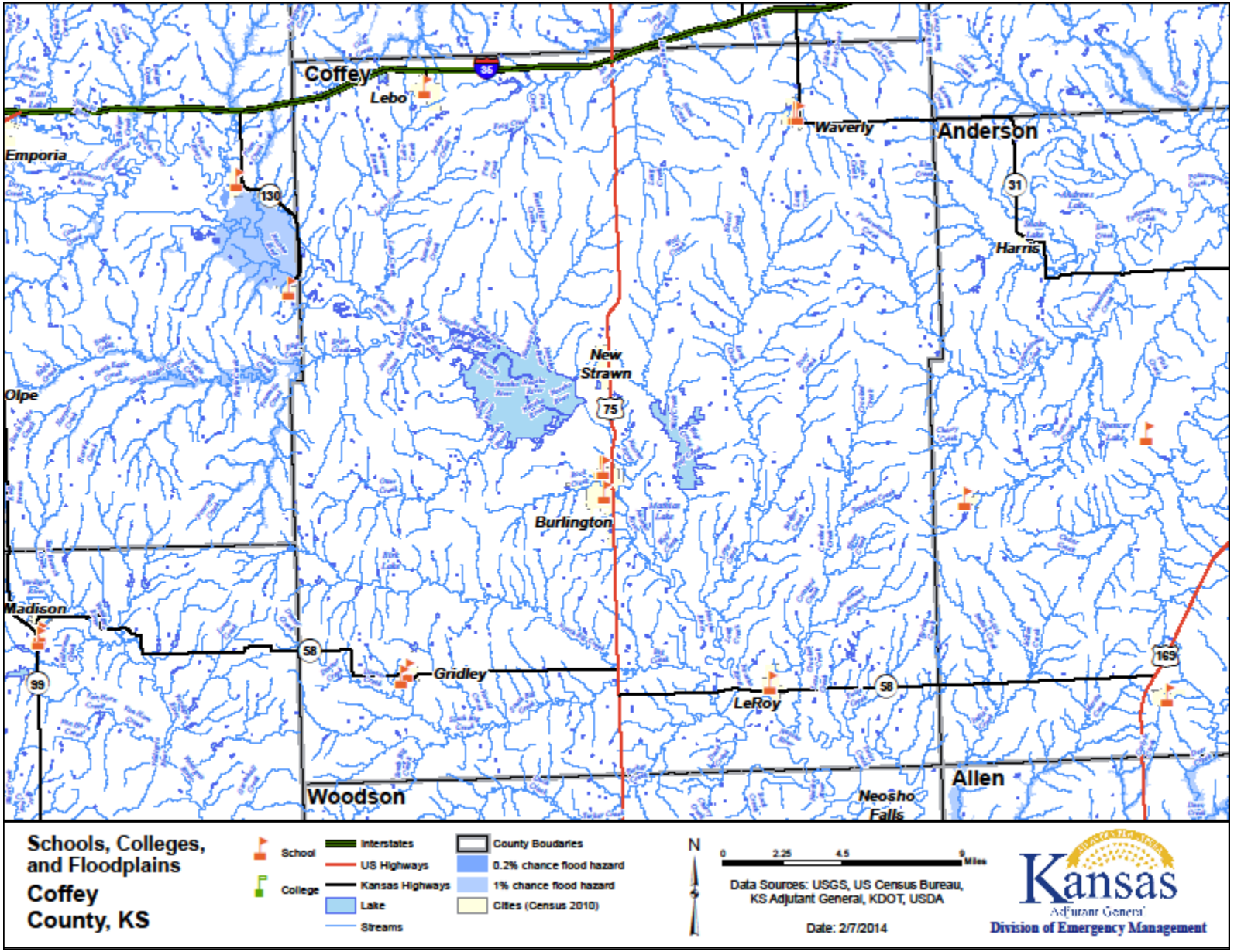

Richmond
Waverly
Anderson
Linn
Greeley
Parker
Harris
Garnett
Westphalia
Welda
LeRoy
Colony
Lone Elm
Kincaid
Blue Mound
Bourbon
Mildred
Allen
EMS locations, and Floodplains
Anderson County, KS
EMS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management

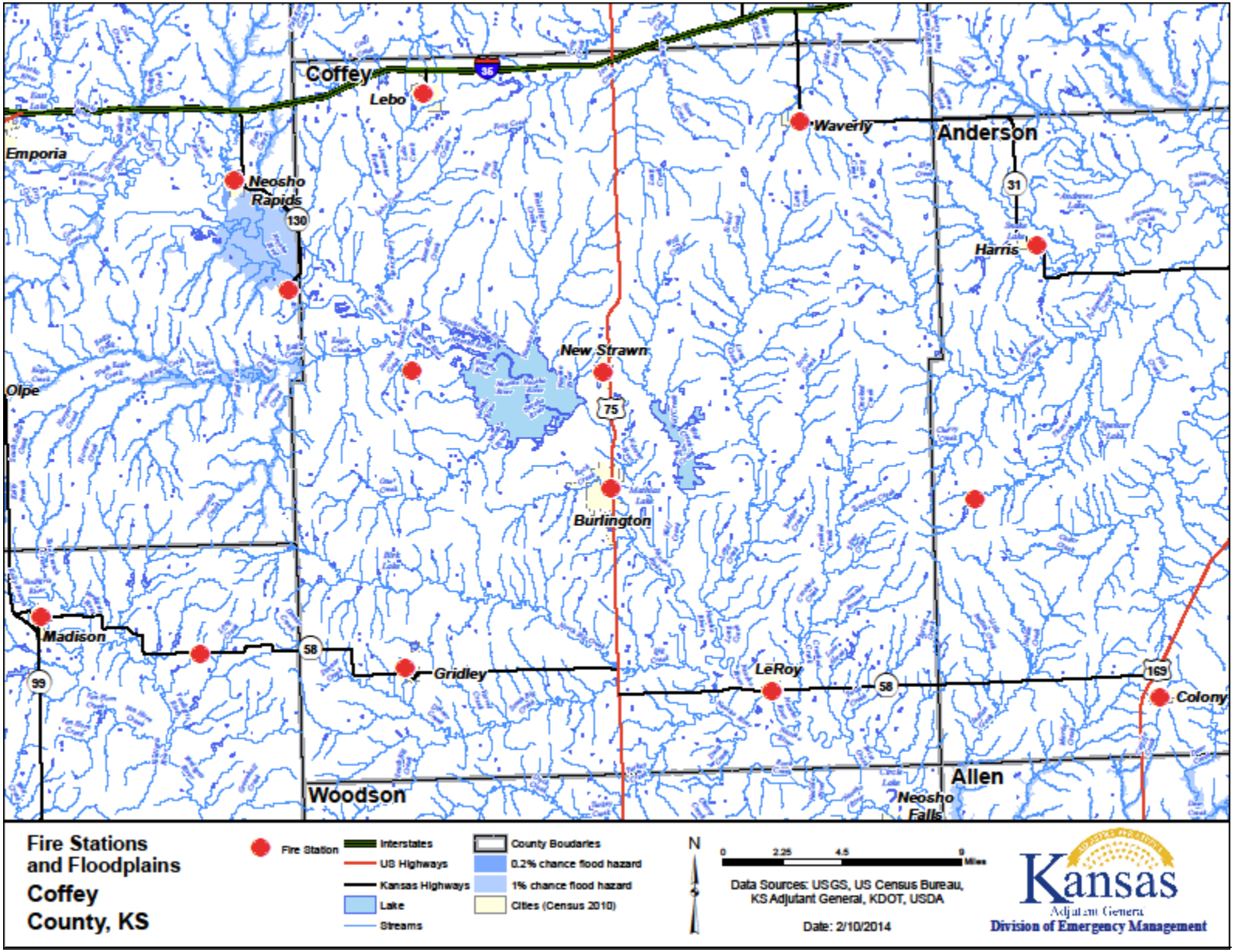

Richmond
Waverly
Anderson
Linn
Parker
Harris
Garnett
Westphalia
Welda
Lone Elm
Kincaid
Blue Mound
LeRoy
Colony
Mildred
Bourbon
Allen
31
169
59
58
3
Schools, Colleges, and Floodplains
Anderson County, KS
School
College
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/7/2014
Kansas
Adjutant General
Division of Emergency Management

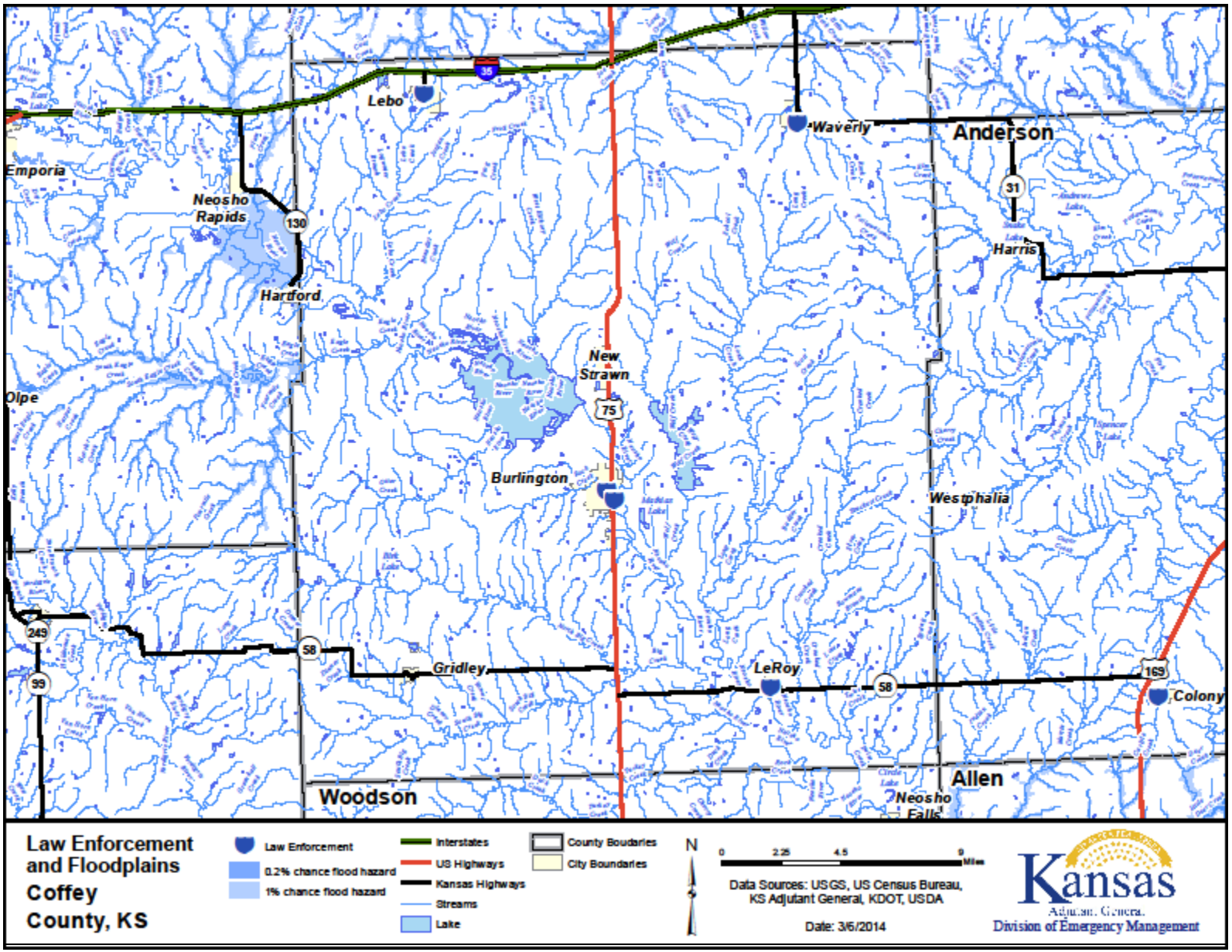

Richmond
Waverly
Anderson
Linn
Greeley
Parker
Harris
Garnett
Welda
Colony
Kincaid
LeRoy
Blue Mound
Bourbon
Allen
Mildred
31
169
59
58
3
Fire Stations and Floodplains
Anderson County, KS
Fire Station
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management

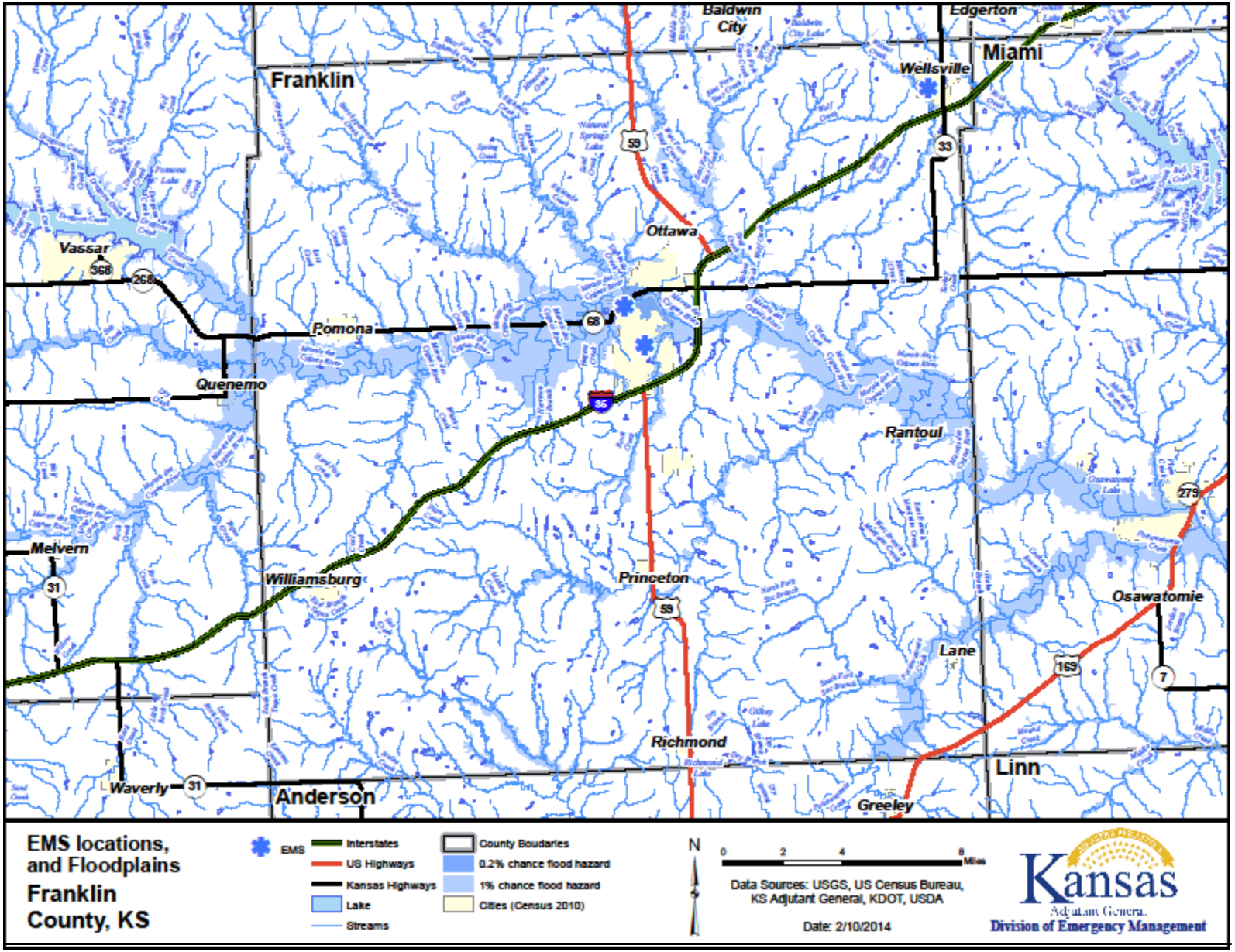

Richmond
Waverly
Anderson
Linn
Greeley
Parker
Harris
Garnett
Westphalia
Welda
LeRoy
Colony
Lone Elm
Kincaid
Blue Mound
Bourbon
Mildred
Allen
31
169
59
58
3
Law Enforcement and Floodplains
Anderson County, KS
Law Enforcement
0.2% chance flood hazard
1% chance flood hazard
Interstates
US Highways
Kansas Highways
Streams
Lake
County Boundaries
City Boundaries
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 3/6/2014
Kansas
Adjutant General
Division of Emergency Management

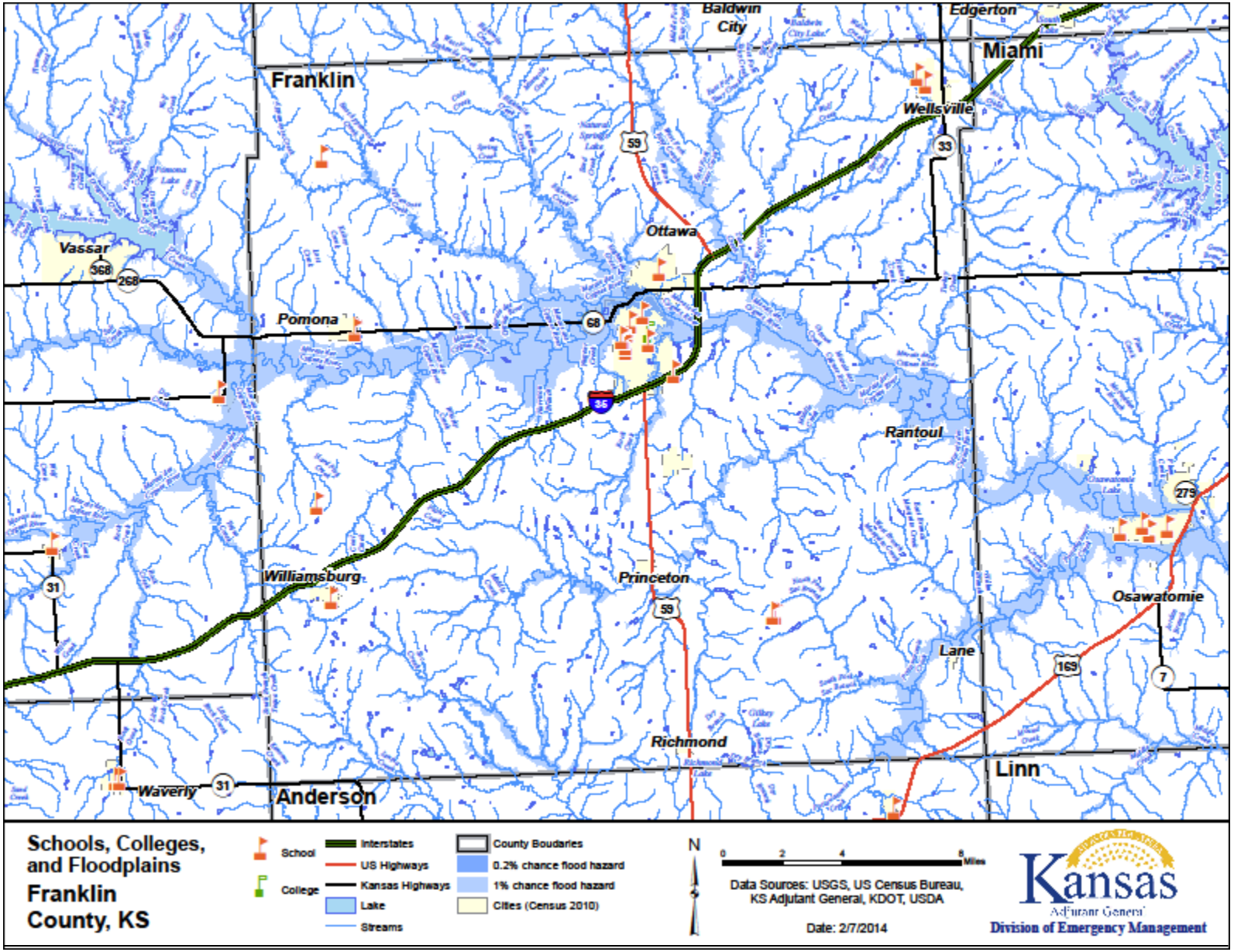

Coffey
131
35
Lebo
Waverly
Anderson
Emporia
Neosho
Rapids
130
31
Harris
Hartford
New
Strawn
Olpe
75
Westphalia
Burlington
Madison
249
58
Gridley
LeRoy
58
169
Colony
99
Woodson
Allen
Neosho
Falls
EMS locations,
and Floodplains
Coffey
County, KS
EMS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0
2.25
4.5
9
Miles
Data Sources: USGS, US Census Bureau,
KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management

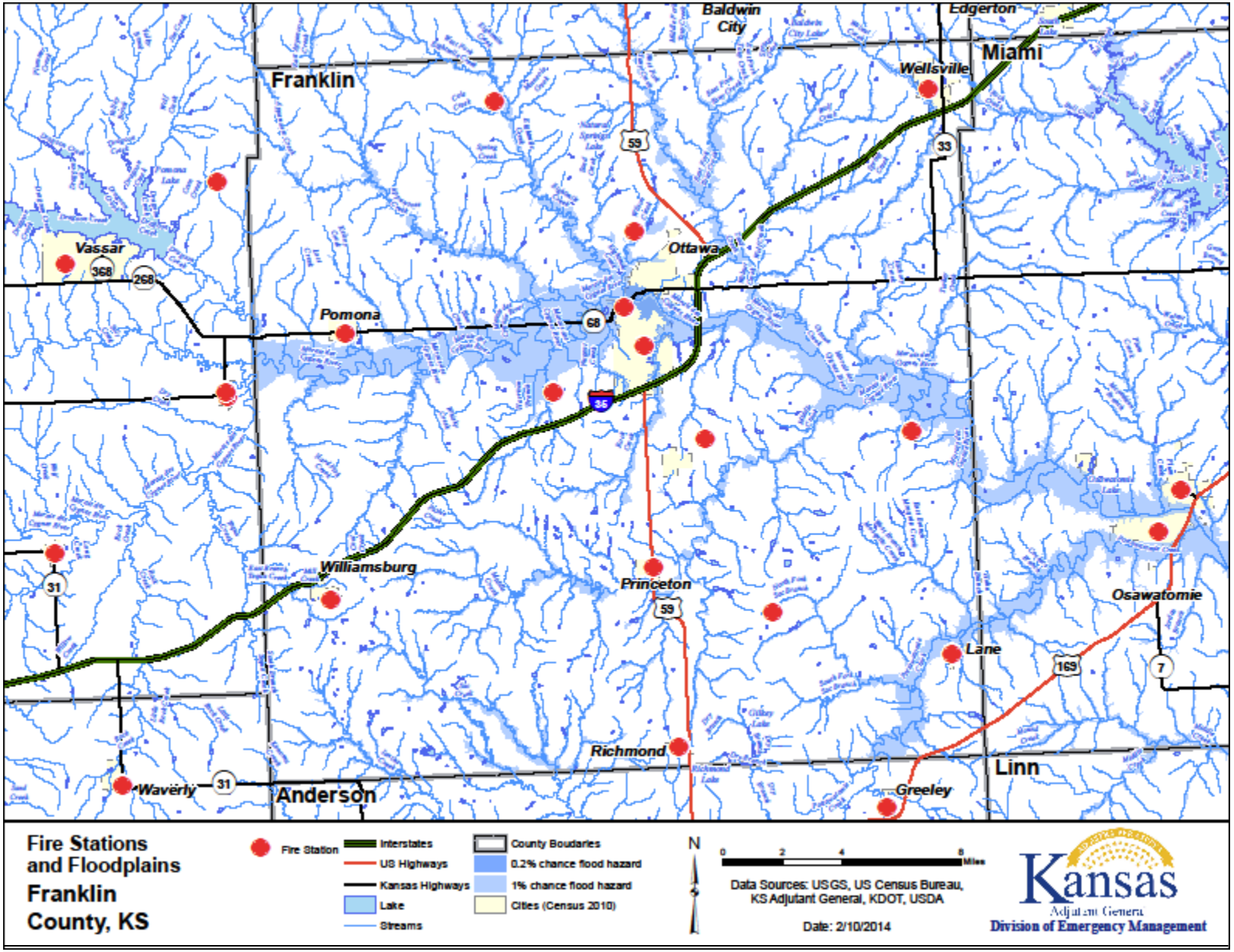

Coffey
Lebo
Waverly
Anderson
Emporia
130
31
Harris
New Strawn
Olpe
75
Burlington
Madison
58
99
Gridley
LeRoy
58
169
Woodson
Neosho Falls
Allen
Schools, Colleges, and Floodplains
Coffey County, KS
School
College
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2.25 4.5 9 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/7/2014
Kansas
Adjutant General
Division of Emergency Management

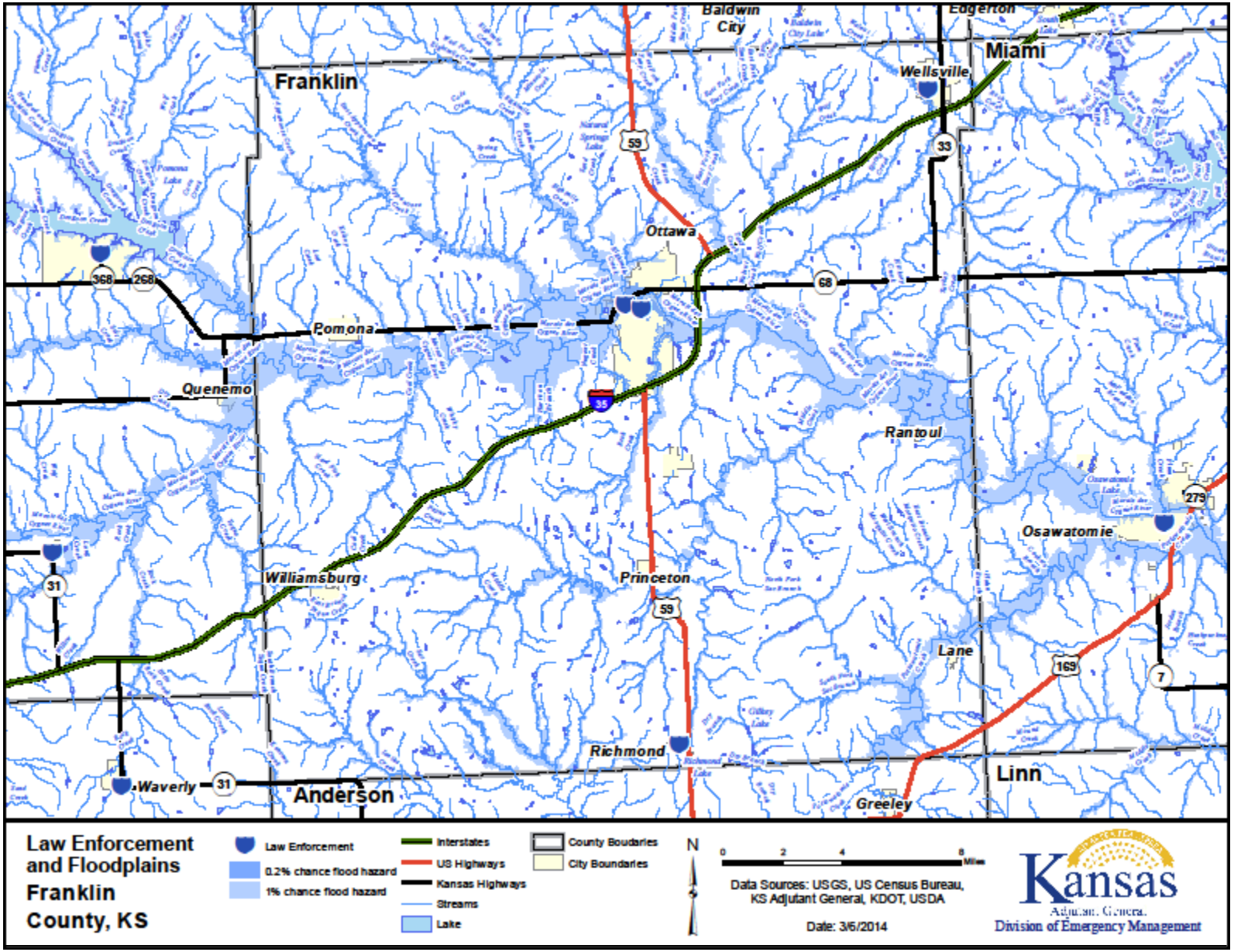

Coffey
Lebo
Waverly
Anderson
Emporia
Neosho Rapids
130
31
Harris
New Strawn
Olpe
75
Burlington
Madison
58
99
Gridley
LeRoy
58
169
Colony
Allen
Woodson
Neosho Falls
Fire Stations and Floodplains
Coffey County, KS
Fire Station
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2.25 4.5 9 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management

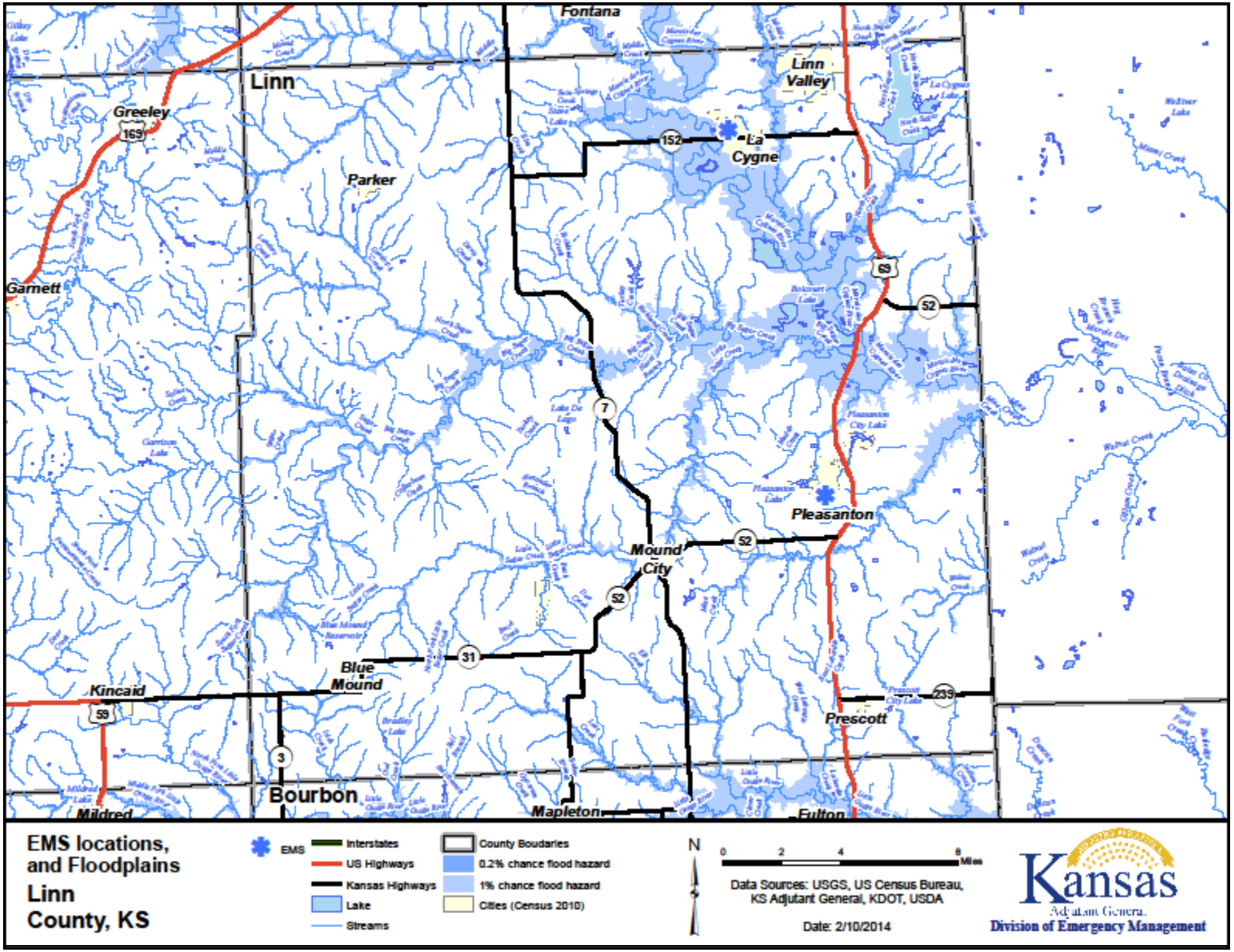

Lebo
Waverly
Anderson
Emporia
Neosho Rapids
Harris
Hartford
New Strawn
Olpe
Burlington
Westphalia
Gridley
LeRoy
Colony
Allen
Woodson
Neosho Falls
Law Enforcement and Floodplains Coffey County, KS
Law Enforcement
0.2% chance flood hazard
1% chance flood hazard
Interstates
US Highways
Kansas Highways
Streams
Lake
County Boundaries
City Boundaries
N
0 2.25 4.5 9 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 3/6/2014
Kansas
Adjutant General
Division of Emergency Management

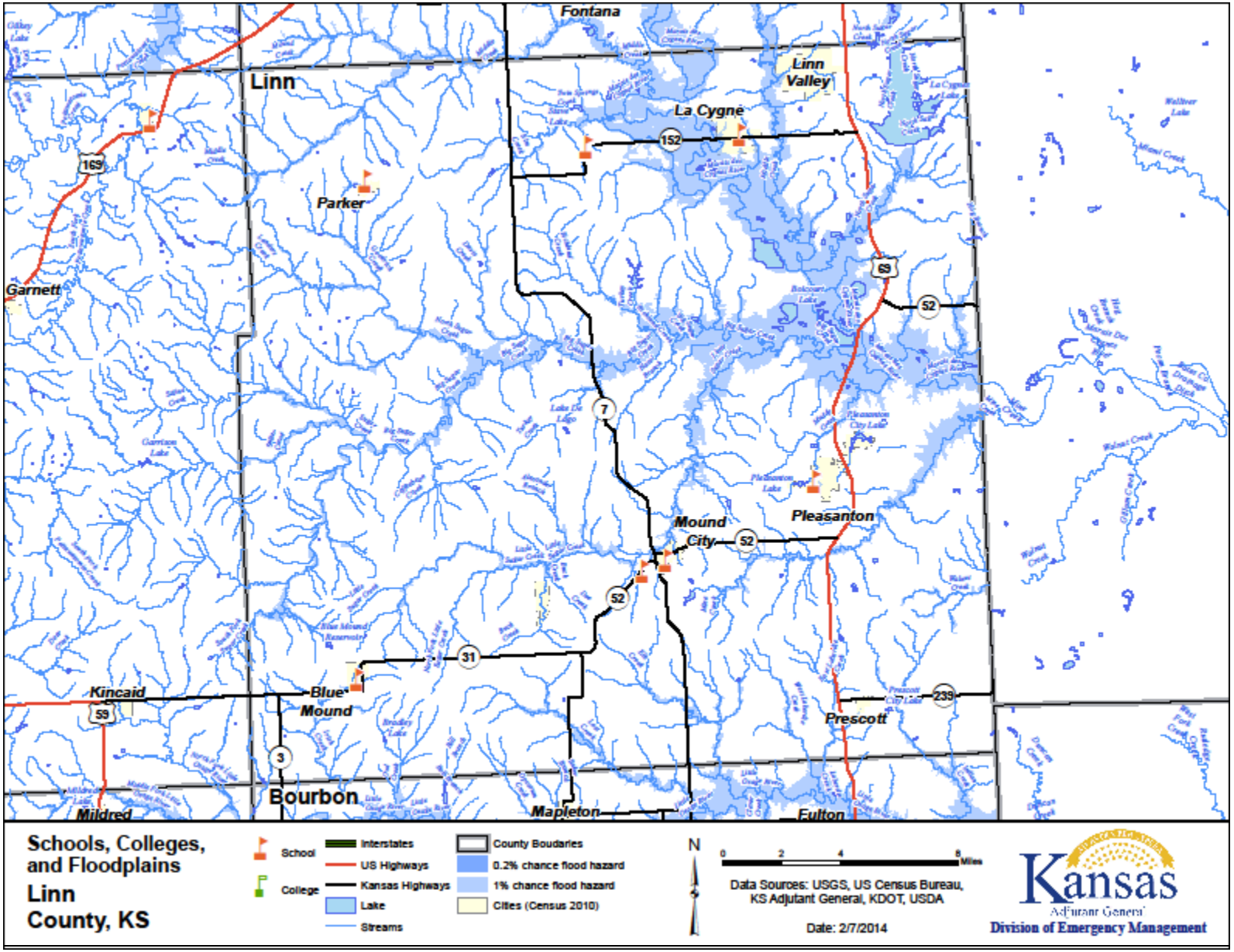

Baldwin City
Edgerton
Franklin
Wellsville
Miami
Ottawa
Vassar
Pomona
Quenemo
Rantoul
Melvern
Williamsburg
Princeton
Osawatomie
Lane
Richmond
Waverly
Anderson
Linn
Greeley
EMS locations, and Floodplains
Franklin County, KS
EMS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management

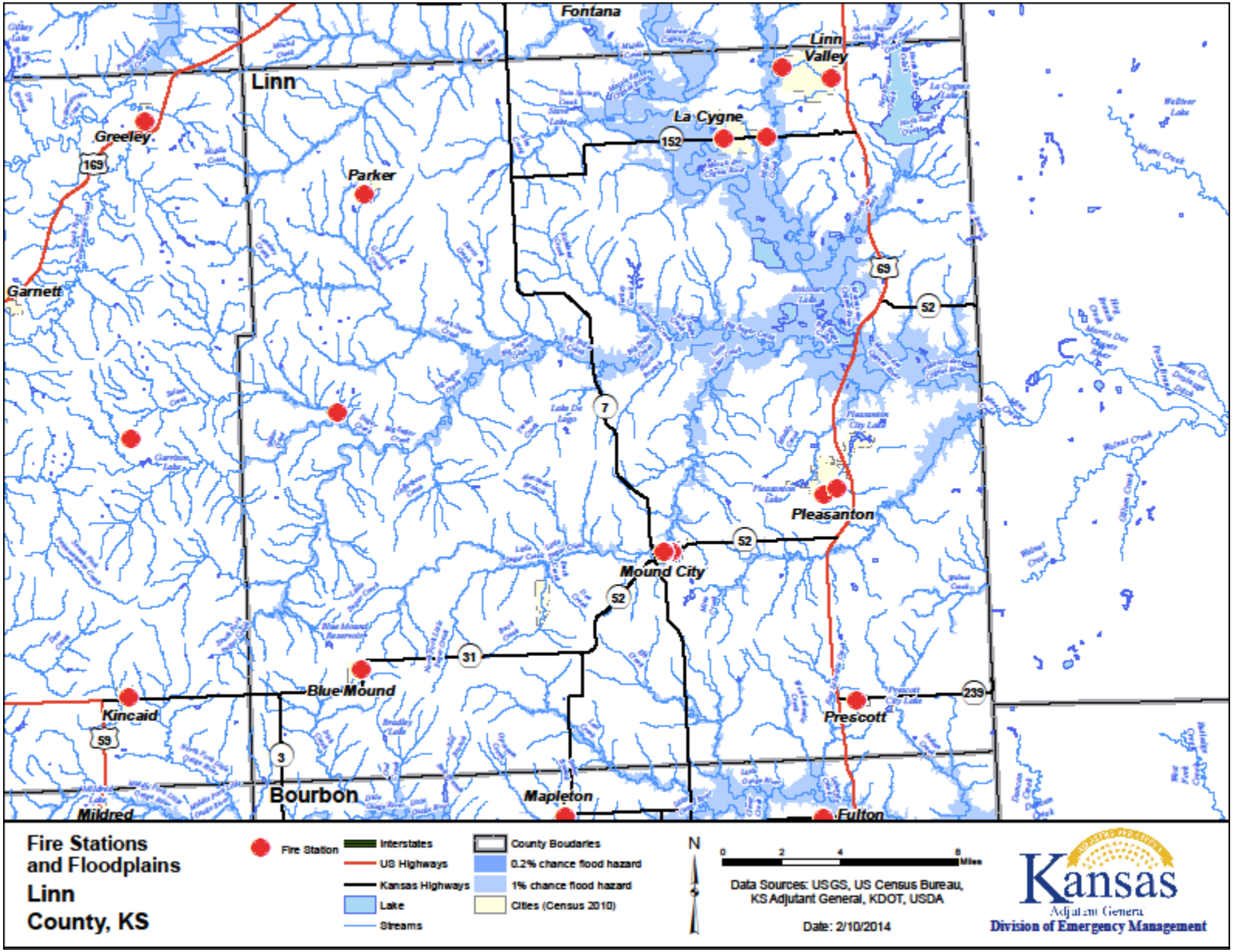

Baldwin City
Edgerton
Franklin
Miami
Wellsville
Ottawa
Vassar
Pomona
Rantoul
Williamsburg
Princeton
Osawatomie
Lane
Richmond
Waverly
Anderson
Linn
Schools, Colleges, and Floodplains
Franklin County, KS
School
College
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/7/2014
Kansas
Adjutant General
Division of Emergency Management

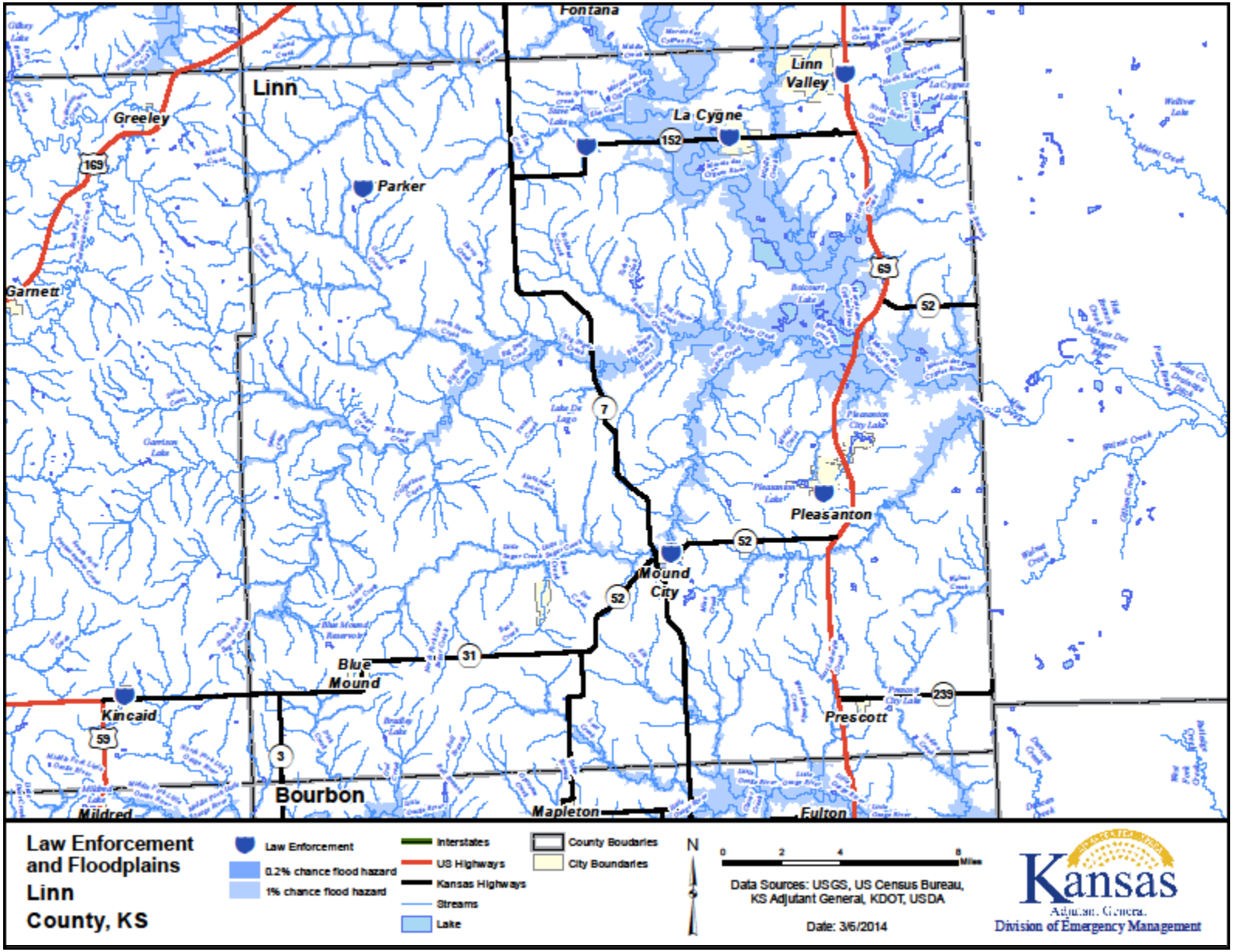

Baldwin City
Edgerton
Franklin
Miami
Wellsville
Vassar
Ottawa
Pomona
Williamsburg
Princeton
Osawatomie
Lane
Richmond
Waverly
Anderson
Linn
Greeley
Fire Stations and Floodplains
Franklin County, KS
Fire Station
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management

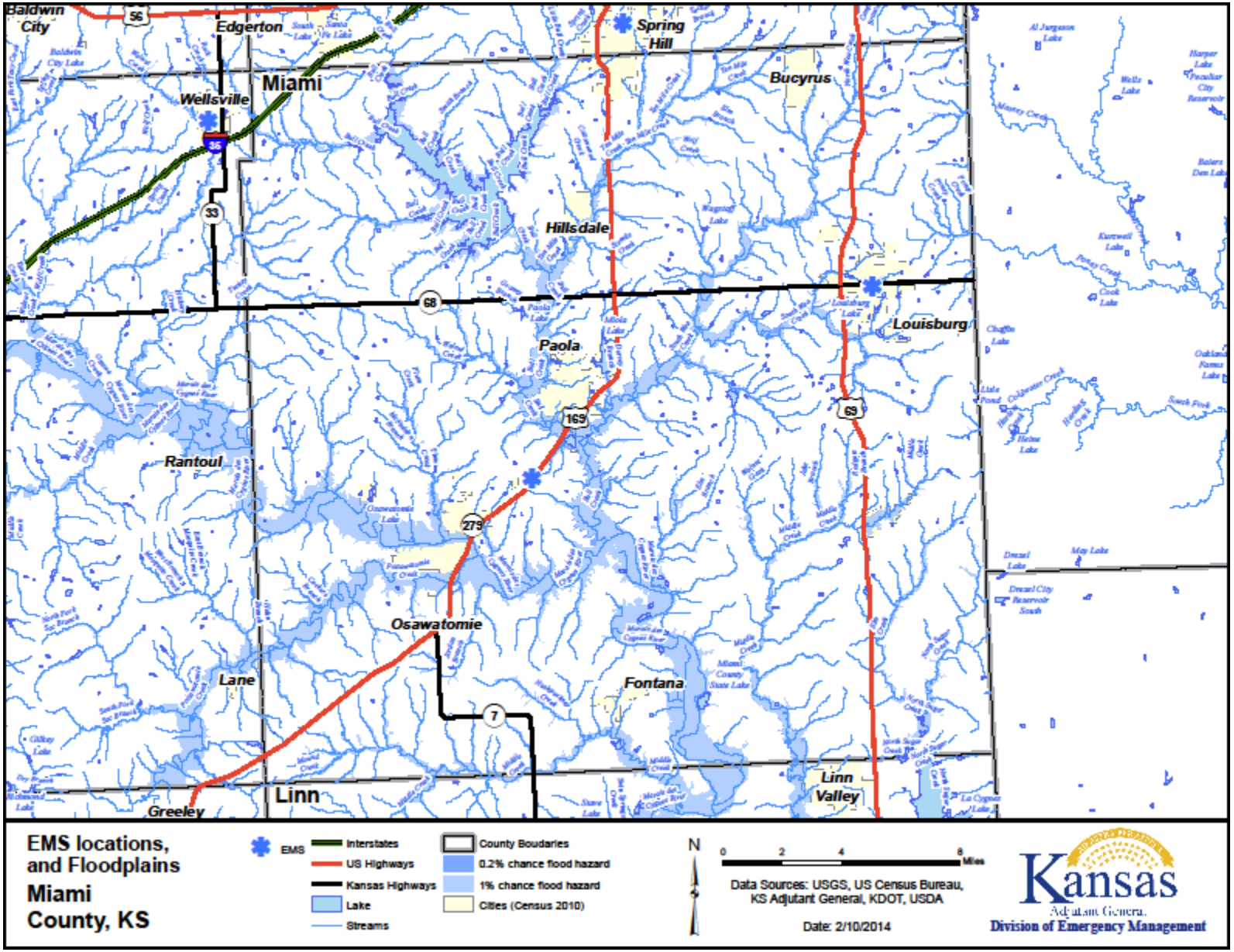

Baldwin City
Edgerton
Miami
Franklin
Wellsville
Ottawa
Pomona
Quenemo
Rantoul
Osawatomie
Williamsburg
Princeton
Lane
Richmond
Waverly
Anderson
Linn
Greeley
59
33
68
35
31
169
7
279
368
268
Law Enforcement and Floodplains Franklin County, KS
Law Enforcement
0.2% chance flood hazard
1% chance flood hazard
Interstates
US Highways
Kansas Highways
Streams
Lake
County Boundaries
City Boundaries
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 3/6/2014
Kansas
Adjutant General
Division of Emergency Management

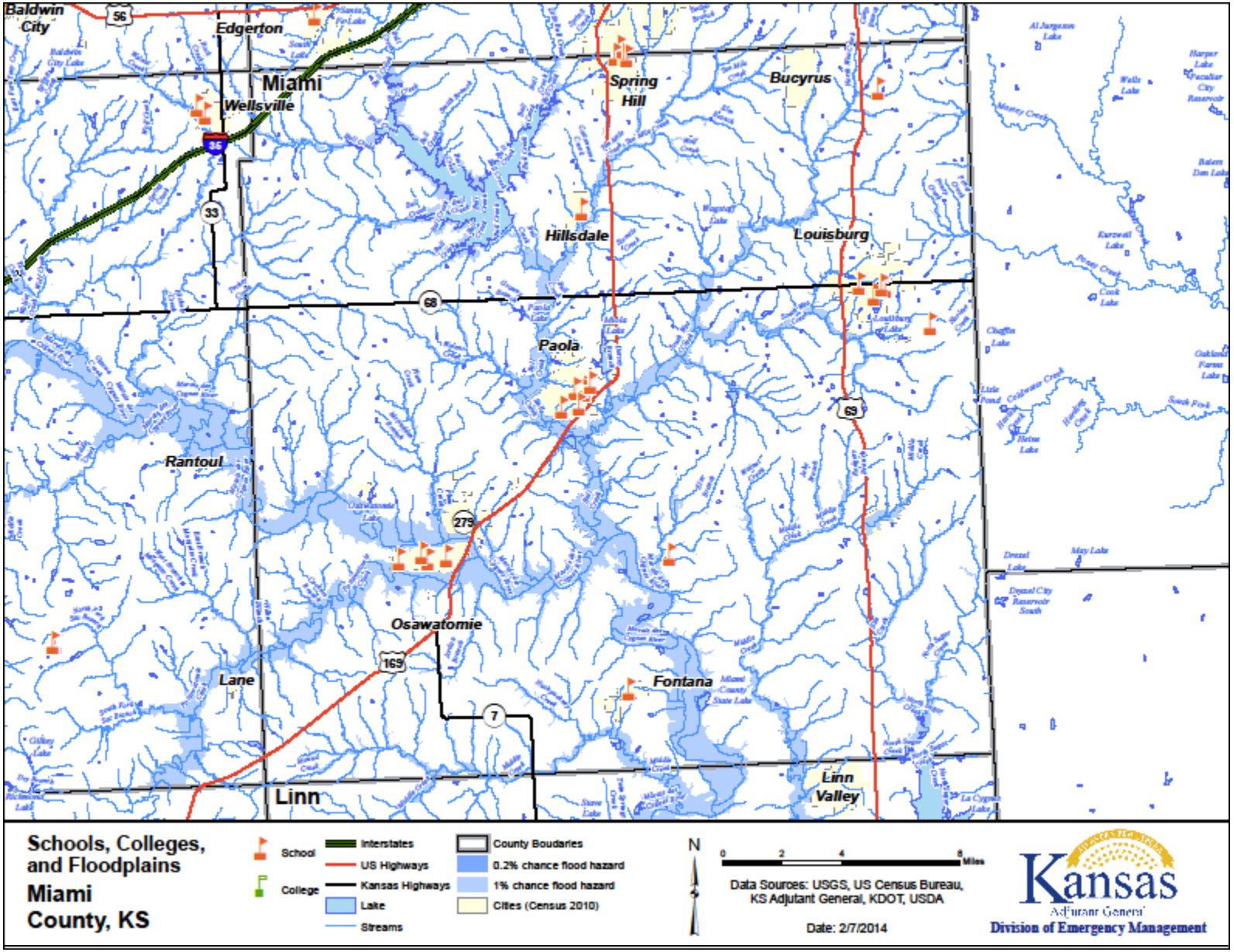

Fontana
Linn
Linn Valley
Greeley
169
Parker
152
La Cygne
Garnett
69
52
7
Pleasanton
Mound City
52
52
31
Blue Mound
Kincaid
59
239
Prescott
3
Bourbon
Mapleton
Fulton
Mildred
EMS locations, and Floodplains
Linn County, KS
EMS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management

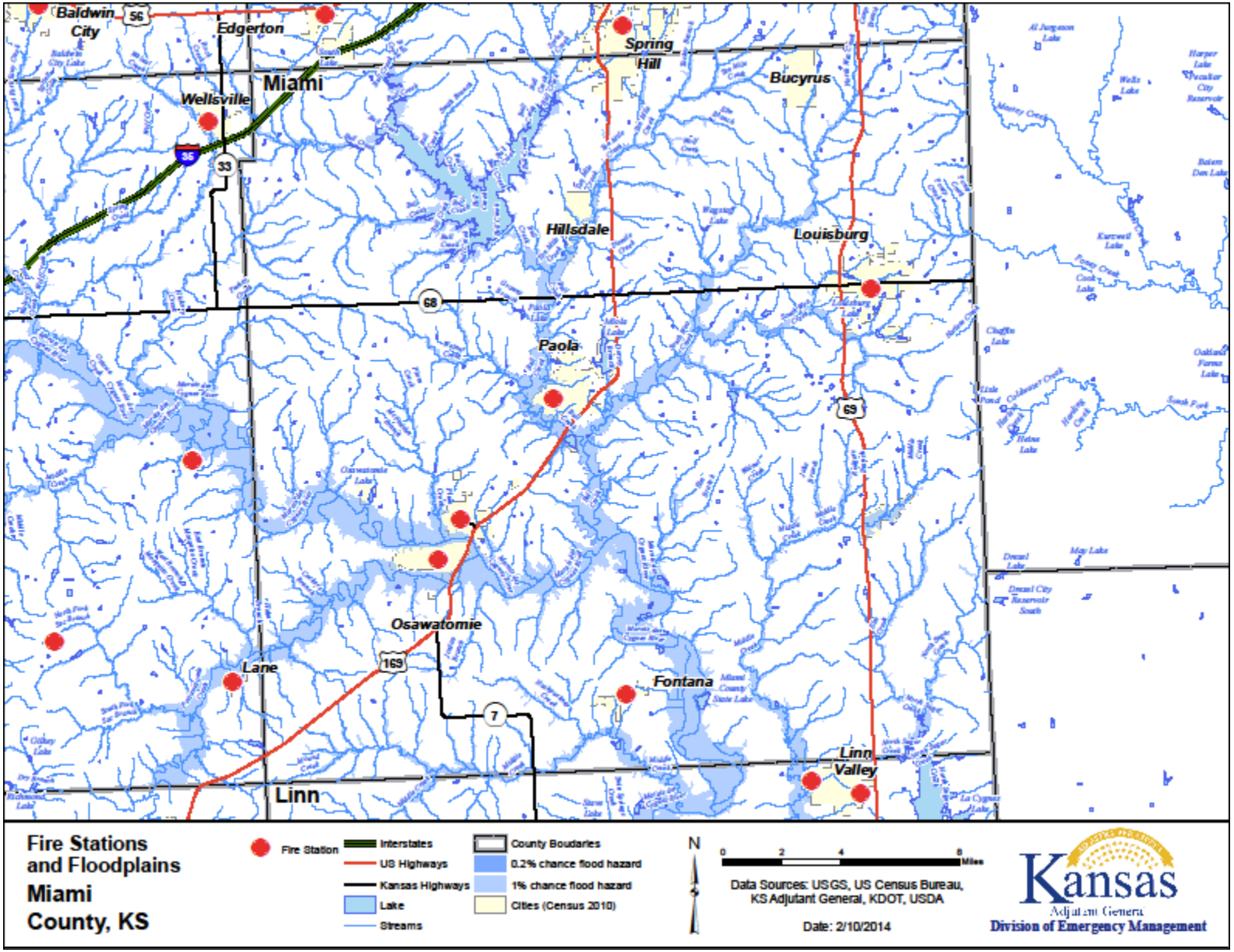

Fontana
Linn
Linn Valley
La Cygne
Parker
Garnett
Mound City
Pleasanton
Kincaid
Blue Mound
Prescott
Bourbon
Mapleton
Fulton
Schools, Colleges, and Floodplains
Linn County, KS
School
College
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/7/2014
Kansas
Adjutant General
Division of Emergency Management

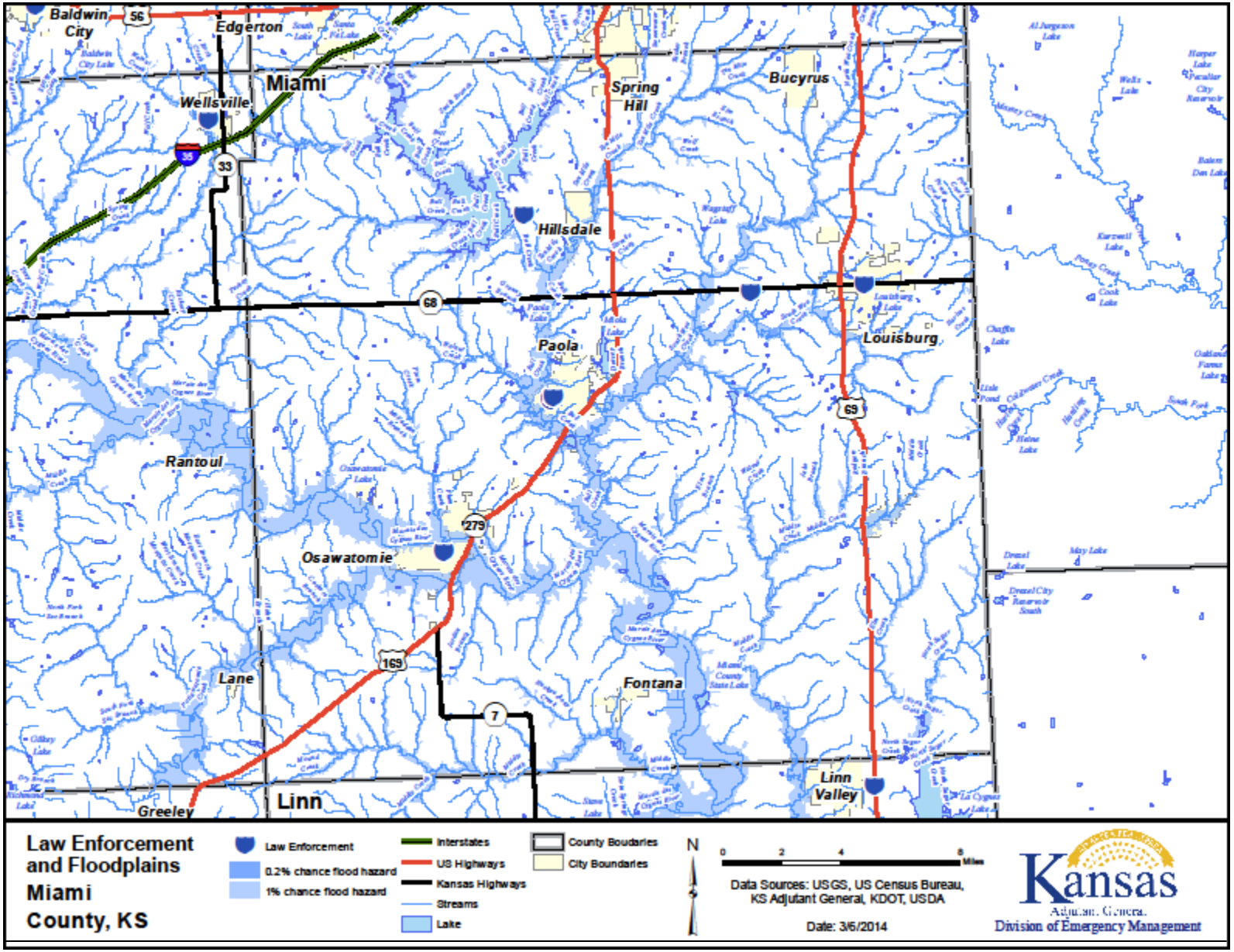

Fontana
Linn Valley
Linn
La Cygne
Greeley
Parker
Garnett
Pleasanton
Mound City
Blue Mound
Kincaid
Prescott
Bourbon
Mapleton
Fulton
Mildred
169
152
69
52
7
31
59
3
239
Fire Stations and Floodplains
Linn County, KS
Fire Station
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management

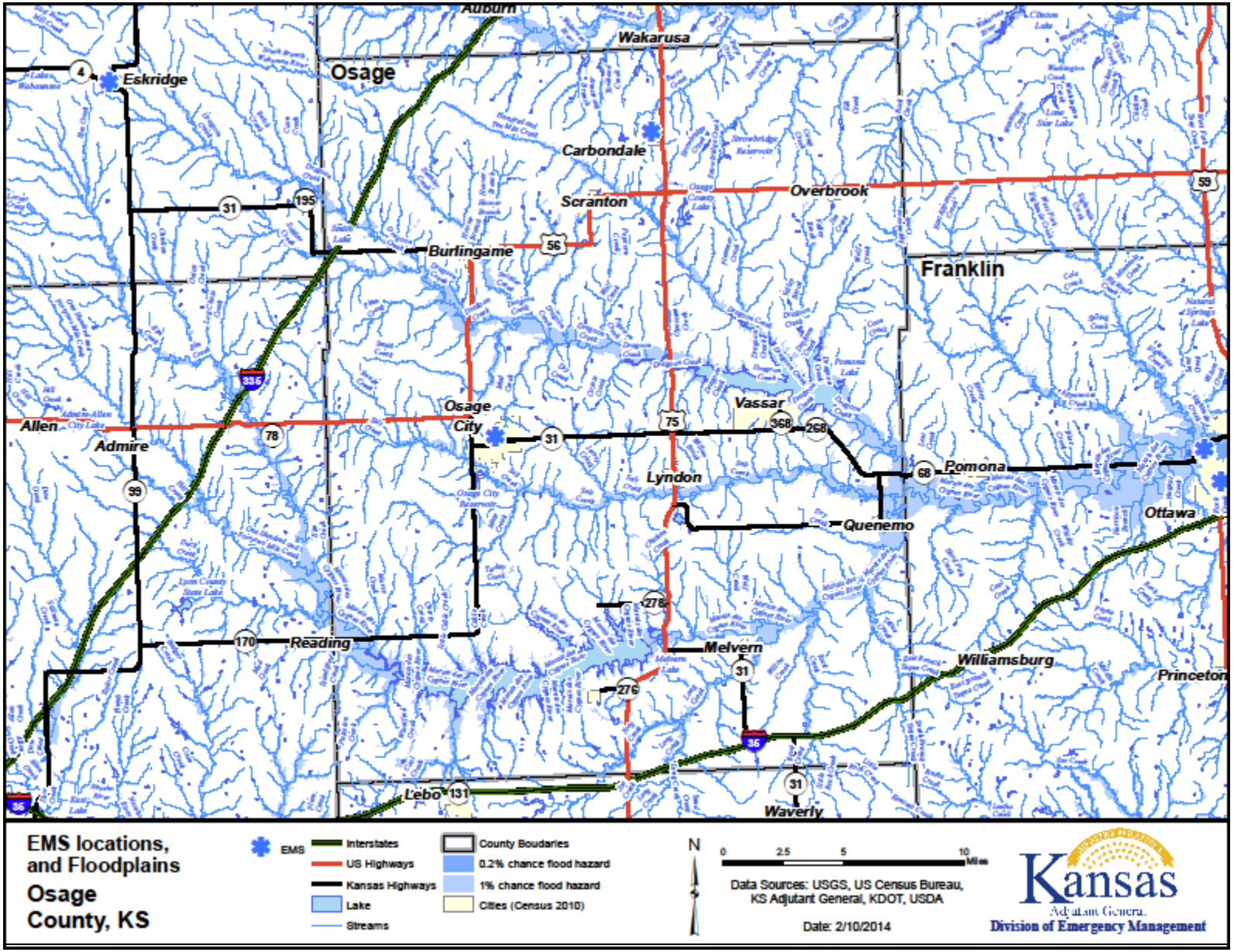

Fontana
Linn
Linn Valley
Greeley
La Cygne
152
169
Parker
Garnett
69
52
7
Pleasanton
52
Mound City
52
31
Blue Mound
Kincaid
59
239
Prescott
3
Bourbon
Mapleton
Fulton
Mildred
Law Enforcement and Floodplains
Linn
County, KS
Law Enforcement
0.2% chance flood hazard
1% chance flood hazard
Interstates
US Highways
Kansas Highways
Streams
Lake
County Boundaries
City Boundaries
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 3/6/2014
Kansas
Adjutant General
Division of Emergency Management

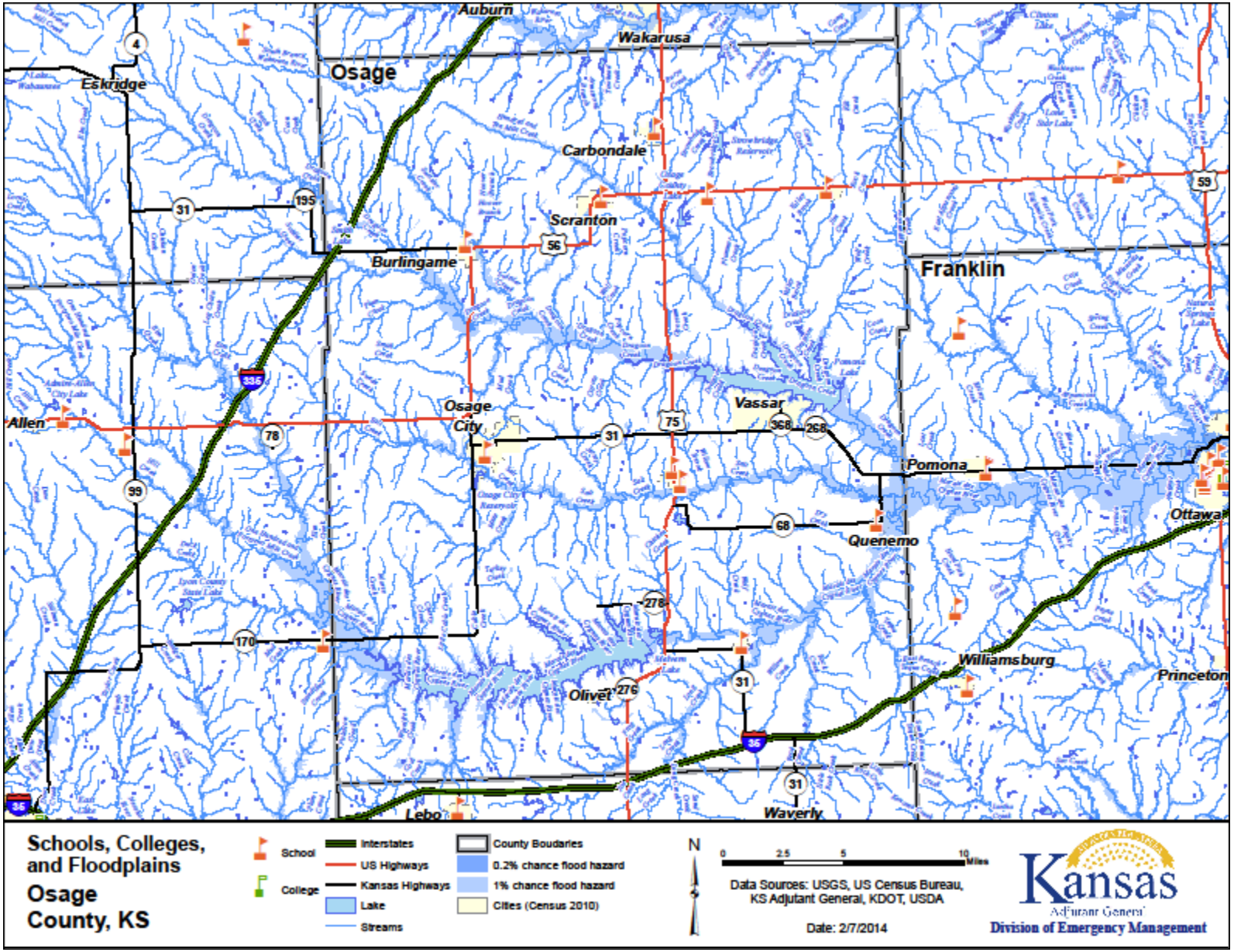

Baldwin City
Edgerton
Spring Hill
Miami
Wellsville
Bucyrus
Hillsdale
Louisburg
Paola
Rantoul
Osawatomie
Lane
Fontana
Linn
Greeley
Linn Valley
56
35
33
68
169
69
279
7
EMS locations, and Floodplains
Miami County, KS
EMS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management

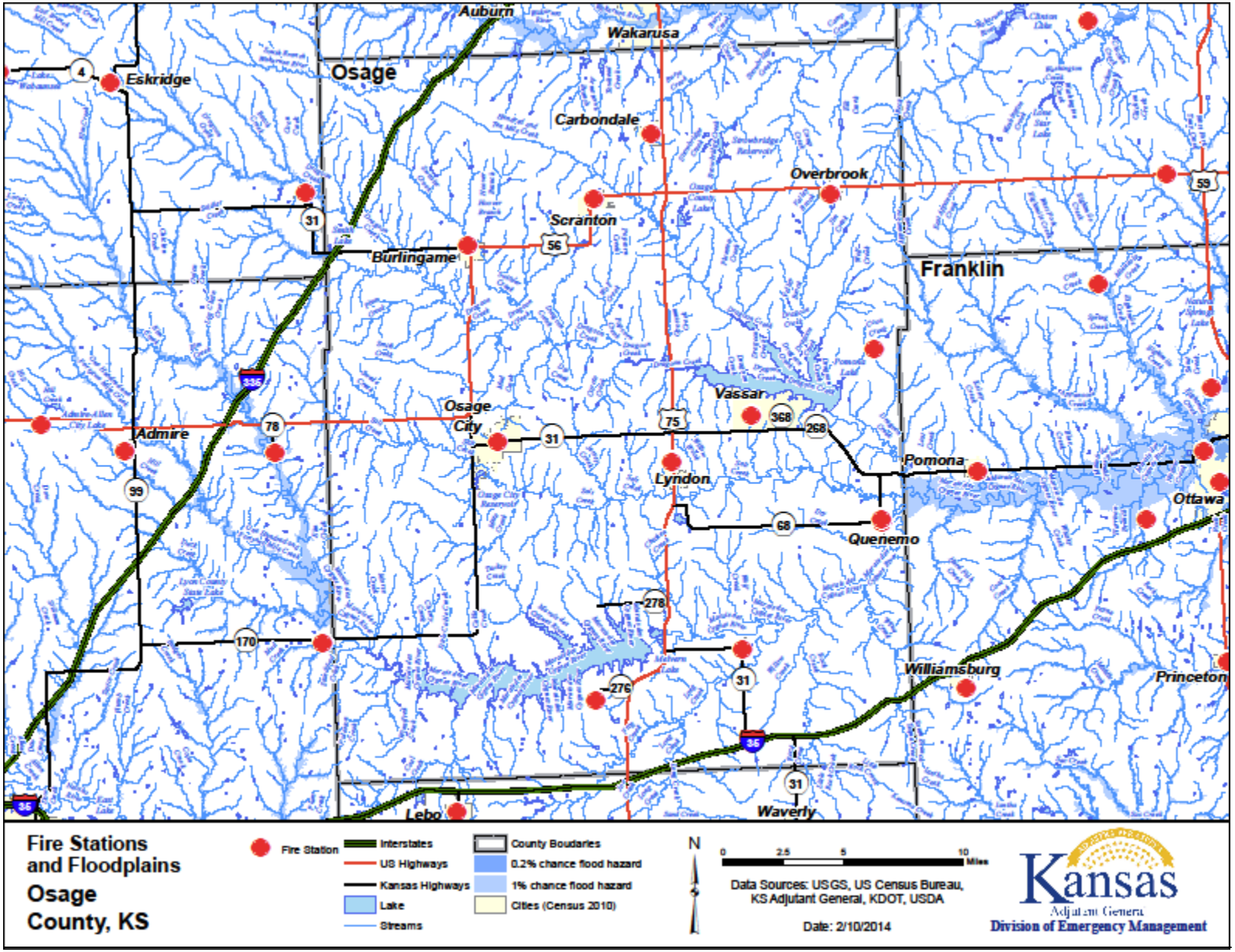

Baldwin City
Edgerton
Miami
Wellsville
Spring Hill
Bucyrus
Hillsdale
Louisburg
Paola
Rantoul
Osawatomie
Lane
Fontana
Linn
Linn Valley
56
35
33
68
69
273
169
7
Schools, Colleges, and Floodplains
Miami County, KS
School
College
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/7/2014
Kansas
Adjutant General
Division of Emergency Management

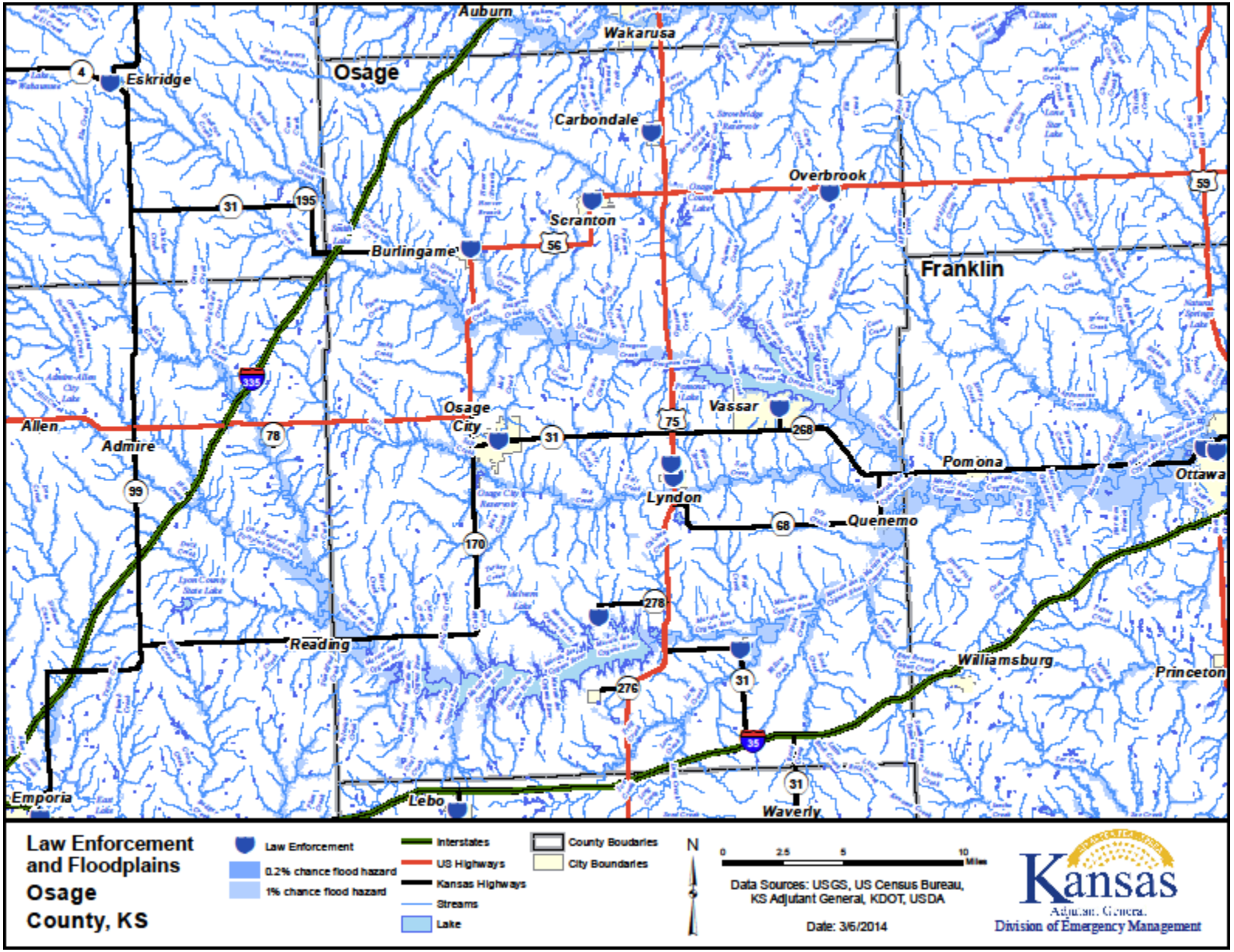

Baldwin City
Edgerton
Miami
Wellsville
Spring Hill
Bucyrus
Hillsdale
Louisburg
Paola
Osawatomie
Lane
Fontana
Linn Valley
Linn
56
33
35
68
69
169
7
Fire Stations and Floodplains
Miami County, KS
Fire Station
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management

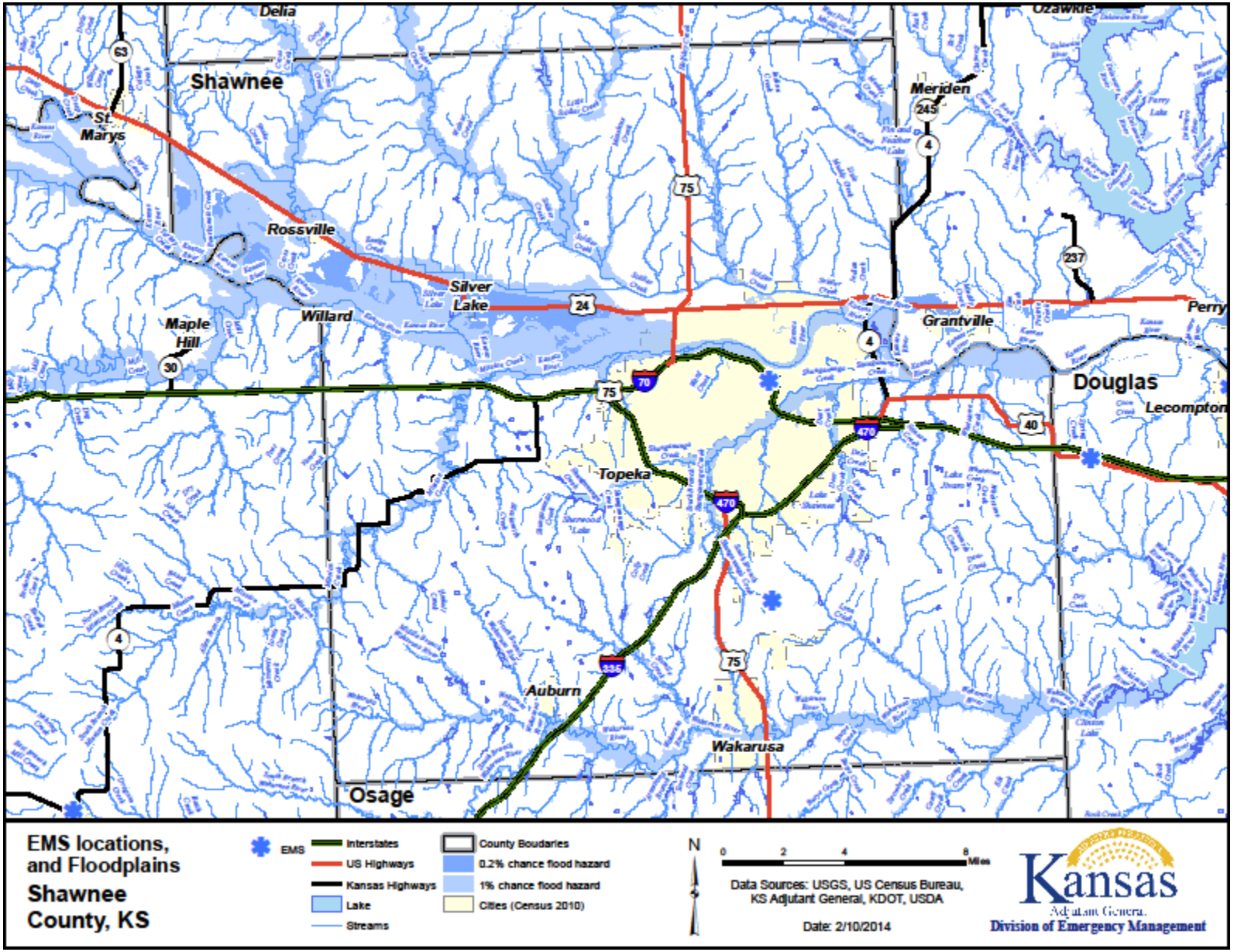

Baldwin City
56
Edgerton
Miami
Wellsville
35
33
Spring Hill
Bucyrus
Hillsdale
68
Paola
Louisburg
69
Rantoul
279
Osawatomie
169
Lane
Fontana
7
Linn
Greeley
Linn Valley
Law Enforcement and Floodplains Miami County, KS
Law Enforcement
0.2% chance flood hazard
1% chance flood hazard
Interstates
US Highways
Kansas Highways
Streams
Lake
County Boundaries
City Boundaries
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 3/6/2014
Kansas
Adjutant General
Division of Emergency Management

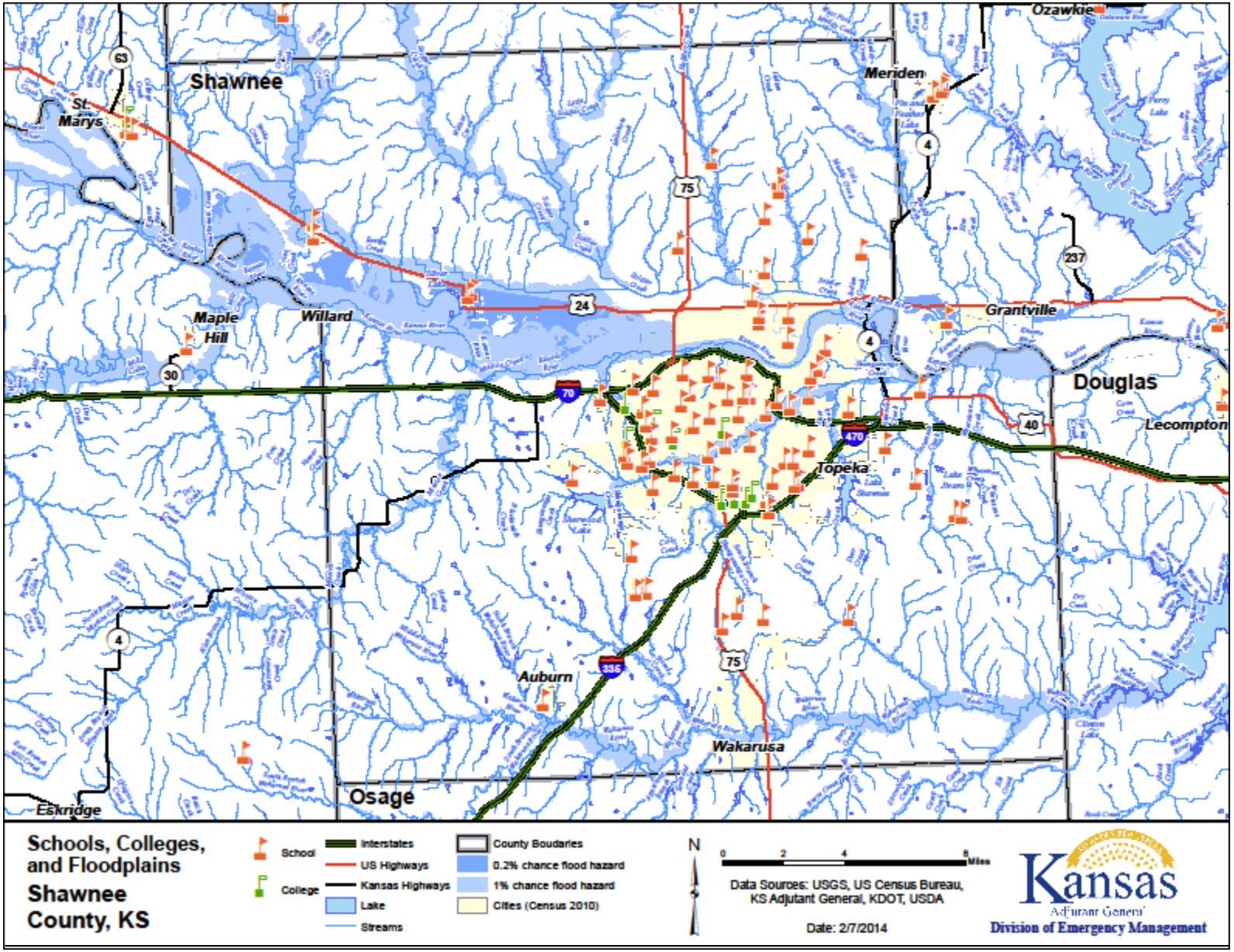

Auburn
Wakarusa
Osage
Eskridge
Carbondale
Overbrook
Scranton
Burlingame
Franklin
Osage City
Vassar
Allen
Admire
Lyndon
Pomona
Quenemo
Ottawa
Reading
Melvern
Williamsburg
Princeton
Lebo
Waverly
EMS locations, and Floodplains
Osage County, KS
EMS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2.5 5 10 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management

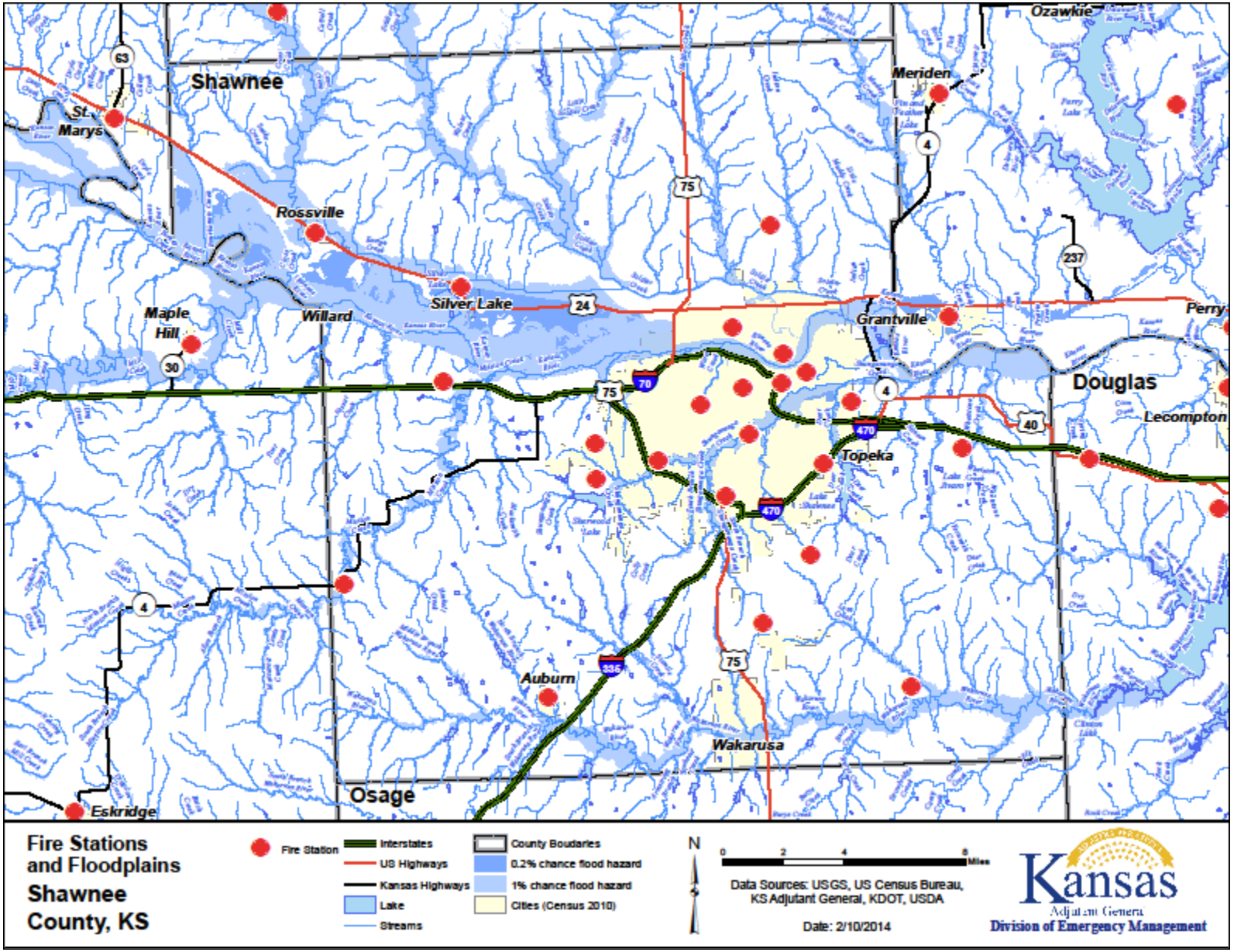

Auburn
Wakarusa
Osage
Eskridge
Carbondale
Scranton
Burlingame
Franklin
Vassar
Osage City
Allen
Pomona
Ottawa
Quenemo
Williamsburg
Princeton
Olivet
Lebo
Waverly
Schools, Colleges, and Floodplains
Osage County, KS
School
College
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2.5 5 10 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/7/2014
Kansas
Adjutant General
Division of Emergency Management

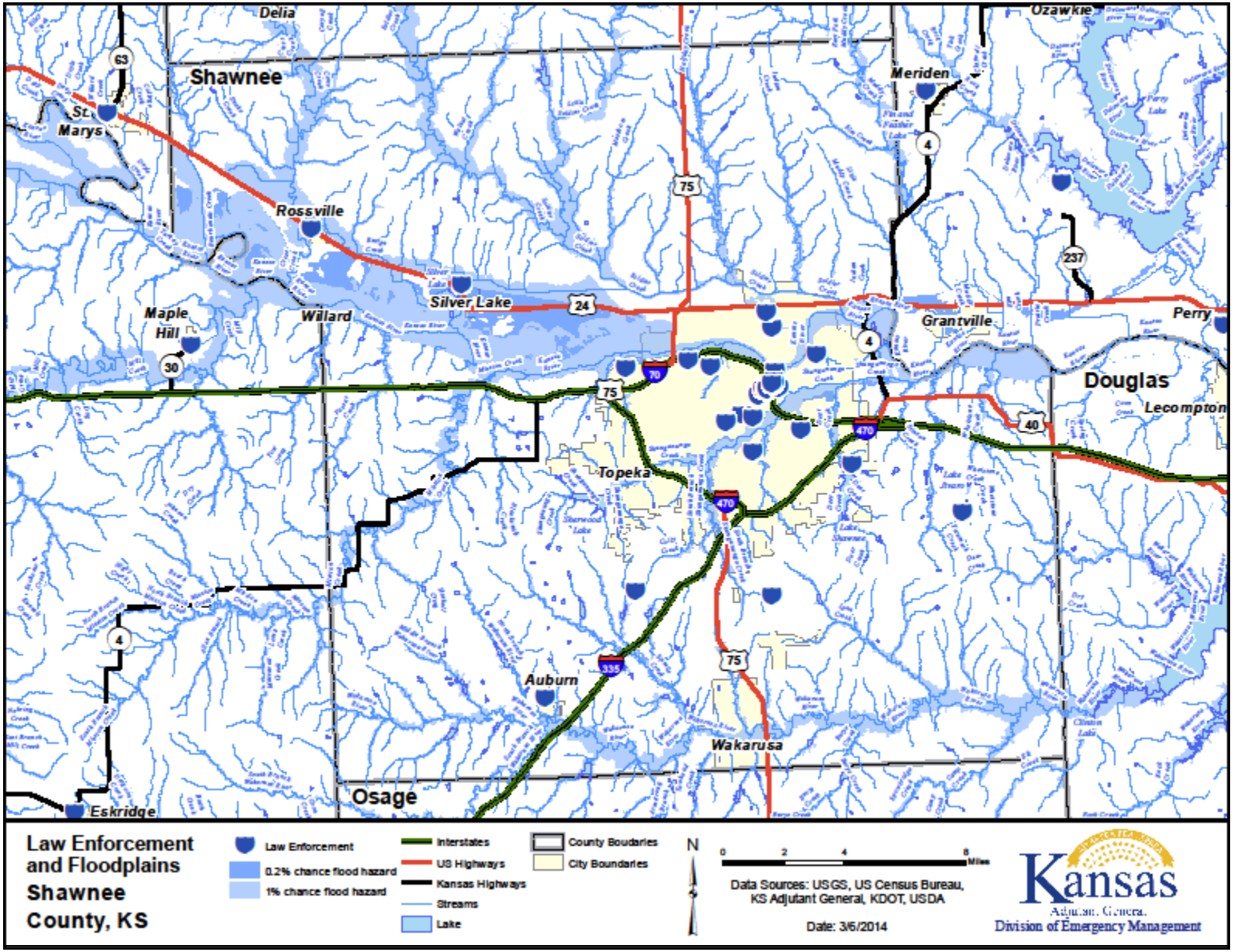

Auburn
Wakarusa
Osage
Eskridge
Carbondale
Overbrook
Scranton
Burlingame
Franklin
Vassar
Osage City
Admire
Lyndon
Pomona
Ottawa
Quenemo
Williamsburg
Princeton
Lebo
Waverly
Fire Stations and Floodplains
Osage County, KS
Fire Station
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2.5 5 10 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management


Auburn
Wakarusa
Osage
Eskridge
Carbondale
Overbrook
Scranton
Burlingame
Franklin
Osage City
Vassar
Allen
Admire
Pomona
Ottawa
Lyndon
Quenemo
Reading
Williamsburg
Princeton
Emporia
Lebo
Waverly
Law Enforcement and Floodplains
Osage
County, KS
Law Enforcement
0.2% chance flood hazard
1% chance flood hazard
Interstates
US Highways
Kansas Highways
Streams
Lake
County Boundaries
City Boundaries
N
0 2.5 5 10 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 3/6/2014
Kansas
Adjutant General
Division of Emergency Management


Delia
Shawnee
St. Marys
Rossville
Silver Lake
Willard
Maple Hill
Meriden
Ozawkie
Grantville
Perry
Douglas
Lecompton
Topeka
Auburn
Wakarusa
Osage
EMS locations, and Floodplains
Shawnee County, KS
EMS
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management


Shawnee
St. Marys
Maple Hill
Willard
Meriden
Ozawkie
Grantville
Douglas
Lecompton
Topeka
Auburn
Wakarusa
Osage
Eskridge
63
24
75
4
30
70
470
40
237
335
Schools, Colleges, and Floodplains
Shawnee County, KS
School
College
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/7/2014
Kansas
Adjutant General
Division of Emergency Management


Shawnee
Ozawkie
Meriden
St. Marys
Rossville
Silver Lake
Willard
Maple Hill
Grantville
Perry
Douglas
Lecompton
Topeka
Auburn
Wakarusa
Osage
Eskridge
63
75
24
30
70
4
40
470
335
237
Fire Stations and Floodplains
Shawnee County, KS
Fire Station
Interstates
US Highways
Kansas Highways
Lake
Streams
County Boudaries
0.2% chance flood hazard
1% chance flood hazard
Cities (Census 2010)
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 2/10/2014
Kansas
Adjutant General
Division of Emergency Management


Delia
Ozawkie
Shawnee
Meriden
St. Marys
Rossville
Silver Lake
Maple Hill
Wilard
Grantville
Perry
Douglas
Lecompton
Topeka
Auburn
Wakarusa
Osage
Eskridge
63
4
75
24
30
70
470
40
237
335
Law Enforcement and Floodplains
Shawnee
County, KS
Law Enforcement
0.2% chance flood hazard
1% chance flood hazard
Interstates
US Highways
Kansas Highways
Streams
Lake
County Boundaries
City Boundaries
N
0 2 4 8 Miles
Data Sources: USGS, US Census Bureau, KS Adjutant General, KDOT, USDA
Date: 3/6/2014
Kansas
Adjutant General
Division of Emergency Management

	Magnitude/Severity
Flood	3.14

Local Concerns

The following detail specific local concerns as related to flooding:

- In Anderson County, the City of Garnett has three identified Special Flood Hazard Areas (SFHAs), one located in the northern portion of the city adjacent to Lake Garnett, one located to the southwest of Lake Garnett along one of the lake's tributaries, and one located on the southern edge of town near Crystal Lake. The City of Greeley has two identified SFHAs located throughout the northern and southern portions of the city, due to proximity of the South Fork of Pottawatomie Creek. The city of Kincaid has one identified SFHA trending north-south on the wesernt side of the city, due to proximity to the unnamed tributary of the North Fork Little Osage River. The city of Westphalia has two identified SFHAs trending east-west in the northern and southern portions of the city due to proximity to Thomas Creek.
- In Coffey County, the City of Burlington has two identified flood zones, one along the Neosho River (Zone A and Zone AE) and one across the northern half of the city following Rock Creek (Zone A and Zone AE). Both of these flood areas appear to contact developed land. The City of Gridley has four identified flood zones (all Zone A), three are along or near the southern edge of the corporate limits and one surrounding Gridley City Lake. The City of LeRoy has three identified flood zones (all Zone A), one along the western edge of the corporate limits, one along the eastern edge of the city, and one following the Neosho River along the southern city boundary. All of these areas include minor development. The City of Waverly has three identified flood zones (all Zone A), one encompassing several blocks along Hammond Street., one extending through the center of the city, and one following Rock Creek along the eastern boundary of the city.
- In Franklin County, the City of Lane is located adjacent to the south of Pottawatomie Creek, and has identified SFHAs located on the north and northeast sides of town due to the proximity of the creek that encompass areas of residential development In Franklin County, the City of Ottawa is protected by a levee system, and is classified as being in Zone X-500, defined as "an area inundated by 500-year flooding; an area inundated by 100-year flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile; or an area protected by levees from 100-year flooding". In addition, SFHAs are located in the north, northeast, northwest, and southeast sections of the city. The City of Rantoul, located in close proximity to the Marais des Cygnes River, has identified SFHAs on the north, northwest, and northeast sides of the city. The City of Wellsville is located in close proximity to West Rock Creek and Walnut Creek, has SFHAs along the west sides of the city (Walnut Creek) and a small area in the northeast corner of the city (West Rock Creek).
- In Linn County, the City of La Cygnes is located along the Marias des Cygnes river and has identified flood hazard areas located on the west and south sides of town due to proximity to the river. The City of Linn Valley is located along the east side of Middle Creek, and has minor flood hazard areas located along the west city boundaries. Mound

City is located along Little Sugar Creek and has identified flood hazard areas located on the north, west, and south sides of town due to proximity to the creek. The town of Parker has a small flood hazard zone near on the north side of the city, near a commercial area The town of Pleasanton, located along Muddy Creek, has flood hazard zone on the west side of town identified that includes a small residential area The town of Prescott has a small flood hazard zone on the southwest side of town that includes a small residential area

- In Miami County, the City of Paola reveals Zone A flood hazard areas on the north-northwest, west and south sides of the city. The sources of potential flooding include Bull Creek that is a north-south creek located on the west side of the city, and South Wea Creek running in an east-west direction along the southern city limits.
- In Shawnee County, the City of Auburn, located north of the North Branch of the Wakarusa River, has identified flood hazard areas located on the south and southeast sides of town due to proximity to the river. The City of Rossville, located in close proximity to Cross Creek, has a significant portion of the city located in SFHAs, including numerous residential and commercial properties. The City of Silver Lake has a SFHA in the south-central portion of the city. The City of Topeka has SFHA areas extending northward from the Kansas River and in various areas within the city limits. The City of Willard, located along the Kansas River, has SFHAs in a significant portion of the city, especially the northern and eastern areas.

Future Development

Continuing land development in east-central Kansas could place more people and property in flood-prone areas, unless floodplain management is implemented. It is not known how much development is occurring in flood hazard areas, but for communities in these counties that participate in the NFIP, any development in the floodplain should be built according to its corresponding floodplain management ordinance.

Modeling completed by HAZUS-MH 2.1 indicates that $598,936,000 in total direct building loss and income loss is vulnerable to flooding, with 16,671 persons vulnerable to displacement. In addition, regional population totals are estimated to rise from 279,511 persons in 2013 to 297,512 by 2040, with the increase seen in Franklin, Miami and Shawnee counties. These increases and future vulnerabilities may be offset as many of the flood prone cities have enacted floodplain ordinances limiting development in hazardous areas and/or are members of the NFIP.

According to the State's minimum standards, the first floor elevations of residential property must be a minimum of one foot above the base flood elevation. For non-residential properties, the standard is to either elevate or flood proof to one foot above the base flood elevation.

The Department of Agriculture, Division of Water Resources conducts Community Assistance Contacts which offer assistance to the participating communities and assess the floodplain program. Community Assistance Visits which are similar to full audits, are also conducted by the Division of Water Resources in order to ensure communities are in compliance with the floodplain management program.

Probability of Future Hazard Events

Based on the NCDC historical data available from 1996 to 2013, there were 726 flood and flash flood events in the region. On average, this equates to 40 events per year. And while past occurrences are no guarantee of future occurrences, considering that there are flood and flash flood occurring every year regionally, it is reasonable to determine that the overall probability of future flooding occurrence is likely.

	Probability
Flood	3.36

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Flood Consequence Analysis

Subject	Ranking	Impacts of Flood
Health and Safety of Persons in the Area of the Incident	Severe	Impact dependent on the level of flood waters. Individuals further away from the incident area are at a lower risk. Casualties are dependent on warning time.
Responders	Minimal	Impact to responders is expected to be minimal unless responders live within the affected area.
Continuity of Operations	Minimal to Severe	Temporary relocation may be necessary if inundation affects government facilities.
Property, Facilities, and Infrastructure	Severe	Localized impact could be severe in the inundation area of the incident to facilities and infrastructure. The further away from the incident area the damage lessens.
Delivery of Services	Minimal to Severe	Delivery of services could be affected if there is any disruption to the roads and/or utilities due to the flood waters.
Environment	Severe	Impact will be severe for impacted area. Impact will lessen with distance.
Economic Conditions	Minimal to Severe	Impacts to the economy depend on the area flooded, depth of water, and the amount of time it takes for the water to recede.
Public Confidence in Governance	Minimal to Severe	Perception of whether the flood could have been prevented, warning time, and response and recovery time will greatly impact the public's confidence.

3.7.9 HAILSTORM

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Hailstorm	3.89	2.75	3.43	1.00	**3.19**

Description

According to the NOAA hail is precipitation that is formed when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere causing them to freeze. The raindrops form into small frozen droplets and then continue to grow as they come into contact with super-cooled water which will freeze on contact with the frozen rain droplet. This frozen rain droplet can continue to grow and form hail. As long as the updraft forces can support or suspend the weight of the hailstone, hail can continue to grow. At the time when the updraft can no longer support the hailstone, it will fall down to the earth.

In the United States, hail causes more than $1 billion in damage to property, crops and livestock each year. Because of the large agricultural industry in east-central Kansas, crop damage and livestock losses due to hail are of great concern to the region. Even relatively small hail can cause serious damage to crops and trees. Vehicles, roofs of buildings and homes, and landscaping are the other things most commonly damaged by hail. Hail has been known to cause injury and the occasional fatality to humans, often associated with traffic accidents.

	Warning Time
Hailstorm	3.43

	Duration
Hailstorm	1.00

Hazard Location

Hailstorms occur over broad geographic regions. The entire planning area, including all participating jurisdictions, is at risk to hailstorms.

Previous Occurrences

The following detail notable regional hail events.

> **April 14, 2012:** A large portion of Kansas was under a High Risk convective outlook from the Storm Prediction Center this day. Severe thunderstorm reports included ping pong ball size hail in numerous Kansas counties throughout the night.
>
> **June 1, 2011:** Numerous strong to severe thunderstorms affected portions of central and east central Kansas during the evening hours.

April 3, 2011: A strong cold front surged into central Kansas during the evening hours that collided with a higher level of moisture. The severe storms brought hail up to two inch size and 70 mph winds to portions of northeast and central Kansas. The hail caused roof damage that was reported from Leavenworth County to Linn County.

July 15, 2007: Scattered thunderstorms rumbled across north central Kansas during the evening hours. Some of the storms produced some hail up to the size of golf balls and winds around 60 mph.

April 23, 2006: Large hail and straight-line winds were reported in northeast Kansas. Hail up to the size of tennis balls was reported.

March 12, 2006: Hail up to the size of tennis balls in Burlingame caused considerable damage to homes and vehicles. Golf ball to tennis ball size hail was reported in Shawnee County.

The following table details NCDC hail event information.

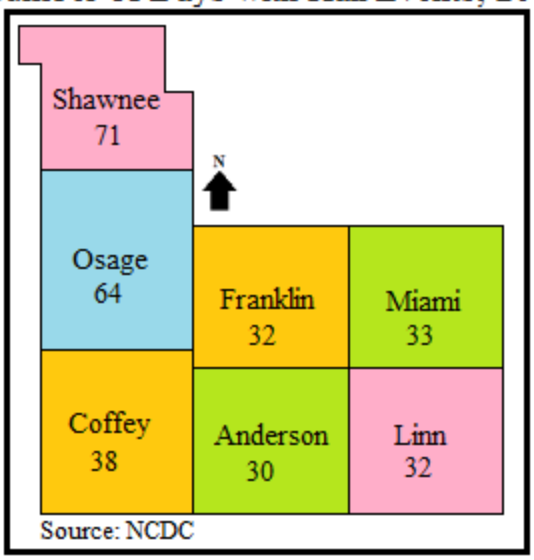
NCDC Hail Events, 2003 - 2013

County	Number of Days with Hail Events	Maximum Amount, in Inches	Property Damages	Crop Damages
Anderson	30	1.75	$0	$0
Coffey	38	2.75	$15,000	$4,000
Franklin	32	2.75	$1,000,000	$0
Linn	32	2.00	$65,000	$0
Miami	33	1.75	$0	$0
Osage	64	3.0	$501,000	$0
Shawnee	71	5.25	$500,000	$75,000
Regional Total	300	2.75 (averge)	$2,081,000	$79,000

Source: NCDC Storm Events Database

The following map show the number of days with hail events in each county from 2003 - 2013, as per NCDC data.

NCDC Number of Days with Hail Events, 2003- 2013



Local Events

The following are reported local events:

July, 2013: City of La Cygne, Linn County: Isolated pockets of large, heavy hail damaged four roof-top air conditioning units on structures housing City Hall and the Community Building. It was calculated that there were $16,000 in insured losses.

June and July, 2013: USD #287, West Franklin, Franklin County: A hailstorm caused $35,000 in damages to school facilities.

May 11, 2011: USD #372 - Silver Lake, Shawnee County: A hailstorm damaged the High School gym roof.

March 1, 2011: City of Richmond, Franklin County: A large hailstorm damaged trees and vehicles.

2008: USD #289, Wellsville, Franklin County: A hailstorm damaged the elementary schools roof.

2007: USD 365 - Garnett, Anderson County: A hailstorm caused $50,000 in damages to school buildings.

May 6, 2007: Miami County: A slow moving cold front combined with an upper level storm system and produced widespread flash flooding and large hail across the area from late on May 5th through May 6th 2007. There were no fatalities, injuries, property, or crop damage reported for the May 6th event.

Hazard Vulnerability and Impact

Based on information provided by the Tornado and Storm Research Organization, the following table describes typical damage impacts of the various sizes of hail.

Tornado and Storm Research Organization Hail Damage Descriptions

Intensity Category	Diameter (inches)	Size Description	Typical Damage Impacts
Hard Hail	0.2-0.4	Pea	No damage
Potentially Damaging	0.4-0.6	Mothball	Slight general damage to plants, crops
Significant	0.6-0.8	Marble, grape	Significant damage to crop and vegetation
Severe	0.8-1.2	Walnut	Severe damage to crops, damage to glass and plastic, paint and wood scored
Severe	1.2-1.6	Pigeon's egg > squash ball	Widespread glass damage, vehicle bodywork damage
Destructive	1.6-2.0	Golf ball > Pullet's egg	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
Destructive	2.0-2.4	Hen's egg	Bodywork of grounded aircraft dented, brick walls pitted
Destructive	2.4-3.0	Tennis ball > cricket ball	Severe roof damage, risk of serious injuries
Super Hailstorms	3.6-3.9	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
Super Hailstorms	4.0+	Melon	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Source: Tornado and Storm Research Organization

The following are the data sources for the rating factors: Social Vulnerability Index for Kansas counties from the Hazards and Vulnerability Research Institute at the University of South Carolina, NCDC storm events (2006 – 2012), U.S. Census Bureau (2010), USDA's Census of Agriculture (2007) and USDA Risk Management Agency (2002 – 2011). Please note that the data on crop losses only applies to insured crops. According to the *2011 Kansas Crop Insurance Profile Report* issued by the USDA Risk Management Agency 82 percent of Kansas' row crops were insured in 2011.

It was determined that since hail is a common occurrence in Kansas, that using historical events and property damages from 2006 forward provides adequate events to describe the hail hazard in Kansas.

Vulnerability Factor Amounts for Hail

County	SoVI Rating (1-5)	Prior Events 2006-2012	Property Damages	Annualized Property Damages	Total Building Exposure ($000)	Population Density	Crop Exposure (2007 Census of Agriculture)	Crop Insurance Paid for Hail	Annualized Crop Insurance Paid
Anderson	3	34	$0	$0	$518,401	14	$33,029,000	$547,573	$54,757
Coffey	3	51	$0	$0	$670,953	13	$25,497,000	$308,570	$30,857
Franklin	2	42	$0	$0	$1,598,004	45	$32,349,000	$477,759	$47,776
Linn	2	39	$60,000	$8,571	$659,126	16	$13,053,000	$406,211	$40,621
Miami	1	29	$0	$0	$2,106,266	55	$27,726,000	$134,158	$13,416
Osage	2	183	$500	$71	$977,110	23	$27,618,000	$133,546	$13,355
Shawnee	2	97	$0	$0	$11,828,241	322	$32,959,000	$176,042	$17,604
Regional Total	-	475	$60,500	$8,643	$18,358,101	-	$192,231,000	$2,183,859	$218,386

Using the above information, a value of 1-10 was assigned to the data obtained for each factor and then weighted equally and factored together to obtain overall vulnerability scores for comparison and to determine the greatest vulnerable counties. The Social Vulnerability Index is in a range of 1- 5. To give Social Vulnerability Index the same weight as the other factors, the numbers were multiplied by two.

Hail Data Rating Determination

Ratings	Social Vulnerability	NCDC Prior Events	Annualized Property Damage	Building Exposure Valuation	Population Density *	Crop Exposure	Annualized Crop Loss
1		18 - 55	0 - $10,000	$117,421 - $4,492,825	1.6 - 116.3	0 - $18,548,500	0 - $100,000
2	1	56 - 90	$10,001 - $50,000	$4,492,826 - $8,868,229	116.4 - 231.1	$18,548,501 - $32,126,000	$100,001 - $300,000
3		91 - 125	$50,001 - $100,000	$8,868,230 - $13,243,634	231.2 - 345.9	$32,126,001 - $45,703,500	$300,000 - $500,000
4	2	126 - 160	$100,001 - $300,000	$13,243,635 - $17,619,039	346 - 460.7	$45,703,501 - $59,281,000	$500,001 - $700,000
5		161 - 195	$300,001 - $500,000	$17,619,040 - $21,994,444	460.8 - 575.5	$59,281,001 - $72,858,500	$700,001 - $900,000
6	3	196 - 230	$500,001 - $700,000	$21,994,445 - $26,369,848	575.6 - 690.3	$72,858,501 - $86,436,000	$900,001 - $1,100,000
7		231 - 265	$700,001 - $900,000	$26,369,849 - $30,745,253	690.4 - 805.1	$86,436,001 - $100,013,500	$1,100,001 - $1,300,000
8	4	266 - 300	$900,001 - $1,100,000	$30,745,254 - $35,120,658	805.2 - 919.9	$100,031,501 - $113,591,000	$1,300,001 - $1,700,000
9		301 - 335	$1,000,001 - $4,000,000	$35,120,659 - $39,496,062	920- 1,034.7	$113,591,001 - $127,168,500	$1,700,001 - $2,100,000
10	5	336 - 370	$4,000,000 - $32,012,357	$39,496,063 - $43,871,468	1,034.8 - 1,149.6	$127,168,501 - $140,746,000	$2,100,000 - $2,300,000

Based on the above ratings system, ranges were applied to each county to determine their potential vulnerability. The following related the scoring to a vulnerability assessment:

- **Low:** Score range of 9 -14
- **Medium-Low:** Score range of 15 - 21
- **Medium:** Score range of 22 - 28
- **Medium-High:** Score range of 29 - 35
- **High:** Score range of 36 - 41

Vulnerability of Regional Counties to Hail

County	SoVi Rating	NCDC Prior Event Rating	Annualized Property Damage Rating	Bldg Exposure Valuation Rating	Population Density Rating	Crop Exposure Rating	Annualized Crop Loss Rating	Overall Vulnerability Rating	Hail Vulnerability
Anderson	6	1	1	1	1	3	1	14	Low
Coffey	6	1	1	1	1	2	1	13	Low
Franklin	4	1	1	1	1	3	1	12	Low
Linn	4	1	1	1	1	1	1	10	Low
Miami	2	1	1	1	1	2	1	9	Low
Osage	4	5	1	1	1	2	1	15	Medium-Low
Shawnee	4	3	1	3	3	3	1	18	Medium-Low

	Magnitude/Severity
Hailstorm	2.75

Future Development

Future development of agricultural resources and/or increases in population would tend to increase the risk of this hazard. However, agriculture has a more significant role and the bigger potential for an economic impact resulting from hail events. Regional counties with a large agricultural base would be more susceptible to hail damage if agricultural development is expanded.

Probability of Future Hazard Events

Severe thunderstorms that create hail events are a common occurrence throughout east-central Kansas. According to the NCDC database, there were 300 days with hail events in east-central Kansas between 2003 and 2013, or an average of 27 events per year. Based on this information, there is a high probability that at least one hail event could occur in east-central Kansas in any given year.

	Probability
Hailstorm	3.94

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Subject	Ranking	Impacts of Hailstorm
Health and Safety of Persons in the Area of the Incident	Severe	Impact of the immediate area could be severe for affected areas and moderate to light for other less affected areas depending on whether individuals are caught outside during the event.
Responders	Minimal	Impact to responders is expected to be non-existent to minimal.
Continuity of Operations	Minimal to Moderate	Temporary relocation may be necessary if government facilities experience damage.
Property, Facilities, and Infrastructure	Severe	Localized impact could be severe to facilities and infrastructure in the incident area. Utility lines, roads, residential and business properties will be most affected.
Delivery of Services	Minimal to Severe	Delivery of services could be affected if there is any disruption to the roads and/or utilities due to damages sustained.
Environment	Severe	Impact could be severe for the immediate impacted area, depending on the size of the event. Impact will lessen as distance increases from the immediate incident area.
Economic Conditions	Minimal to Severe	Local economy and finances may be adversely affected, depending on damages sustained.
Public Confidence in Governance	Minimal to Moderate	Response and recovery will be in question if not timely and effective. Warning systems in place and the timeliness of those warnings could be questioned.

3.7.10 HAZARDOUS MATERIALS

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Hazardous Materials	2.00	2.00	4.00	2.00	**2.30**

Description

Hazardous materials and waste are a concern for east-central Kansas because a sudden accidental or intentional release of such materials can be dangerous to human health, to nearby property, and to the quality of the environment. Such releases may come from both fixed sources, such as a manufacturing or storage facility, or from a transportation source, such as a truck or pipeline. Generally, with a fixed facility, the hazards are pre-identified, and the facility is required by law to prepare a risk management plan and provide a copy to the Local Emergency Planning Committee (LEPC) and local fire departments. Accidental releases may be due to equipment failure, human error, or a natural or manmade hazard event.

Agricultural facilities throughout east-central Kansas are likely to have dangerous materials present that could pose a threat to surrounding populations in the event of an emergency or disaster. Facilities that store or use chemicals considered unusually dangerous to human safety are required by Section 112R of the Clear Air Act Amendments to assess the potential impacts of an accidental release of the chemical at their facility and to prepare risk management plan (RMP). Of particular interest to east-central Kansas is that ammonia is one of the covered hazardous materials. Numerous east-central Kansas ammonia storage and distribution facilities have filed an RMP with the U.S. Environmental Protection Agency (EPA). A database with information about east-central Kansas facilities that have RMPs is available through the EPA.

The primary agency responsible for hazardous materials within the State of Kansas is the KDHE, Division of Environment. The Kansas Response Plan, Emergency Support Function #10 – Oil and Hazardous Materials is another resource for response information.

	Warning Time
Hazardous Materials	4.00

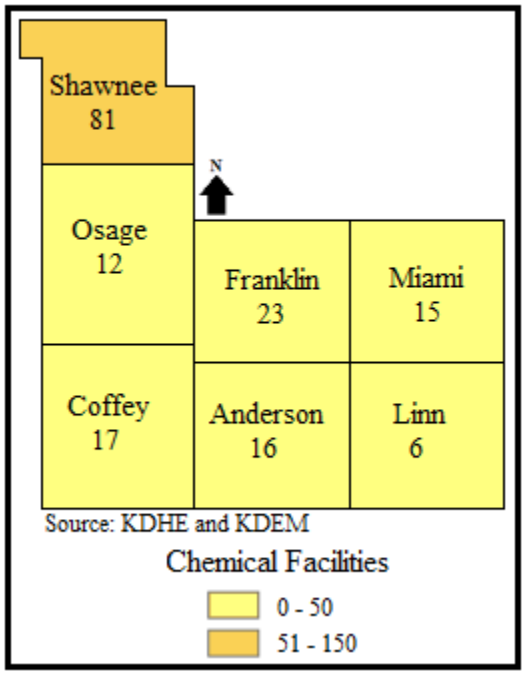
	Duration
Hazardous Materials	2.00

Hazard Location

Hazardous materials pose a threat to communities in east-central Kansas. Localities where hazardous materials are fabricated, processed, and stored as well as those where hazardous waste is treated, stored, and disposed of are most at risk for hazardous materials incidents. Additionally, localities along transportation corridors that carry these materials to their final destinations are also at risk.

In 2011, there were 172 facilities housing hazardous chemicals in east-central Kansas identified by the Community Right to Know Act. The number of facilities is illustrated in the following figure.

Number of Facilities Housing Hazardous Chemicals

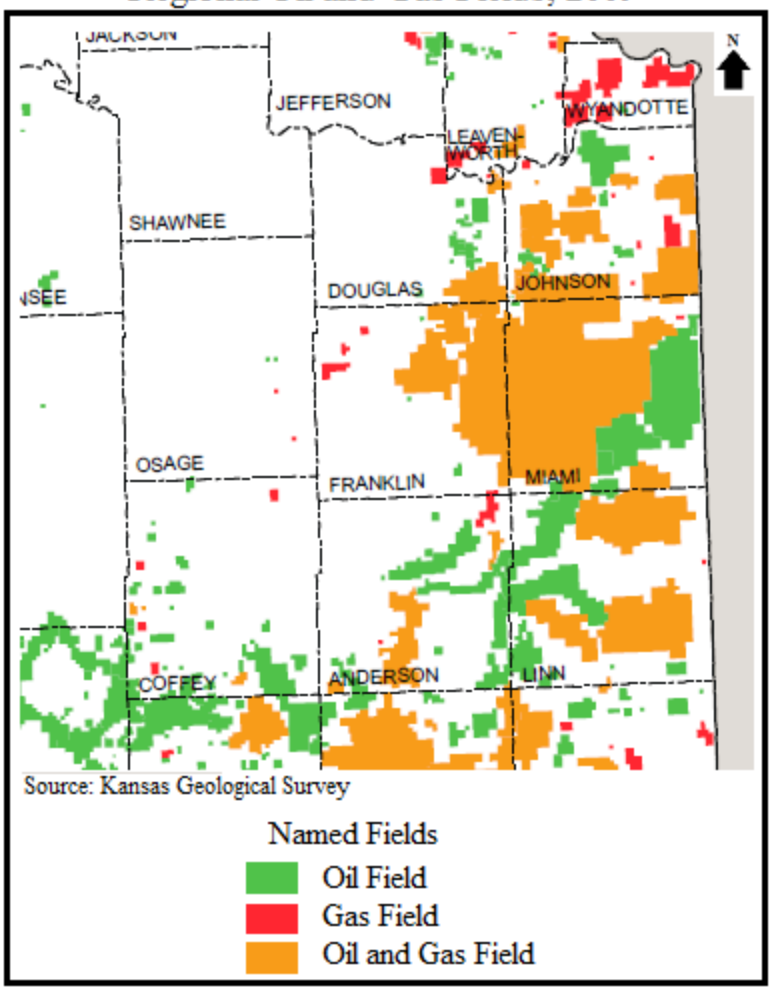


The EPA has indicated that there are no Superfund sites in east-central Kansas. A Superfund site is an uncontrolled or abandoned location where hazardous waste is located which may affect local ecosystems and/or people.

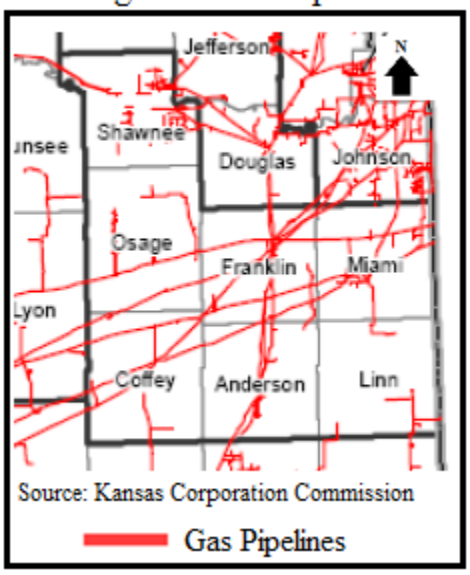
Pipelines and Production Fields

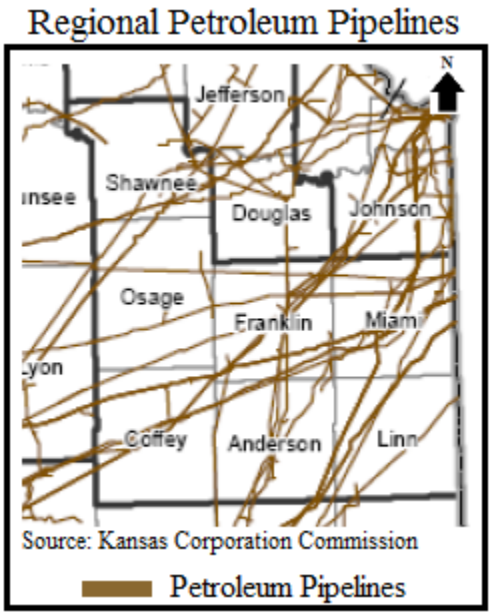
The following figures show production field locations, natural gas and oil pipelines in east-central Kansas.

Regional Oil and Gas Fields, 2009



Regional Gas Pipelines





The following table details the amount of gas and liquid pipeline miles per county in east-central Kansas.

2011 Pipeline Mileage

County	Gas Miles	Liquid Miles
Anderson	134	64
Coffey	230	54
Franklin	374	31
Linn	0	106
Miami	242	192
Osage	84	42
Shawnee	46	132
Subtotal	1110	621

Source: United States Department of Transportation Pipeline and Hazardous Materials Safety Administration

Previous Occurrences and Extent

Regionally, hazardous materials accidents are infrequent events. No notable or sizable hazardous material events have been reported in east-central Kansas.

The following local event was reported:

> **2011: USD #288, Central Heights, Franklin County:** A chemical spill caused a school evacuation.

Hazard Vulnerability and Impact

According to the KDEM, Technological Hazards Section there are over 68 facilities subject to the Risk Management Plan requirements in east-central Kansas as of December 2012. The following facilities are listed and ranked based on population affected according to the Risk Management Plan's Worst Case Scenario. Information concerning these facilities is limited in this plan because of security and liability.

Worst Scenario Facilities, 2012

County	Type of Facility
Coffey	Energy Plant
Shawnee	Water Treatment
Shawnee	Food Manufacturing

Source: KDEM Technological Hazards Section

In estimating potential losses, the most significant loss potential with hazardous materials incidents concerns people. Special populations are particularly vulnerable to the impacts of a hazardous materials incident because of the potential difficulties involved in the evacuation. The following shows the number of special population facilities in each county that is located within ½ mile of a chemical facility. The locations of colleges, educational and correctional institution facilities is from the Kansas Data Access & Support Center (DASC), health facilities is from FEMA's HAZUS-MH 2.1, aging facilities is from KDEM and child care facilities is from KDHE. A comparison was completed with the latitude and longitude of the facilities with the hazardous chemical facilities in Kansas.

Number of Special Population Facilities within One-Half Mile of a Chemical Facility

County	Health Facilities	Colleges	Educational Facilities	Aging Facilities	Child Care	Correctional Institutions
Anderson	1	1	6	3	6	0
Coffey	1	0	7	0	18	1
Franklin	0	0	2	1	16	1
Linn	0	0	3	1	5	0
Miami	2	0	3	2	29	1
Osage	0	0	4	2	20	0
Shawnee	4	6	21	19	130	2
Regional Total	8	7	46	28	224	5

Source: DASC, HAZUS, KDHE, and KDEM

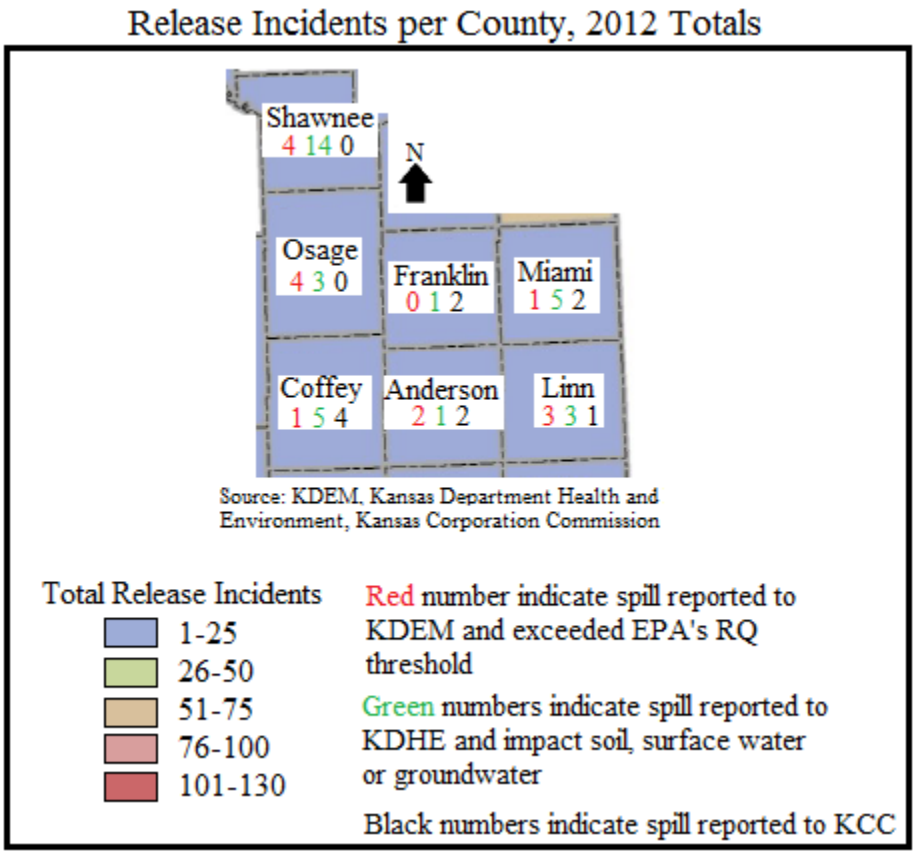
The following table lists the number of hazardous materials incidents, injuries, fatalities and people evacuated from the public and facilities by county in east-central Kansas over the 10-year period of 2003-2012.

Number of Hazardous Material Incidents, Injuries, Fatalities and Evacuations, 2003-2012

Incident County	Incidents	Injuries	Fatalities	People Evacuated
Anderson	11	3	0	2
Coffey	11	2	0	0
Franklin	18	5	0	2
Linn	7	0	0	9
Miami	10	0	0	0
Osage	16	0	0	2
Shawnee	103	4	0	147
Regional Total	176	14	0	162

Source: Kansas Division of Emergency Management, Technological Hazards Section

The following map shows the number of release incidents per county for the year 2012.



In general, the spiller is responsible to report to all the appropriate agencies depending on the material and volume spilled. To satisfy the requirement of Kansas Regulation K.A.R. 28-48 all spills that impact the soils or waters must be reported to the KDHE or in the case that it originates from an oil or gas production leases, be reported to the Kansas Corporation Commission. If the release is not contained or threatens the health or safety of the local population, the LEPC within the county of the release, must be notified first by dialing 911.

Hazardous materials spills and air releases that meet federal reportable quantities and oil and petroleum spills over 110 gallons must also be reported to KDEM.

The following shows that the major cause of hazardous material incidents from 2003-2012.

Causes of Hazardous Materials Incidents in Kansas, 2003-2012

Year	Explosion	Fire	Spill	Equipment Failure	Operator Error	Natural	Dumping	Other
2003	6	14	194	191	29	6	2	51
2004	5	10	58	355	31	2	1	315
2005	1	5	49	181	21	2	6	0
2006	0	3	46	214	18	1	3	89
2007	1	6	41	238	13	3	0	94
2008	3	7	59	168	27	9	1	110
2009	1	7	142	207	25	14	4	112
2010	2	7	234	120	20	2	2	105
2011	1	6	154	91	10	3	2	21
2012	1	8	153	69	23	1	3	94
Total	21	73	1130	1834	217	43	24	991
10 Year Average	2.1	7.3	113	183.4	21.7	4.3	2.4	99.1

Source: Kansas Division of Emergency Management, Technological Hazards Section

The "Managing the Risk: 2011 Kansas Commission on E mergency Planning and Response Annual Report" shows the number of hazardous material releases reported to all three Kansas agencies of KDEM, the KDHE and the KCC.

Reports from the U.S. Department of Transportation's Pipeline & Hazardous Materials Safety Administration provides detail and incident history for the pipeline systems in east-central Kansas between 2001 and 2012. Significant incidents are those incidents reported by pipeline operators with any of the following conditions met:

- Fatality or injury requiring in-patient hospitalization
- $50,000 or more in total costs, measured in 1984 dollars
- Highly volatile liquid releases of five or more barrels or other liquid releases of 50 or more barrels
- Liquid releases resulting in an unintentional fire or explosion

According to these reports there were ten incidents that caused no deaths or injuries and $3,962,565 in damages over the 12 year period (2001-2012). The following table gives the incident details.

Regional Pipeline Incidents, 2001 - 2012

County	Total Natural Gas Transmission Incidents	Total Natural Gas Distribution Incidents	Total Hazardous Liquid Incidents	Total Fatalities	Total Injuries	Total Damage	Gross Barrels Lost	Total Barrels Recovered
Anderson	0	2	0	0	0	$391,390	0	0
Coffey	0	1	0	0	0	$995,348	0	0
Franklin	0	0	1	0	0	$693,181	1,901	1,660
Linn	0	0	1	0	0	$329,750	10	10
Miami	0	0	2	0	0	$228,850	1,719	1,718
Osage	0	0	0	0	0	0	0	0
Shawnee	2	0	0	1	0	$536,284	0	0
Regional Total	2	3	4	1	0	$3,174,803	3,630	3,388

Source: U.S. Department of Transportation's Pipeline & Hazardous Materials Safety Administration

In general, it is difficult to quantify potential losses of hazardous materials events due to the many variables and human elements. For example, a spill of a toxic airborne chemical in a populated area could have great potential for loss of life while a spill of a very small amount of a chemical in a rural agricultural area would be much less costly and possible limited to remediation of soil. Therefore, for the purposes of this plan, the loss estimates will take into account a hypothetical scenario. Please note that the hypothetical scenario is included for illustrative purposes only.

The impact of this type of disaster will likely be localized to the immediate area surrounding the incident. The initial concern will be for people and then the environment. If contamination occurs, the spiller is responsible for the cleanup actions and will work close with local responders, KDHE, KCC, KDEM, and EPA to ensure that cleanup is done safely and in accordance with federal and state laws.

For discussion purposes, the materials needed for a spill at a fixed facility at an easily remediated area are listed in the following table. The costs for the cleanup are estimated from the current State of Kansas Unified HazMat Response Program statewide contract # 35167.

Hypothetical Cost Estimate For Hazardous Materials Spill Remediation

Classification	Rates Per Hour/Unit	Number of Hours/Units	Total Cost
Project Manager	$90.00	24	$2,160
Health & Safety Supervisor	$86.00	24	$2,064
Environmental Tech	$50.00	12	$600
Foreman	$55.00	24	$1,320
Equipment Operator	$56.50	24	$1,356
Laborer	$45.00	24	$1,080
Truck, 4 wheel drive	$680/wk	1	$680
Backhoe, Case 416B	$320.00/day	2	$640
Forklift, 3 ton all terrain	$160.00/day	2	$320
Skimmer	$250.00/day	2	$500
Pump, 4”	$80.00/day	3	$240
Drums, chemical, 17H or E	$90.00	25	$2,250
Drums, 95 gallon	$295.00	25	$7,375
Vermiculite per bag	$15.00	6	$90
Acid Suits	$70.00/each	6	$420
Gloves	$4.00/pair	30	$120
Total			$21,215

Source: State of Kansas Unified HazMat Response Program statewide contract # 35167

	Magnitude/Severity
Hazardous Materials	2.00

Future Development

People, livestock and vegetation in close proximity to facilities fabricating, processing and storing as well as those where hazardous waste is treated, stored and disposed of are most at risk for hazardous materials incidents. Additionally, localities along transportation corridors that carry these materials to their final destinations are at risk. Populations downstream, downwind and downhill of a released substance are particularly vulnerable. Depending on the characteristics of the substance released, a larger area may be in danger from explosion, absorption, injection or inhalation. Occupants of areas previously contaminated by a persistent material may also be harmed either directly or through consumption of contaminated food and water. As the infrastructure and population of large urban centers of east-central Kansas increase, along with the number and type of hazardous chemicals stored and transported through the region, the amount of potential losses could increase.

Probability of Future Hazard Events

Based on the limited historical occurrence future major events is unlikely. However, as the infrastructure and population of large urban centers of east-central Kansas increase, along with the number and type of hazardous chemicals stored and transported through the region, the amount of potential losses could increase.

	Probability
Hazardous Materials	2.00

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Hazardous Material Event Consequence Analysis

Subject	Ranking	Impacts of Hazardous Material Event
Health and Safety of Persons in the Area of the Incident	Severe	Impact of the immediate area could be severe for affected areas.
Responders	Severe	Impact to responders is expected to be severe.
Continuity of Operations	Minimal to Moderate	Temporary relocation may be necessary if government facilities experience damage.
Property, Facilities, and Infrastructure	Severe	Localized impact could be severe in the incident area. Streams, open bodies of water, aquifers, roads, residential and business properties will be most affected.
Delivery of Services	Minimal to Severe	Delivery of services could be affected if there is any disruption to the roads and/or utilities.
Environment	Severe	Impact could be severe for the immediate area. Impact will lessen with distance.
Economic Conditions	Minimal to Severe	Local economy and finances may be adversely affected, depending on damages.
Public Confidence in Governance	Minimal to Moderate	Response and recovery will be in question if not timely and effective. Warning systems and the timeliness of those warnings could be questioned.

3.7.11 LAND SUBSIDENCE

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Land Subsidence	1.00	1.00	1.86	4.00	**1.43**

Description

Land subsidence is caused when the ground above manmade or natural voids collapses. Subsidence can be related to mine collapse, water and oil withdrawal, or natural causes such as shrinking of expansive soils, salt dissolution (which may also be related to mining activities), and cave collapses. The surface depression is known as a sinkhole. If sinkholes appear beneath developed areas, damage or destruction of buildings, roads and rails, or other infrastructure can result. The rate of subsidence, which ranges from gradual to catastrophic, correlates to its risk to public safety and property damage.

The development of sinkhole and subsidence areas can be grouped into three major categories:

- Natural dissolution of soluble minerals
- Extraction of minerals by either solution mining or shaft mining
- Downward drainage of fresh water, via a drill hole or unplugged oil or gas well which penetrates a soluble mineral formation and has an outlet for the solution cavity water to be disposed.

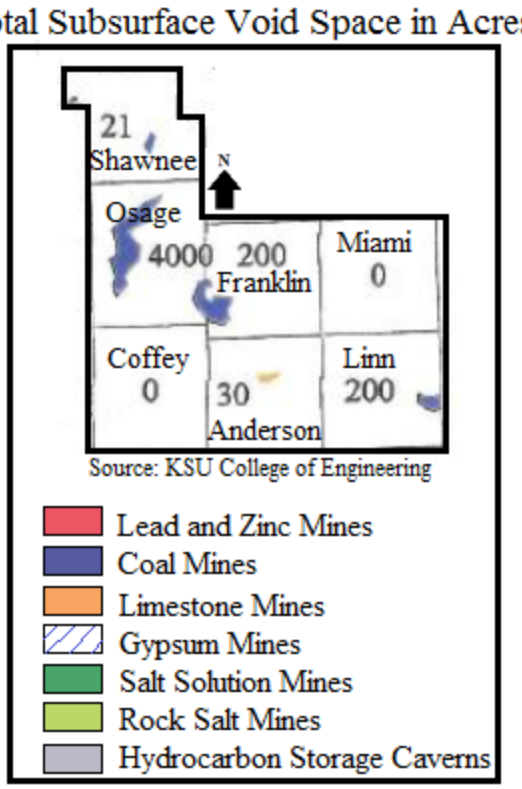
Major materials or minerals present in east-central Kansas that are associated with subsidence and sinkhole development include salt, limestone and dolomite, gypsum, coal, lead and zinc. Some isolated incidents of subsidence have been associated with high volume pumping of water wells.

	Warning Time
Land Subsidence	1.86

	Duration
Land Subsidence	4.00

Hazard Location

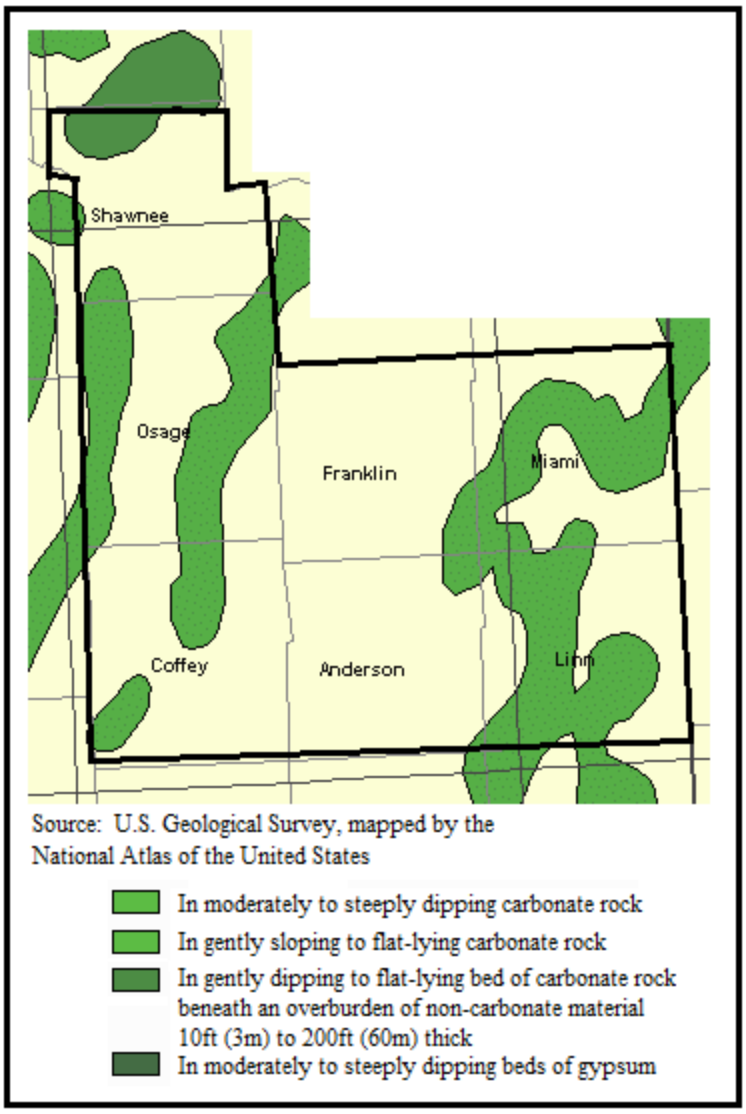
The Kansas Department of Health and Environment in 2006 prepared a report on "Subsurface Void Space and Sinkhole/Subsidence Area Inventory for the State of Kansas." The report inventoried subsurface void space from oil and gas exploration and production, natural sources, shaft mining, and solution mining. The total void space inventory for all sources in the state is 119,136 acres. The distribution of total acres and major cause of void spaces are shown for each county in the following map.



Areas of karst, a terrain or type of topography generally underlain by soluble rocks, such as limestone, gypsum, and dolomite, in which the topography is chiefly formed by dissolving the rock, are also particularly prone to sinkholes.

The following map illustrates the location of karst features and features analogous to karst in east-central Kansas. The green areas shown in the map show fissures, tubes, and caves generally less than 1,000 feet long with 50 feet or less vertical extent in gently dipping to flat-lying carbonate rock. Brown areas have similar features in gently dipping to flat lying gypsum beds. Light pink colored areas are features analogous to karst with fissures and voids present to a depth of 250 feet or more in areas of subsidence from piping in thick unconsolidated material. Darker pink areas contain fissures and voids (analogous to karst) to a depth of 50 feet. There are limited documented problems associated with natural limestone subsidence and sinkholes in east-central Kansas.

Regional Karst Features



Previous Occurrences and Extent

No notable incidents of land subsidence have been recorded for the region.

Hazard Vulnerability and Impact

Data was obtained from KDHE for the following:

- Lead and Zinc Mines that required filling
- Coal Subsidence Projects
- Coal Emergency Program Projects

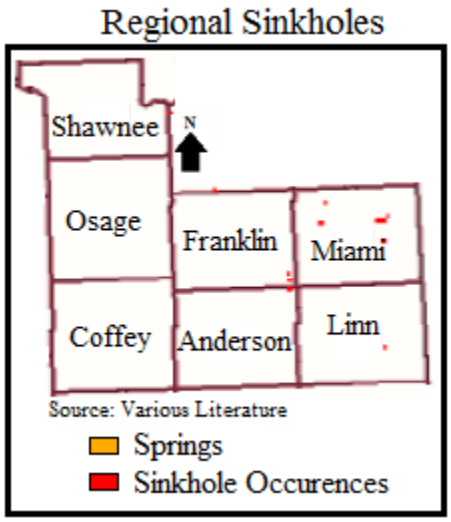
This emergency program provides for the remediation of sites which are an immediate threat to the health and safety of the general public. The following table illustrates the number of projects and associated costs for applicable regional counties

Coal Emergency Fund Expenditures 1980 to October 2012

County	Number of Projects	Cost
Linn	2	$0
Osage	3	$0
Shawnee	1	$0

Source: KDHE Surface Mining Section

The following map illustrates known or documented sinkhole occurrences and the locations of springs that may increase the likelihood of sinkholes. Colored areas show one-mile square sections of land in the east-central Kansas where sinkhole locations have been documented in literature. Sections in red indicate sinkhole occurrences (yellow indicates springs). In general, areas of documented previous occurrences of sinkholes are in areas with void space from mines, karst features, and the "lost circulation zone".



With the known number of acres in each risk category for each county with documented subsurface void spaces, a weighted vulnerability calculation was completed. Acreage in risk Category I (High Risk) received a multiplier of three, acreage in risk Category II (Moderate Risk) received a multiplier of two and acreage in risk Category III (Low Risk) received a multiplier of one.

A high risk classification indicates one or more of the following: the source material very soluble, source material thickness may leave large voids, depth of source material less than 100 feet, mining operations have left a large vertical void space (4 - 300 feet), mining operations have large vertical shafts or bore holes associated with the mining techniques, mined area has a large void space to pillar ratio, void space in the mine has filled with water, mine floor susceptible to collapse or loading failure, cap rock not competent for long term support, mine pillars susceptible to deterioration and future collapse, mine roof less than 60 feet in thickness,

bedrock material comprising the mine roof is not competent material for long-term stability, horizontal or inclined mine shafts with shallow or thin overburden, and areas in the subsurface where support pillars in columns have been mined or removed.

A moderate risk classification indicates one or more of the following: depth of mine floor greater than 125 feet, void space to pillar ration (80 to 90%), vertical opening 4 feet or greater, water filled void increases subsidence risk, overlying bedrock material very competent, numerous mine shafts or boreholes associated with mining technique, and support columns or pillars susceptible to serious deterioration when void space is filled with water.

A low risk classification indicates one or more of the following: small vertical void space, void space to pillar ratio good (75 to 80%), vertical shafts and bore holes are in good condition, depth of mined material relatively deep, +/- 150 feet, competent cap rock over void space, long wall mining method allows slow subsidence with minimal vertical opening; surface subsidence is minimal to undetected, mine opening is dry, no pillar deterioration, and mine area has little risk of sudden subsidence.

Subsurface Void Space Vulnerability Analysis

County	Coal Category II	Limestone Category I	Weighted Calculation
Anderson	0	30	30
Coffey	0		
Franklin	200	0	200
Linn	200	0	200
Osage	4,000	0	4,000
Shawnee	21	0	21
Regional Total	4,421	30	4,451

Source: KDHE, "Subsurface Void Space and Sinkhole/Subsidence Area Inventory for the State of Kansas" 2006. Data tabulated and assigned weighted scores in individual categories.

	Magnitude/Severity
Land Subsidence	1.00

Future Development

Future development would tend to increase the risk of this hazard, especially on areas of known subsidence or with subsidence potential.

Probability of Future Hazard Events

Based on historical records, land subsidence events occur in east-central Kansas on a very sporadic basis. However, due to underlying surface conditions and activities a small probability of future events exists.

	Probability
Land Subsidence	1.00

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Land Subsidence Consequence Analysis

Subject	Ranking	Impacts of Land Subsidence
Health and Safety of Persons in the Area of the Incident	Moderate to Severe	Local impact expected to be moderate to severe for the incident area.
Responders	Minimal	Impact to responders would be minimal.
Continuity of Operations	Minimal	Minimal expectation of execution of the COOP, unless a facility is impacted.
Property, Facilities, and Infrastructure	Severe	Localized impact to facilities and infrastructure in the incident area has the potential to do severe damage.
Delivery of Services	Minimal	Impacts to the delivery of services could be severe if roads/utilities are affected. Otherwise impact would be non-existent to minimal.
Environment	Minimal	Impact to the area would be minimal.
Economic Conditions	Minimal	Impacts to the economy will depend on the severity of the damage.
Public Confidence in Governance	Minimal to Severe	Local development policies will be questioned.

3.7.12 LANDSLIDE

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Landslide	1.00	1.00	3.71	1.43	1.45

Description

A landslide is the downhill movement of masses of soil and rock by gravity. The basic ingredients for landslides are gravity, susceptible soil or rock, sloping ground, and water. Typically, as the slope angle increases, so does the potential for landslides. Anything that increases the slope angle can trigger a landslide, including a stream actively eroding a hill or construction practices. Landslides may occur when soil on hillsides is saturated following extended periods of rainfall or snow melt, and may also be caused by:

- Earthquakes
- Fire (and resulting loss of vegetation)
- Excavation and mining
- Irrigation
- Construction activities

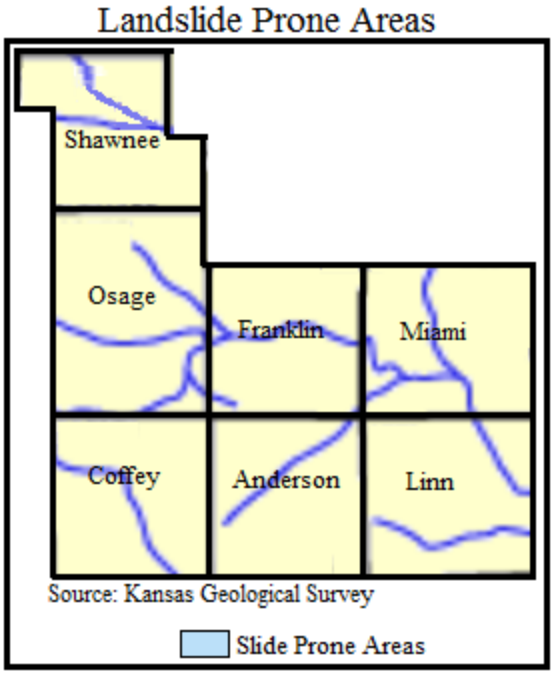
Landslides can damage or destroy structures, roadways, and utilities as well as block roadways with debris.

	Warning Time
Landslide	3.71

	Duration
Landslide	1.43

Hazard Location

Areas prone to landslides can cover broad geographic regions, but occurrences are generally localized. The entire planning area, including all participating jurisdictions, is potentially at risk to landslides. However, landslides require an earth or rock covered slope and the Kansas Geological Survey has not identified any slide prone areas in the region, as indicated in the map below.



Previous Occurrences and Extent

There have been no notable recorded landslide events in east-central Kansas:

Hazard Vulnerability and Impact

Losses due to landslides in east-central Kansas will continue in those areas of the region that are prone to this hazard. Landslide losses are primarily related to damage to property. However, if a sudden landslide impacts an inhabited structure, injuries or deaths could occur. Historically, landslides in east-central Kansas have been isolated events impacting a few properties or a particular area. Often, damages in terms of estimated losses are not reported. Additionally, there is not a repository for damages to be reported, other than NCDC. The NCDC database does not include any previous landslide events in Kansas. This is likely because the events are generally isolated and do not impact large areas.

If construction is occurring in or near landslide hazard areas, more structures/population will be at risk to damage/injury from landslides. The effects of landslides on people and structures can be lessened by total avoidance of landslide hazard areas or by restricting, prohibiting, or imposing conditions on hazard-zone activity. The hazard from landslides can be reduced by avoiding construction on steep slopes and existing landslides, or by stabilizing the slopes. Stability increases when ground water is prevented from rising in the landslide mass by covering the landslide with an impermeable membrane, directing surface water away from the landslide, draining ground water away from the landslide, and minimizing surface irrigation. Slope stability is also increased when a retaining structure and/ or the weight of a soil/rock berm are placed at the toe of the landslide or when mass is removed from the top of the slope.

It is not possible at this time to determine quantitative estimates for potential losses associated with the landslide hazard as there is no centralized data source upon which to base analysis.

	Magnitude/Severity
Landslide	1.00

Future Development

Future development in landslide prone areas would tend to increase the risk of this hazard. However, no major areas have been identified with a landslide risk in the region.

Probability of Future Hazard Events

There have been no reported landslide events in the region in the past 10 years. This would equate to approximately zero events per year. As such, it is unlikely that a future landslide event will cause a measurable impact.

	Probability
Landslide	1.00

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Landslide Consequence Analysis

Subject	Ranking	Impacts of Landslide
Health and Safety of Persons in the Area of the Incident	Moderate to Severe	Localized impact could be moderate to severe for the incident area.
Responders	Minimal	Impact to responders would be minimal.
Continuity of Operations	Minimal	Minimal expectation of execution of the COOP, unless a facility is impacted.
Property, Facilities, and Infrastructure	Minimal to Severe	Localized impact to facilities and infrastructure in the incident area has the potential to do severe damage if they are on, in, or near the landslide.
Delivery of Services	Minimal	Impacts to the delivery of services could be severe if roads/utilities are affected. Otherwise impact would be non-existent to minimal.
Environment	Minimal	Impact to the area would be minimal other than the immediate area.
Economic Conditions	Minimal	Impacts to the economy will depend on the severity of the damage, i.e., are roads blocked, did any businesses get caught in the landslide.
Public Confidence in Governance	Minimal to Severe	Local development policies will be questioned.

3.7.13 LIGHTNING

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Lightning	2.29	1.29	3.14	1.00	1.99

Description

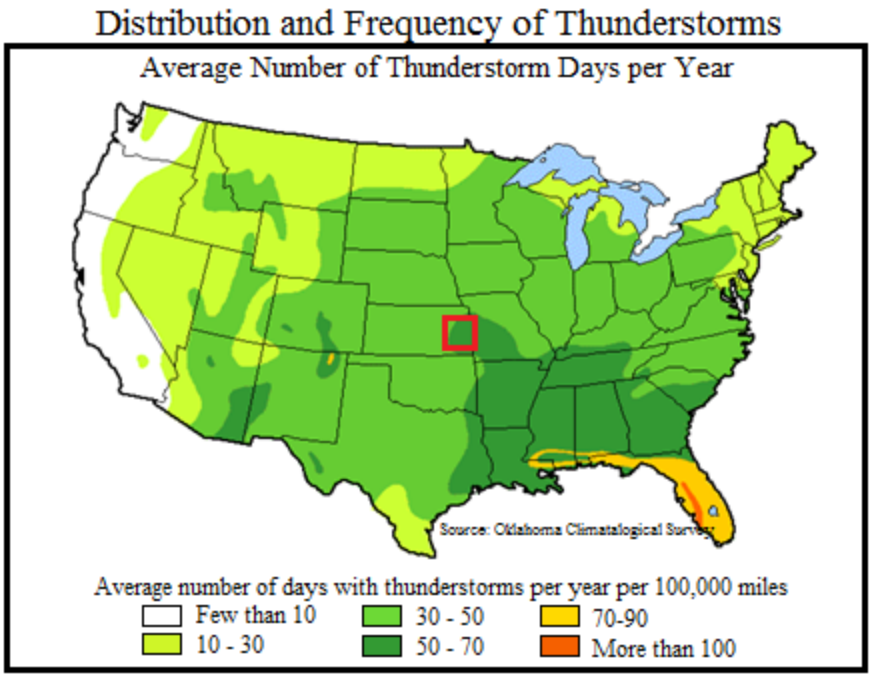
Lightning is a discharge of atmospheric electricity that is triggered by a buildup of differing charges within a cloud. According to the NWS, lightning is one of the most underrated severe weather hazards and is the second deadliest weather killer in the United States. Of the estimated 1,000 people who are struck by lightning each year in the United States, only 10 percent are killed, but survivors may suffer life-long disabilities.

	Warning Time
Lightning	3.14

	Duration
Lightning	1.00

Hazard Location

Severe thunderstorms strike east-central Kansas regularly, with accompanying lightning that can cause injury, death, property damage and wildfires. The widespread and frequent nature of thunderstorms makes lightning a relatively common occurrence. Of particular concern to east-central Kansas is protection of facilities and communications systems that are important to emergency response operations, protection of public health and maintenance of the region's economy. Most of east-central Kansas has an average 30-50 thunderstorm days per year.



Lightning occurs over broad geographic regions. The entire planning area, including all participating jurisdictions, is at risk to lightning.

Previous Occurrences and Extent

Information measured by the National Lightning Detection Network between 1997 and 2011 ranks Kansas 16th among the continental states in terms of cloud-to-ground flash densities with 934,368 flashes per year (11.4 flashes per square mile). According to the NCDC Storm Events database, there were 20 lightning events in east-central Kansas between 2003 and 2013 resulting on $610,000 in property damage**.** The NCDC receives storm data from the NWS, which receives information from a variety of sources, which include but are not limited to county, state, and federal emergency management officials, local law enforcement officials, Skywarn spotters, NWS damage surveys, newspaper clipping services, the insurance industry and the general public. Reporting of events and the historic events detailed here are likely not a true reflection of all the damaging lightning strikes.

NCDC Lightning Events 2003 - 2013

County	Total Events	Property Damage	Crop Damage	Deaths
Anderson	1	$50,000	$0	0
Coffey	4	$78,000	$0	2
Franklin	2	$8,000	$0	0
Linn	0	$0	$0	0
Miami	2	$301,000	$0	0
Osage	2	$0	$1,000	1
Shawnee	9	$173,000	$0	1
Regional Total	20	$610,000	$1,000	4

Source: NCDC Storm Events Database, http://www.ncdc.noaa.gov/stormevents/

According to the USDA's Risk Management Agency, there have not been any payments for insured crop losses specifically for lightning. The NCDC database lists $1,000 for crop damages in the 2003-2013 timeframe.

Based on NCDC data, showing $611,000 in damages over the 11 year period from 2003 to 2013, east-central Kansas can expect approximately $55,545 in lightning-related losses each year.

According to the NCDC, there have been four reported deaths or injuries from lightning in east-central Kansas from 2003 to 2013.

Local Events

Notable local lightning events include:

August 13, 2013: USD # 454 - Burlingame, Osage County: A lightning strike damaged a transformer causing the delay of the start of school.
March, 2013: City of Rossville, Shawnee County: A lightning strike caused $6,000 in damages to a sewage lift station.

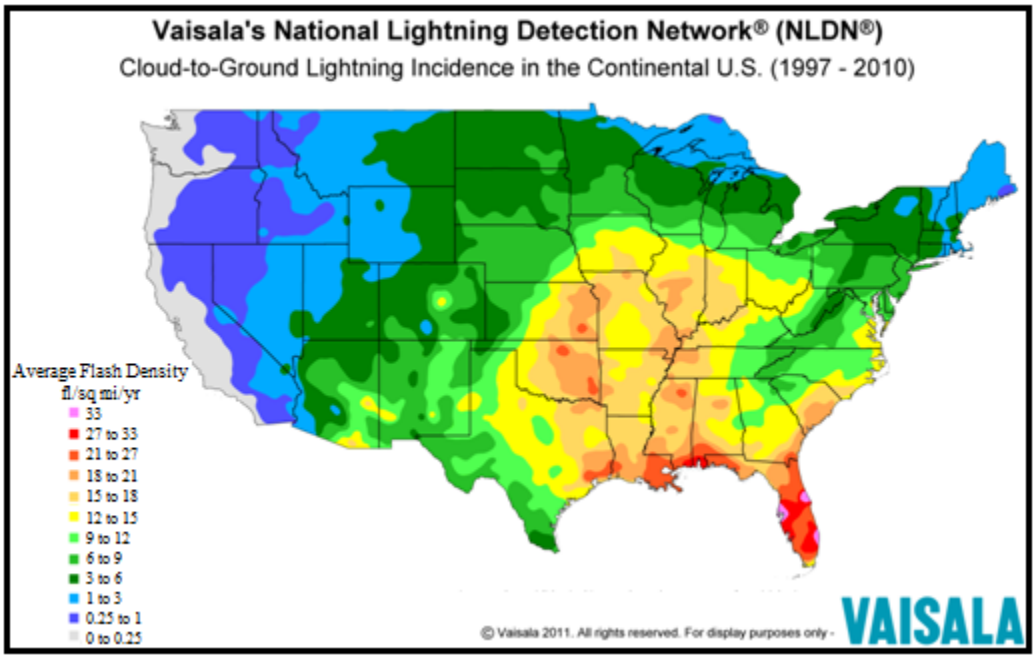
2012: USD #289, Wellsville, Franklin County: Lightning damaged the school district's weather station.

June, 2010: USD #456 - Marais des Cygnes Valley, Osage County: A lightning strike caused around $20,000 in damages to the telephone system and the computer networking system.

March, 2010: USD #421 - Lyndon, Osage County: A lightning strike damaged the high school building causing roof and brick damage.

Hazard Vulnerability and Impact

In general, the frequency of occurrence of lightning is similar to the pattern of thunderstorm frequency. Data suggests that there are 18 to 27 flashes per square mile per year in east-central Kansas. The following figure, which is based on data from 1997 to 2010, shows that the distribution of lightning throughout the U.S.



The statistical analysis method was used to refine and assess the relative vulnerability of each of region's counties to lightning. The region assigned ratings to pertinent factors including social vulnerability index, prior events, prior annualized property damage, building exposure valuation, population density and crop exposure (annualized crop losses were not used since USDA did not have insured crop loss amounts to use in the tabulation).

The following information was used for this analysis:

- Social Vulnerability Index for Kansas from the Hazards and Vulnerability Research Institute at the University of South Carolina
- National Climatic Data Center storm events 2000 – 2012
- U.S. Census Bureau (2010)
- USDA's Census of Agriculture (2007).

Vulnerability Factor Amounts for Lightning

County	SoVI Rating (1-5)	Prior Events 2003-2013	Property Damages	Annualized Property Damages	Total Building Exposure ($000)	Population Density	Crop Exposure (2007 Census of Agriculture)
Anderson	3	1	$50,000	$7,143	$518,401	14	$33,029,000
Coffey	3	2	$0	$0	$670,953	13.7	$25,497,000
Franklin	2	1	$1,000	$143	$1,598,004	45.5	$32,349,000
Linn	2	0	$0	$0	$659,126	16.3	$13,053,000
Miami	1	1	$1,000	$143	$2,106,266	57	$27,726,000
Osage	2	1	$0	$0	$977,110	23.1	$27,618,000
Shawnee	2	5	$31,000	$4,429	$11,828,241	327.1	$32,959,000
Regional Total	-	11	$83,000	$11,857	$18,358,101	-	$192,231,000

Using the above information, a value of 1-10 was assigned to the data obtained for each factor and then weighted equally and factored together to obtain overall vulnerability scores for comparison and to determine the greatest vulnerable counties. The Social Vulnerability Index is in a range of 1- 5. To give Social Vulnerability Index the same weight as the other factors, the numbers were multiplied by two.

Lightning Data Rating Determination

Ratings	Social Vulnerability	NCDC Prior Events	Annualized Property Damage	Building Exposure Valuation	Population Density *	Crop Exposure
1		1	$143 - $3,600	$117,421 - $4,492,825	1.6 - 116.3	0 - $18,548,500
2	1	2	$3,601 - $7,200	$4,492,826 - $8,868,229	116.4 - 231.1	$18,548,501 - $32,126,000
3		3	$7,201 - $10,800	$8,868,230 - $13,243,634	231.2 - 345.9	$32,126,001 - $45,703,500
4	2	4	$10,801 - $14,400	$13,243,635 - $17,619,039	346 - 460.7	$45,703,501 - $59,281,000
5		5	$14,401 - $18,000	$17,619,040 - $21,994,444	460.8 - 575.5	$59,281,001 - $72,858,500
6	3	6	$18,001 - $21,600	$21,994,445 - $26,369,848	575.6 - 690.3	$72,858,501 - $86,436,000
7		n/a	$21,601 - $ 25,200	$26,369,849 - $30,745,253	690.4 - 805.1	$86,436,001 - $100,013,500
8	4	n/a	$25,201 - $28,000	$30,745,254 - $35,120,658	805.2 - 919.9	$100,031,501 - $113,591,000
9		n/a	$28,801 - $33,000	$35,120,659 - $39,496,062	920- 1,034.7	$113,591,001 - $127,168,500
10	5	n/a	$33,001 and up	$39,496,063 - $43,871,468	1,034.8 - 1,149.6	$127,168,501 - $140,746,000

Note: n/a relates to not applicable because no county had more than 5 prior events

Based on the above ratings system, ranges were applied to each county to determine their potential vulnerability. The following related the scoring to a vulnerability assessment:

- **Low:** Score range of 7 -13
- **Medium-Low:** Score range of 14 - 18
- **Medium:** Score range of 19 - 23
- **Medium-High:** Score range of 24 - 28
- **High:** Score range of 29 - 34

Vulnerability of Kansas Counties to Lightning

County	SoVi Rating	NCDC Prior Event Rating	Annualized Property Damage Rating	Bldg Exposure Valuation Rating	Population Density Rating	Crop Exposure Rating	Overall Vulnerability Rating	Lightning Vulnerability
Anderson	6	1	2	1	1	3	14	Medium-Low
Coffey	6	2	0	1	1	2	12	Low
Franklin	4	1	1	1	1	3	11	Low
Linn	4	0	0	1	1	1	7	Low
Miami	2	1	1	1	1	2	8	Low
Osage	4	1	0	1	1	2	9	Low
Shawnee	4	5	2	3	3	3	20	Medium

	Magnitude/Severity
Lightning	1.29

Future Development

Future development would tend to increase the risk of this hazard.

Probability of Future Hazard Events

Severe thunderstorms and the associated lightning events will continue to cause damage to anything exposed to the weather elements. Lightning can damage many types of infrastructure, including electric lines/poles/transformers, telephone lines and radio communication equipment. These pieces of infrastructure are needed by both first response agencies and the general community to ensure safe transport, habitable homes and good communications abilities.

Residential and business properties are liable to receive damage either as a result of a lightning strike causing a fire or other type of direct damage or by overloading electronic equipment. The latter concern is especially important to business and government, which rely on computers and other electronic equipment for day to day operations. Virtually all structures and electrical components in east-central Kansas are vulnerable to lightning. Fires, electrical fires, electricity loss and damage to equipment are a few of the problems associated with lightning strikes.

Any increase in development will lead to a greater exposure to this hazard.

	Probability
Lightning	2.29

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Lightning Consequence Analysis

Subject	Ranking	Impacts of Lightning
Health and Safety of Persons in the Area of the Incident	Minimal to Moderate	Impact to the health and safety of persons could be minimal to moderate if within the incident area.
Responders	Minimal	Impact to responders is expected to be minimal unless responders live within the affected area.
Continuity of Operations	Minimal	Temporary relocation may be necessary if government facilities experience damage.
Property, Facilities, and Infrastructure	Minimal to Severe	Impact could be severe if property, facilities or infrastructure take a direct hit which could result in fire or destruction.
Delivery of Services	Minimal to Severe	Delivery of services could be affected if there is any disruption to the roads and/or utilities due to damages sustained.
Environment	Minimal to Severe	Impact will be isolated, yet severe to any trees, animals, etc., that takes a direct hit, or is in the path of any fire that may be generated due to the lighting strike.
Economic Conditions	Minimal	Local economy impact should be fairly minimal, unless the lightening causes fires which damage businesses and stops revenue.
Public Confidence in Governance	Minimal	Response and recovery will be in question if not timely and effective, specifically if electricity and other utilities are affected.

3.7.14 MAJOR DISEASE OUTBREAK

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Major Disease Outbreak	1.00	3.00	1.00	4.00	1.90

Description

Infectious diseases are human illnesses caused by microscopic agents, including viruses, bacteria, parasites, and fungi or by their toxins. They may be spread by direct contact with an infected person or animal, ingesting contaminated food or water, vectors such as mosquitoes or ticks, contact with contaminated surroundings such as animal droppings, infected droplets, or by aerosolization

While there are a number of biological diseases/agents that are of concern to east-central Kansas, the following categories of disease are being addressed in this plan: vaccine preventable disease, food borne disease, and community associated infections as having significant recurring impact on the morbidity of east-central Kansans. The following descriptions are general and it should be noted that individuals may experience more or less severe consequences based upon their own circumstances.

Vaccine Preventable:

- **Measles:** a respiratory disease caused by a virus spread through the air by breathing, coughing or sneezing. It is so contagious that any child who is exposed to it and is not immune will probably get the disease.

- **Mumps:** a contagious disease that causes fever, headache, muscle aches, tiredness, and loss of appetite, and is followed by swelling of salivary glands. Most people with mumps recover fully.

- **Pertussis:** a highly communicable, vaccine-preventable disease that is typically results in severe coughing, whooping, and vomiting. Major complications are most common among infants and young children and include hypoxia, apnea, pneumonia, seizures, encephalopathy, and malnutrition. Young children can die from pertussis, with most deaths occur among unvaccinated children or children too young to be vaccinated.

- **Influenza:** a viral infection of the nose, throat, bronchial tubes, and lungs. There are two main types of virus, A and B, with each type including many different strain which tend to change each year. Influenza is highly contagious and is easily transmitted through contact with droplets from the nose and throat of an infected person during coughing and sneezing.

- **Pandemic Influenza:** A pandemic influenza is a influenza virus that causes a global outbreak of serious illness. A influenza pandemic occurs when a new virus emerges for which people have little or no immunity, and for which there is no

vaccine. Infection rate and mortality may be markedly higher than a n ormal influenza.

Food Borne Disease:

- **Norovirus:** a group of related viruses that cause acute gastroenteritis in humans, including diarrhea, vomiting, and stomach pain. Noroviruses are transmitted primarily through the fecal-oral route, either by consumption of fe cal contaminated food or water or by direct person-to-person spread.

- **Salmonellosis:** an infection with bacteria that causes diarrhea, fever, and abdominal cramps. The illness usually lasts four to seven days, and most persons recover without treatment.

	Warning Time
Major Disease Outbreak	1.00

	Duration
Major Disease Outbreak	4.00

Hazard Location

The entire planning area is susceptible to a disease outbreak. However, more densely populated areas are more susceptible to the diseases that are transmitted person to person.

Previous Occurrences and Extent

There have been four a pandemics in the past century that have impacted east-central Kansas:

1918–19: Spanish flu (H1N1): This flu is estimated to have sickened 20-40% of t he world's population, causing the death of 500,000 Americans. Recently, the origin of the pandemic was traced to an outbreak of influenza in Haskell County, Kansas, in January 1918. By the end of 1918, the Kansas death toll was around 12,000.

1957–58: Asian flu (H2N2): This virus was quickly identified because of advances in technology, and a vaccine was produced. In total, there were about 70,000 deaths in the United States. Information about how this pandemic affected east-central Kansas was not available.

1968–69: Hong Kong flu (H3N2): This strain caused approximately 34,000 deaths in the United States. It was first detected in Hong Kong in early 1968 and spread to the United States later that year.

2009 H1N1 Influenza: The 2009 H1N1 Pandemic Influenza began in Kansas with the first identified case on April 24, 2009. Kansas was the third state to positively identify this novel strain of influenza.

East-central Kansas is also impacted by a variety of communicable and non-communicable diseases. The following tables provide the numbers of reportable diseases by county from 2002 to 2011. Not all diseases are listed.

2002 - 2011 Reportable Diseases

County	Amebiasis	Arboviral Disease	Botulism	Campylobacteriosis	Chlamydia	Cholera	Cryptosporidiosis	Ehrlichiosis/Anaplasmosis	Giardiasis	Gonorrhea	H. influenzae, invasive	Hemolytic Uremic Syndrome (HUS)	Hepatitis A	Hepatitis B, acute	Hepatitis C, acute	HIV/AIDS	Legionellosis	Listeriosis
Anderson	0	0	0	1	24	0	0	0	1	1	0	0	0	0	0	-	0	0
Coffey	0	0	0	0	15	0	0	0	1	1	0	0	0	0	0	-	0	0
Franklin	0	0	0	3	95	0	0	0	4	7	0	0	0	0	0	-	0	0
Linn	0	0	0	2	14	0	1	1	1	1	0	0	1	0	0	-	0	0
Miami	0	0	0	3	58	0	1	0	0	4	0	0	0	0	0	-	0	0
Osage	0	0	0	0	32	0	0	0	2	6	0	0	0	0	0	-	0	0
Shawnee	0	0	0	9	816	0	0	0	5	253	0	0	0	0	0	13	0	0
Regional Total	0	0	0	18	1,054	0	2	1	14	273	0	0	1	0	0	13	0	0

Source: Kansas Department of Health and Environment

2002 - 2011 Reportable Diseases Continued

County	Lyme Disease	Malaria	Meningitis, non-HiB, non-Neisseria	Meningococcal Disease	Mumps	Pertussis	Rabies, animal	Salmonellosis	Shiga toxin-producing E. coli	Shigellosis	Strep., Group A, invasive	Strep. pneumoniae, invasive	Syphilis, 1° & 2°	Syphilis, early latent	TSE or Prion Disease	Tuberculosis, active	Tularemia	Typhoid Fever	Varicella
Anderson	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
Coffey	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0
Franklin	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	0	0	0
Linn	0	0	0	0	0	0	0	1	2	0	0	0	0	1	0	0	0	0	0
Miami	0	0	0	0	0	0	0	0	8	1	0	0	1	0	0	0	0	0	0
Osage	0	0	0	1	0	0	7	1	5	0	0	0	1	0	0	0	0	0	0
Shawnee	0	1	0	2	0	1	0	1	23	8	2	1	9	5	4	2	0	0	0
Regional Total	0	1	0	3	0	1	7	3	49	9	2	1	12	6	4	2	1	0	0

Source: Kansas Department of Health and Environment

Hazard Vulnerability and Impact

All people within the east-central Kansas region would be susceptible to a major disease outbreak. As the type of disease cannot be known in advance it is impossible to predict if any segment of the population would be a greater risk. However, the following generalities may be made:

- Population density will affect the rate of spread of a transmissible pathogen
- The young and old are usually more susceptible to deleterious effects of disease
- Access to medical care will impact the outcomes for infected individuals
- The novelty of the disease will impact availability of treatments and vaccines
- Inherent immunity may be present in some populations

As evidenced by annual infectious disease summaries (http://www.kdheks.gov/epi/index.html) and reports of investigations (http://www.kdheks.gov/epi/outbreaks.htm) completed by the KDHE Bureau of Epidemiology and Public Health Informatics, many east-central Kansas counties experience one or multiple disease outbreaks each year. Potential casualty losses are anticipated to be greatest in counties with higher populations, higher pediatric populations and higher elderly populations. Health professional shortage areas and rural areas are more

susceptible to having limited medical capabilities and by extension are more susceptible to the possibility of being overwhelmed because of a large surge of patients seeking care.

Although infectious diseases do not respect geographic boundaries, several populations in east-central Kansas are at specific risk to infectious diseases. Communicable diseases are most likely to spread quickly in institutional settings such as dormitories, long-term care facilities, day care facilities, and schools.

The HMPC ranked the disease outbreak as catastrophic based on a pandemic scenario. The magnitude of an infectious disease outbreak is related to the ability of the public health and medical communities to stop the spread of the disease. Most disease outbreaks that cause catastrophic numbers of deaths are infectious in nature, meaning that they are spread from person to person. The key to reducing the catastrophic nature of the event is to stop the spread of disease. This is generally done in three ways:

- Identification and isolation of the ill
- Quarantine of those exposed to the illness
- Education of the public about methods to prevent transmission.

The public health and health care providers in east-central Kansas routinely utilize all three methods to reduce morbidity and mortality from infectious disease. However, the capacity of the health care system is limited. For example, local health departments have specific pandemic influenza response plans, and mass prophylaxis plans, but most departments have only a few staff members. Most local health departments would need to rely on volunteers, pre-scripted messages and procedures and the cooperation of the public in order to respond effectively to a large scale pandemic. Similarly, hospitals in east-central Kansas have emergency response and pandemic influenza plans, but little excess capacity exists to care for and/or isolate hundreds, even thousands of patients. Because of these limitations in personnel and equipment, the health care community is planning to utilize "community containment" measures. These measures which could include closure of schools, day cares and other public events would have far-reaching economic impacts on the community and might shutdown facilities for 30 days or more. Closure of the day cares or schools would have a serious impact on business as parents might not be able to find child care elsewhere.

According to "The Annual Impact of Seasonal Influenza in the US: Measuring Disease Burden and Costs" by NA Molinari, nationally the economic burden of influenza medical costs, medical costs plus lost earnings, and the total economic burden were $10.4 billion, $26.8 billion and $87.1 billion respectively. The financial burden of healthcare-associated infections nationally has been estimated at $33 billion annually. There is no data currently available on the economic impact of previous illness in east-central Kansas. Using pandemic influenza as the worst case scenario for estimating potential losses, the Kansas Department of Health and Environment's Pandemic Influenza Planning includes the following vulnerability estimates. It has been estimated that a medium-level pandemic could cause, in Kansas:

- Between 229,203 and 534,807 persons may require outpatient care

- Between 5,016 and 11,706 may require hospitalization
- Between 1,163 and 2,714 individuals may die

The majority of these deaths and hospitalizations would occur in more highly populated counties.

The U.S. Centers for Disease Control and Prevention (CDC) estimates 76 million people suffer food borne illnesses each year in the United States, accounting for 325,000 hospitalizations and more than 5,000 deaths. Food borne disease is extremely costly. Health experts estimate that the yearly cost of all food borne diseases in this country is $5 to $6 billion in direct medical expenses and lost productivity. Infections with the bacteria *Salmonella* alone account for $1 billion yearly in direct and indirect medical costs.

	Magnitude/Severity
Major Disease Outbreak	3.00

Future Development

Future development and population increases would tend to increase the risk of this hazard due to the potential for a more rapid spread of an agent or disease. Additionally, the further development of transportation infrastructure would increase the risk of a major disease event due to an influx of travelers to the region. As the population of Kansas ages, the vulnerability to this hazard is likely to increase. The impacts and potential losses are largely economic and are dependent on the type, extent, and duration of the illness.

Probability of Future Hazard Events

Each year, the Kansas KDHE produces a report that details the legally "reportable diseases" in each county in Kansas. While over time this report can serve as a predictor of the likelihood of future disease, it is impossible to predict outbreaks. Based on the relatively limited/controlled outbreak history in the state the possibility of a large-scale major disease outbreak is unlikely

	Probability
Major Disease Outbreak	1.00

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Major Disease Outbreak Consequence Analysis

Subject	Ranking	Impacts of Major Disease Outbreak
Health and Safety of Persons in the Area of the Incident	Severe	Impact over a widespread area could be severe depending on type of outbreak and whether it is a communicable disease. Casualties are dependent on warning systems, warning times and the availability of vaccines, antidotes, & medical svc.
Responders	Severe	Impact to responders could be severe, especially if they reside in the area and or their type of exposure during response. With proper precautions and safety nets in place the impact is lessened.
Continuity of Operations	Minimal	Continuity of Operations will be greatly dependent on availability of healthy individuals. COOP is not expected to be exercised.
Property, Facilities, and Infrastructure	Minimal	Access to facilities and infrastructure could be affected until decontamination is completed
Delivery of Services	Minimal	Delivery of services could be affected if there are road blocks or mass hysteria of any level.
Environment	Severe	Impact could be severe for the immediate impacted area depending on the source of the outbreak. Impact could have far-reaching implications if disease is transferable between humans and animals or to wildlife.
Economic Conditions	Severe	Impacts to the economy could be severe if the disease is communicable. Loss of tourism, revenue, and business as usual will greatly affect the local economy and the state as a whole.
Public Confidence in Governance	Severe	Response and recovery will be in question if not timely and effective. Availability of medical supplies, vaccines, and treatments will come into question.

3.7.15 RADIOLOGICAL EVENT

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Radiological Event	1.00	1.00	4.00	4.00	1.75

Description

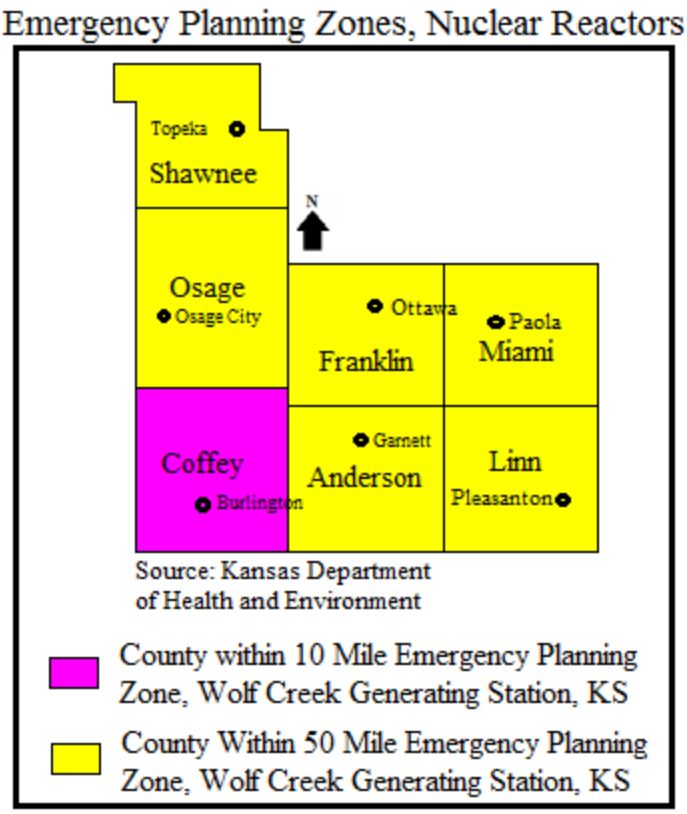
An accident involving radioactive materials could occur from a variety of sources, including nuclear reactors, transportation accidents, industrial and medical uses and lost or stolen sources. Radiological accidents could cause injury or death, contaminate property and valuable environmental resources, as well as disrupt the functioning of communities and their economies.

	Warning Time
Radiological Event	4.00

	Duration
Radiological Event	4.00

Hazard Location

The entire planning region is at risk from a radiological event due to transportation accidents or releases from research universities. Additionally, each regional county is within the 50 mile emergency planning zone for the Wolf Creek Nuclear Power Generating Station, with Coffey County being the location of the Generating Station.



Previous Occurrences and Extent

There are no reported radiological events for east-central Kansas.

Hazard Vulnerability and Impact

There are over 300 licensees of various sizes for radioactive material within the State of Kansas. In general, the major usage of radioactive materials in east-central Kansas are for medical diagnostics and therapy, soil density testing in the construction industry, and in radiography cameras in pipeline construction and repair.

It is common for materials, including pharmaceuticals, industrial sources and nuclear fuel rods destined to nuclear reactors, to be transported across east-central Kansas highways and railroads. Areas near interstates and major highways have an increased risk of transportation accidents. Remote areas also have to account for long response times from hazardous materials and health physics personnel.

Counties within the 50-mile Emergency Planning Zone for commercial nuclear power plants have a slightly higher radiological risk than other counties within the region, but the potential for an incident is extremely low. Federal regulations require emergency planning for the area within up to a 50-mile radius of a nuclear power plant. The potential danger from an accident is exposure to radiation. This exposure could come from the release of radioactive material from the plant into the environment, usually characterized by a plume of radioactive gases and

particles. The major hazards to people in the vicinity of the plume are radiation exposure to the body from the cloud and particles deposited on the ground, inhalation of radioactive materials and ingestion of radioactive materials.

During all lawful operations of radioactive materials, the licensee is responsible for ensuring that the area around the source material is cordoned off or shielding is used to prevent unnecessary exposures. Inspections of practices and security measures are regularly conducted to ensure compliance and conformity to regulations in order to protect the public. The frequency of inspections can be adjusted in response to perceived risk. Public risk can be reduced by minimizing the duration of exposure, shielding the source material and maximizing the distance from the source.

	Magnitude/Severity
Radiological Event	1.00

Future Development

Additional development along transportation corridors would likely increase the potential exposure of the nearby population to a radiological event. Additionally, greater loads on the highways and rail corridors could increase the chances of an accident involving a radiological transport vehicle. Increased development in the vicinity of the Wolf Creek Nuclear Power generating station would increase the likelihood of impact in the event of an incident.

Probability of Future Hazard Events

Based on the lack of major or recurring notable radiological events in east-central Kansas during the last 10 years the probability of an event occurring is unlikely within the next ten years.

	Probability
Radiological Event	1.00

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Radiological Event Consequence Analysis

Subject	Ranking	Impacts of Radiological Event
Health and Safety of Persons in the Area of the Incident	Severe	Impact expected to be severe for persons within the incident area. Protection capabilities and warning times will greatly affect the severity.
Responders	Severe	Impact to responders could be severe if not trained and properly equipped. Responders that are properly trained and equipped will have a low to moderate impact.
Continuity of Operations	Minimal to Severe	Temporary relocation could be necessary if government facilities are in close proximity to the incident area. This temporary relocation could become significant depending on clean-up.
Property, Facilities, and Infrastructure	Severe	Impact within the incident area could be severe to property, facilities, and infrastructure.
Delivery of Services	Minimal to Severe	Delivery of services could be affected within and around the affected area.
Environment	Severe	Localized impact within the incident area could be severe to native plants, wildlife and natural habitats. Clean up and remediation will be required.
Economic Conditions	Minimal to Severe	Economic conditions could be adversely affected and dependent upon time and length of clean up and investigation.
Public Confidence in Governance	Minimal to Severe	Impact will be dependent on whether or not the incident could have been avoided by government or non-government entities, clean-up and investigation times, and outcomes.

3.7.16 SOIL EROSION AND DUST

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Soil Erosion & Dust	2.00	1.00	1.00	4.00	1.75

Description

Soil erosion and dust are both ongoing problems for east-central Kansas. Both can cause significant loss of valuable agricultural soils, damage crops, harm environmental resources and have adverse economic impacts. Soil erosion in east-central Kansas is largely associated with periods of drought, when winds are able to move tremendous quantities of exposed dry soil (wind erosion), and flooding (stream bank erosion). Improper agricultural and grazing practices can also contribute to soil erosion.

The United States is losing soil 10 times faster than the natural replenishment rate, and related production losses cost the country about $37.6 billion each year. On average, wind erosion is responsible for about 40 percent of this loss and can increase markedly in drought years. Wind erosion physically removes the lighter, less dense soil constituents such as organic matter, clays and silts. Thus it removes the most fertile part of the soil and lowers soil productivity, which can result in lower crop yields or poorer grade pastures and increase economic costs.

Stream bank erosion, which can remove agricultural land and damage or destroy roads and bridges and utility lines, occurs each year, particularly in the spring when high runoff is most common. A large proportion of all eroded soil material ends up in rivers, streams and lakes, which makes waterways more prone to flooding and contamination and reduces water supply storage space.

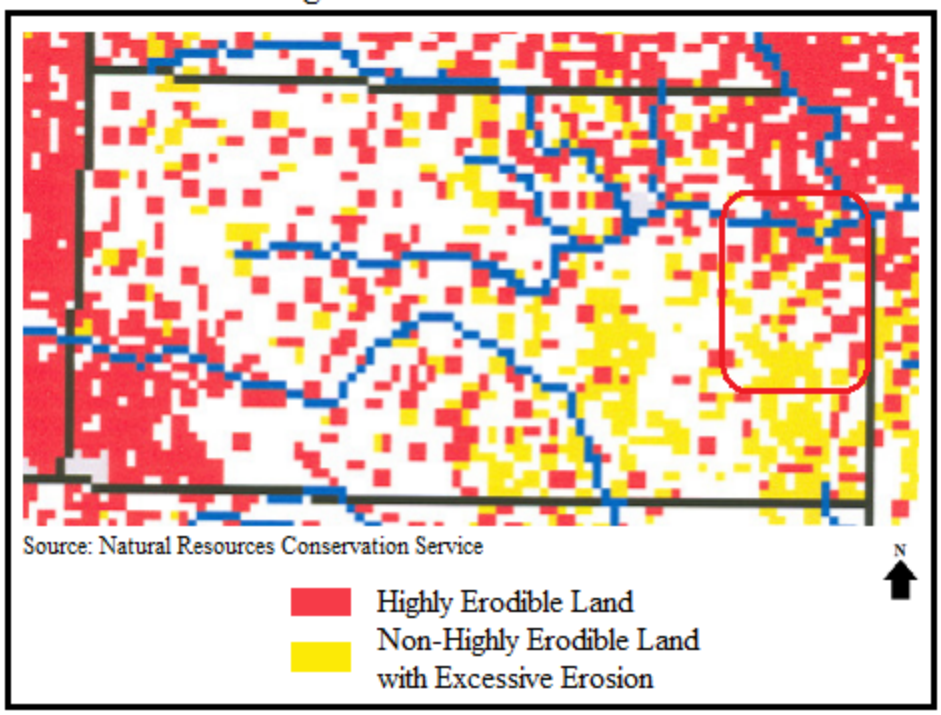
	Warning Time
Soil Erosion & Dust	1.00

	Duration
Soil Erosion & Dust	4.00

Hazard Location

The following figure shows areas of excessive erosion of farmland in Kansas based on a 1997 analysis. Each red dot represents 5,000 acres of highly erodible land, and each yellow dot represents 5,000 acres of non-highly erodible land with excessive erosion above the tolerable soil erosion rate. While east-central Kansas does not have many areas of highly erodible land, the entire area is susceptible to soil erosion and dust.

Regional Farmland Erosion



Previous Occurrences

The most prominent soil erosion and dust event in east-central Kansas, known as the Dust Bowl, occurred across the mid-western United States from 1930-1936. East-central Kansas is situated to the east of the most severely impacted region (100 million acre across Oklahoma, the Texas panhandle, New Mexico, eastern Colorado and western Kansas) but was nonetheless significantly affected. Sustained drought, loss of native prairie and the agricultural practices of the time were primary causes for this unmitigated disaster. During the Dust Bowl years millions of tons of fertile soils were lost as well as a significant percentage of the region's population via migration, dust pneumonia and malnutrition. More recently, the Kansas State Hazard Mitigation Plan reports that during the 1970s and in the spring of 1996 w ind erosion seriously damaged agricultural land throughout the Great Plains.

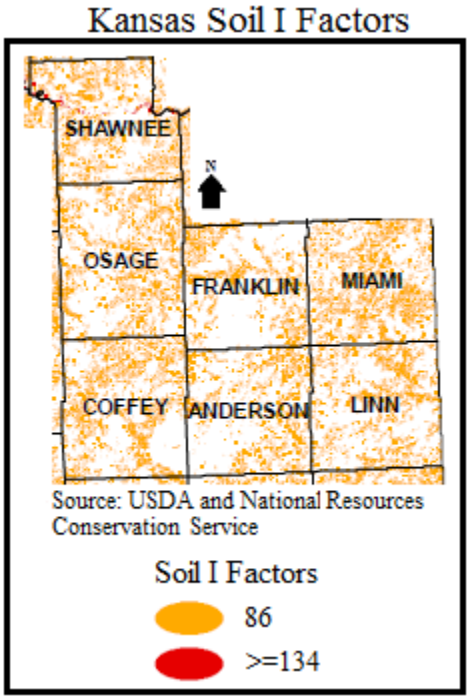
Notable historical erosion events include:

2007: According to the 2007 N atural Resources Inventory (NRI) by the Natural Resources Conservation Service, Kansas lost 1.734 tons per acre to wind erosion on cultivated cropland.

1930s: Kansas is well known for its role in the 1930s Dust Bowl, in which the Central Plains states suffered drought and resulting wind erosion for a bout a decade. It is estimated that 21.5 million acres were lost during this time.

Hazard Vulnerability and Impact

The map below indicates all east-central Kansas soils that have an "I" value, or wind erodibility index, of 86 or g reater. In general, the higher the I value, the more susceptible it is to wind erosion. These are soils that should be further evaluated before recommending the use of emergency tillage or not. The evaluation of these soils will need to take into account the predominate particle size (i.e. classification of "sandy" would cause the soil to have characteristics more like a 134 soil), as well as the ability for the soil to form a stable clod.



There have not been any state-wide studies to estimate the dollar value of top soil lost to soil erosion and dust.

The 2007 Natural Resources Inventory by the Natural Resources Conservation Service shows the historical estimates for tons per acres soil lost annually for cultivated cropland, non-cultivated cropland and pastureland. This estimate can continue as potential soil losses in Kansas.

Kansas Average Wind Erosion in Tons per Acre per Year by Broad Cover/Use

Broad Cover/Use	1982	1987	1992	1997	2002	2007
Cultivated Cropland	2.747	2.963	2.062	1.482	1.463	1.734
Non-Cultivated Cropland	0.907	0.830	0.887	0.339	0.413	0.501
Pastureland	0.009	0.016	0.022	0.015	0.019	0.034

Source: 2007 National Resources Inventory, April 22, 2010
Note: Estimated average annual wind erosion is tons per acre per year with margins of error.

The following table presents regional acreage data for cropland and pastureland .

Regional Acreage Data (2007)

	Acreage
Total Cropland (2007)	1,168,890
Total Pasture Acres (2007)	744,452

Source: USDA National Agricultural Statistics Service

Based on the statewide wind erosion average figures and the total cropland and pasture acreage for the region, the following can be extrapolated for the east-central Kansas.

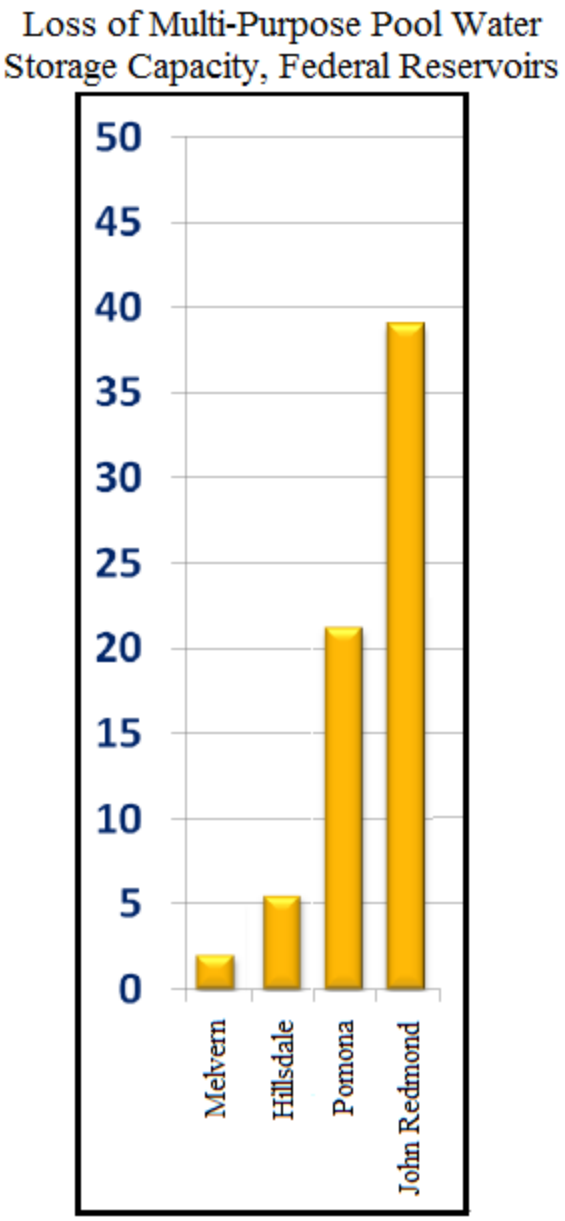
Regional Estimated Soil Tonnage Lost To Wind Erosion, 1982 - 2007

	1982	1987	1992	1997	2002	2007
Estimated Regional Tonnage Lost to Wind Erosion, Cultivated Cropland	3,210,941	3,463,421	2,410,251	1,732,295	1,710,086	2,026,855
Estimated Regional Tonnage Lost to Wind Erosion, Pastureland	6,700	11,911	16,378	11,167	14,145	25,311

Calculated using USDA and 2007 National Resources Inventory data

Soil erosion has also affected the regional federal reservoirs, with erosion depositing large quantities of sediment in these reservoirs, impacting water supply and quality as well as flood storage. Because of differing climatic conditions, land uses, and physical attributes in the various watersheds, sedimentation rates vary among the reservoirs.

In 2001, the KWO completed a report that projected the affect of sedimentation on state-owned storage in federal reservoirs. By the year 2040, sedimentation was projected to reduce the total amount of state-owned storage from 1.2 million acre-feet to roughly 857,000 acre-feet, a rate of loss of 6,260 a cre-feet per year. The following graph shows the percentage loss of s torage capacity for regional reservoirs.



Current information on s edimentation also is lacking for most small reservoirs in Kansas. However, the U.S. Army Corps of Engineers completed a resurvey of 34 small reservoirs in 2001. Results indicated that water-storage capacity lost because of sedimentation ranged from negligible to low for east-central Kansas.

Characteristics of Small Municipal Reservoirs

Reservoir	Community Served	County	Year Built	Original capacity (acre-feet)	2000 capacity (acre-feet)	Percent Difference
Crystal Lake	Garnett	Anderson	1879	229	104	54.6%
Richmond City Lake	Richmond	Franklin	1955	-	220	N/A
Blue Mound City Lake	Blue Mound	Linn	1957	-	165	N/A
Mound City Lake	Mound City	Linn	1979	1,773	1,525	14.0%
Pleasanton Reservoir	Pleasanton	Linn	1968	-	1,180	N/A
Prescott City Lake	Prescott	Linn	1964	138	-	N/A
Lake Miola	Paola	Miami	1957	2,960	2,760	6.8%
Louisburg City Lake	Louisburg	Miami	1984	-	3,750	N/A
Lyndon City Lake	Lyndon	Osage	1966	948	930	1.9%
Strowbridge Reservoir	Carbondale	Osage	1966	3,371	2,902	13.9%

Source: Kansas Water Office (2001)

	Magnitude/Severity
Soil Erosion & Dust	1.00

Future Development

Future development of a gricultural resources and/or increases in population would tend to increase the risk of this hazard.

Probability of Future Hazard Events

While the occurrence of this hazard is on-going, based on data concerning historical occurrences and data on regional growth and development trends in agriculture and livestock, the probability of future occurrences of this hazard causing a greater measurable impact is possible.

	Probability
Soil Erosion & Dust	2.00

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Soil Erosion and Dust Consequence Analysis

Subject	Ranking	Impacts of Soil Erosion and Dust
Health and Safety of Persons in the Area of the Incident	Minimal	Impact tends to be agricultural; however, dust can be a danger to susceptible individuals in the form of air pollutants.
Responders	Minimal	With proper preparedness and protection, impact to the responders is expected to be minimal.
Continuity of Operations	Minimal	Minimal expectation for utilization of the COOP.
Property, Facilities, and Infrastructure	Minimal to Moderate	Impact to property, facilities, and infrastructure could be severe, depending on the site of the soil erosion. This could adversely affect utility poles/lines, and facilities. Dust can also adversely affect machinery, air conditioners, etc.
Delivery of Services	Minimal	Impact on the delivery of services should be non-existent to minimal, unless roads and utilities are affected.
Environment	Severe	The impact to the environment could be severe. Soil erosion and dust can severely affect farming, ranching, wildlife and plants due to production losses and habitat changes.
Economic Conditions	Minimal	Impacts to the economy will be dependent on how extreme the soil erosion and dust are. Potentially it could severely affect crop yield and productivity. Seedling survival and growth is stressed by erosion and dust, as is the top soil which agriculture is dependent on.
Public Confidence in Governance	Minimal	Planning, response, and recovery may be questioned if not timely and effective.

3.7.17 TERRORISM, AGRI-TERRORISM

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Terrorism, Agri-Terrorism	1.14	2.00	4.00	1.00	1.81

Description

The United States does not have a standardized definition of terrorism that is agreed upon by all agencies. The Federal Bureau of Investigation generally defines terrorism as:

> "the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives."

The USA Patriot Act expanded this definition to include domestic terrorism, defined as:

> "acts dangerous to human life that are a violation of the criminal laws of the United States or of any State" intended to "intimidate or coerce a civilian population," "influence the policy of a government by intimidation or coercion" or "affect the conduct of a government by mass destruction, assassination, or kidnapping" that are conducted primarily within the jurisdiction of the United States."

The Homeland Security Act of 2002, which created the Department of Homeland Security, extended the definition of terrorism further by including any act that:

> "involves an act that dangerous to human life or potentially destructive to critical infrastructure or key resources, and is a violation of the criminal laws of the United States or of any state or other subdivision of the United States and appears to be intended to intimidate or coerce a civilian population to influence the policy of a government by intimidation or coercion, or to affect the conduct of a government by mass destruction, assassination, or kidnapping"

The statement "potentially destructive to critical infrastructure or key resources" indicates that the act does not need to be dangerous to human life for it to be considered an act of terrorism. Terrorists may use a range of possible actions, including:

- Chemical attacks
- Biological attacks
- Radiological attacks
- Nuclear attacks
- Cyber-terrorism
- Agri-terrorism

	Warning Time
Terrorism, Agri-Terrorism	4.00

	Duration
Terrorism, Agri-Terrorism	1.00

Hazard Location

Kansas is home to a wide variety of criminal extremist groups. The Southern Poverty Law Center reported that in 2012, there were three active hate groups in Kansas: one neo-Nazi group, the National Socialist Movement in Lansing, one racist skinhead group, the Midland Hammerskins in Wichita, and one anti-homosexual group, the Westboro Baptist Church in Topeka. Other groups, such as the Animal Liberation Front, Earth Liberation Front, and People for the Ethical Treatment of Animal may have sympathizers in the region. Although no major terrorist acts have been attributed to any of these latter groups, their involvement in violent acts is meant to disrupt governmental functions and cannot be discounted.

Previous Occurrences

The following are a brief description of unsuccessful or threatened regional terrorism events:

2004: There was a white supremacist rally in Topeka.

1993: A lone gunman attacked the federal courthouse in Topeka with firearms and improvised explosive devices, killing and injuring several individuals. The same individual also set off explosive devices in the courthouse parking lot and at a law enforcement facility parking lot in an adjoining county.

Hazard Vulnerability and Impact

Of particular concern to east-central Kansas is agri-terrorism Agri-terrorism consists of acts to intentionally contaminate, ruin, or otherwise make agricultural products unfit or dangerous for consumption or further use. The introduction of a biological agent into an animal or crop would be financially devastating and would have a major impact on the food supply of the state region , state and nation. Potential terrorists' targets for livestock disease introduction would be concentration points, such as the region's licensed feedlots and livestock markets. Additionally, Kansas has over 120 agricultural crop-dusters, many of which are configured for chemical spraying.

It is not possible to calculate a specific vulnerability for each county in east-central Kansas. However, because of the desire for publicity following attacks, it is more likely that counties with greater population densities would be the target of attacks. Sparsely populated rural counties are less desirable targets for publicity-seeking terrorists. It is expected that the likelihood of attack is directly related to population density or more likely to an event that is occurring or to a specific location of importance to the attacker. For example, a large venue event, such as a sporting event attended by tens of thousands of people might be considered a desirable target.

Most large public venues occur in densely populated areas since those areas are able to provide the infrastructure support (hotels, eateries, etc) for large numbers of people.

Potential losses from Terrorism/Agri-Terrorism include all infrastructure, critical facilities, crops, humans and animals. The degree of impact would be directly related to the type of incident and the target. Potential losses could include cost of repair or replacement of damaged facilities, lost economic opportunities for businesses, loss of human life, injuries to persons, loss of food supplies, disruption of the food supply chain, and immediate damage to the surrounding environment. Secondary effects of infrastructure failure could include public safety hazards, spread of disease, increased morbidity and mortality among the local and distant populations, public panic and long-lasting damage to the environment. Terrorism events are rare occurrences and specific amounts of estimated losses for previous occurrences are not available due to the complexity and multiple variables associated with these types of hazards. In some instances, information about these events is secure and unavailable to the public in order to maintain national security and prevent future attacks.

In general, it is difficult to quantify potential losses of terrorism due to the many variables and human elements and lack of historical precedence. Therefore, for the purposes of this plan, the loss estimates will take into account three hypothetical scenarios. The estimated impact of each event was calculated using the Electronic Mass Casualty Assessment and Planning Scenarios developed by Johns Hopkins University. The Electronic Mass Casualty Assessment and Planning Scenarios system usually rates the of worried well as equal to 9 times the number of infected cases.

Please note that the hypothetical scenarios are included for illustrative purposes only.

Scenario #1: Mustard Gas Release

Event: Mustard gas is released from a light aircraft onto the stadium during a home football game. The agent directly contaminates the stadium and the immediate surrounding area. This attack would cause harm to humans and could render portions of the stadium unusable for a short time period in order to allow for a costly clean-up. There might also be a fear by the public of long-term contamination of the stadium and subsequent boycott of games resulting in a loss of revenue and tourism dollars.

Event Assumptions: For this scenario the number of people in the stadium is 50,000 with an additional 5,000 persons remain outside the stadium in the adjacent parking areas. The agent used, mustard gas, is extremely toxic and may damage eyes, skin and respiratory tract with death sometimes resulting from secondary respiratory infections. Death rate from exposure estimated to be 3%. The estimated decontamination cost is $12 person. For this scenario it is assumed that all persons with skin injuries will require decontamination.

Results: The following table presents the estimated human and economic impacts of the scenario.

Estimated Impact of Scenario #1, Mustard Gas Release

Impact	Post Exposure Onset Time	Effect
Severe Eye Injuries (1-2 hours)	1 -2 Hours	41,250 persons
Severe Airway Injuries (1-2 hours)	1 - 2 Hours	41,250 persons
Severe Skin Injuries (2 hrs to days)	2 Hours to Days	49,500 persons
Deaths	Immediate to Days	1,100 persons
Cost of Decontamination	N/A	$594,000

Scenario #2: Pneumonic Plague

Event: Four Canisters containing aerosolized pneumonic plague bacteria are opened in public bathrooms of heavily populated buildings (airports, stadiums, etc.). Each release location will directly infect 110 people; hence, the number of release locations dictates the initial infected population. The secondary infection rate is used to calculate the total infected population. This attack method would not cause damages to buildings or other infrastructure, only to human populations.

Event Assumptions:

Each canister contains 650 milliliters of pneumonic plague bacteria. The type of infectious agent used is identified on Day 4. After identification, the fatality rate is 10% for new cases. Pneumonic plague has a 1-15 percent mortality rate in treated cases and a 40-60 percent mortality rate in untreated cases.

Results: The following table presents the estimated human impacts of the scenario.

Estimated Impact of Scenario #2, Pneumonic Plague Release

Impact	Effect
Initial Infected Population	440 persons
Secondary Infected Population	883 persons
Deaths (7% of Infected)	62

Scenario #3: Improvised Explosive Device

Event: An improvised explosive device utilizing an ammonium nitrate/fuel oil (ANFO) mixture is carried in a panel van to a parking area during a time when stadium patrons are leaving their cars and entering the stadium and detonated. Potential losses with this type of scenario include both human and structural assets.

Event Assumptions:

The quantity of ANFO used is 4,000 pounds. The population density of the lot is assumed to be 1 person per every 25 square feet for a pre-game crowd. The Lethal Air Blast Range for such a vehicle is estimated to be 50 feet according to the Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF) Standards. The Falling Glass Hazard distance is estimated at 600 feet according to BATF Explosive Standards. In this event, damage would occur to vehicles, and depending on the proximity of other structures, damages would occur to the stadium complex itself. The exact amount of these damages is difficult to predict because of the large numbers of factors, including the type of structures nearby and the amount of insurance held by vehicle owners. It is estimated that the average replacement cost for a vehicle is $20,000 and the average repair cost for damaged vehicles would be $4,000.

Results: The following table presents the estimated human impacts of the scenario.

Estimated Impact of Scenario #3, Improvised Explosive Device

Impact	Effect
Deaths	1,391 persons
Trauma Injuries	2,438 persons
Urgent Care Injuries	11,935
Injuries not Requiring Hospitalization	4,467
Repair Costs for 100 Vehicles	$400,000
Replacement Costs for 50 Vehicles	$1,000,000

	Magnitude/Severity
Terrorism, Agri-Terrorism	2.00

Future Development

In general, acts of terrorism have historically been conducted in major population centers or on targets of high significance within the United States. Regional development data indicates that both population and growth have been increasing in the large urban areas. If more large public events are held in east-central Kansas, more potential may exist for these venues to become targets of attack.

With human-caused hazards such as this that can have multiple variables involved, increases in development are not necessarily always factors in determining risk, although the physical cost of the event may increase with the increased or newly developed areas.

Probability of Future Hazard Events

By nature, acts of terrorism are difficult to foresee. However, based on historic events the probability of future major regional terrorist attacks is unlikely.

	Probability
Terrorism, Agri-Terrorism	1.14

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Terrorism, Agri-Terrorism Consequence Analysis

Subject	Ranking	Impacts of Terrorism, Agri-Terrorism
Health and Safety of Persons in the Area of the Incident	Severe	Impact could be severe for persons in the incident area.
Responders	Minimal to Severe	Impact to responders could be severe if not trained and properly equipped. Responders that are properly trained and equipped will have a low to moderate impact.
Continuity of Operations	Minimal to Severe	Depending on damage to facilities/personnel in the incident area, re-location may be necessary and lines of succession execution.
Property, Facilities, and Infrastructure	Severe	Impact within the incident area could be severe for explosion, moderate to low for Hazmat.
Delivery of Services	Minimal to Severe	Delivery of services could be affected if communications, road and railways, and facilities incur damage.
Environment	Minimal to Severe	Localized impact within the incident area could be severe depending on the type of incident.
Economic Conditions	Minimal to Severe	Economic conditions could be adversely affected and dependent upon time and length of clean up and investigation.
Public Confidence in Governance	Minimal to Severe	Impact dependent on if the incident could have been avoided by government entities, clean-up, investigation times and outcomes.

3.7.18 TORNADO

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Tornado	3.21	3.14	4.00	1.00	3.09

Description

The NWS defines a tornado as "a violently rotating column of air extending from a thunderstorm to the ground." Tornados are the most violent of all atmospheric storms and are capable of tremendous destruction. Wind speeds can exceed 250 mph, and damage paths can be more than one mile wide and 50 miles long.

Although tornados have been documented on every continent, they occur most frequently in the United States east of the Rocky Mountains. East-central Kansas is situated in an area that is generally known as "Tornado Alley." Climatological conditions are such that warm and cold air masses meet in the center of the country to create conditions of great instability and fast moving air at high pressure that can ultimately result in formation of tornado funnels.

In east-central Kansas, most tornados and tornado-related deaths and injuries occur during the months of April, May, and June. However, tornados have struck in every month. Similarly, while most tornados occur between 3:00 p.m. and 9:00 p.m., a tornado can strike at any time.

Tornados are classified according to the Enhanced Fujita (EF) Scale. The EF scale ranks tornados according to wind speed and the resulting damage caused. This system is an update to the original Fujita Scale, and was implemented on February 1, 2007. The following table illustrates the changes in the scaling systems.

Fujita Scale and Enhanced Fujita Scale Comparison

Fujita Scale			Derived EF Scale		Operational EF Scale	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

Source: NWS

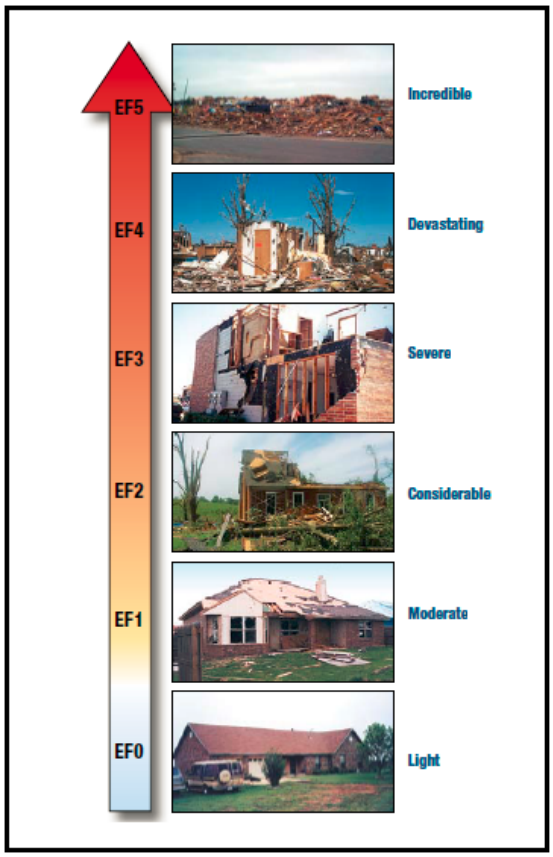
The wind speeds for the EF scale and damage descriptions are based on information from the NOAA Storm Prediction Center. The damage descriptions are summaries. For the actual EF scale it is necessary to look up the damage indicator (type of structure damaged) and refer to the degrees of damage associated with that indicator.

Enhanced Fujita Scale

Scale	Wind Speed (mph)	Relative Frequency	Potential Damage
EF0	65-85	53.5%	Light. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over. Confirmed tornados with no reported damage (i.e. those that remain in open fields) are always rated EF0.
EF1	86-110	31.6%	Moderate. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111-135	10.7%	Considerable. Roofs torn off well constructed houses; foundations of frame homes shifted; mobile homes complete destroyed; large trees snapped or uprooted; light object missiles generated; cars lifted off ground.
EF3	136-165	3.4%	Severe. Entire stores of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	166-200	0.7%	Devastating. Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	>200	<0.1%	Explosive. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 300 ft.; steel reinforced concrete structure badly damaged; high rise buildings have significant structural deformation; incredible phenomena will occur.

Source: NOAA Storm Prediction Center

The following picture, provided by FEMA, visually indicates expected damage from each tornado type.



Source: FEMA, Taking Shelter From the Storm, 2008

The best lead time for a tornado is about 30 minutes. Tornados have been known to change paths very rapidly, thus limiting the time in which to take shelter. Tornados may not be visible on the ground due to evening hours, blowing dust or driving rain and hail. Therefore, there is very little, or no, warning of when a specific tornado may be on the ground.

	Warning Time
Tornado	4.00

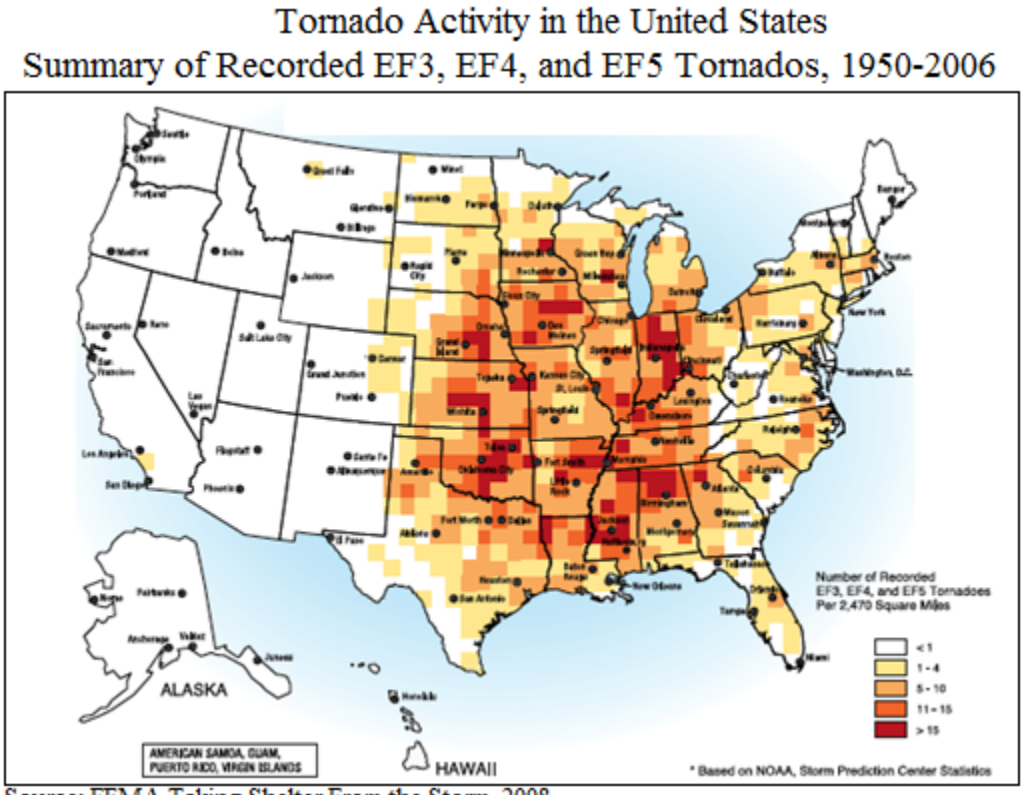
	Duration
Tornado	1.00

Hazard Location

Although tornados have been documented on every continent, they occur most frequently in the United States east of the Rocky Mountains. East-central Kansas is situated in an area that is generally known as Tornado Alley.

While tornados can occur in all areas of the State of Kansas, historically, some areas of the state have been more susceptible to this type of damaging storm. All of east-central Kansas, including all of the participating jurisdictions, is at risk to tornados.

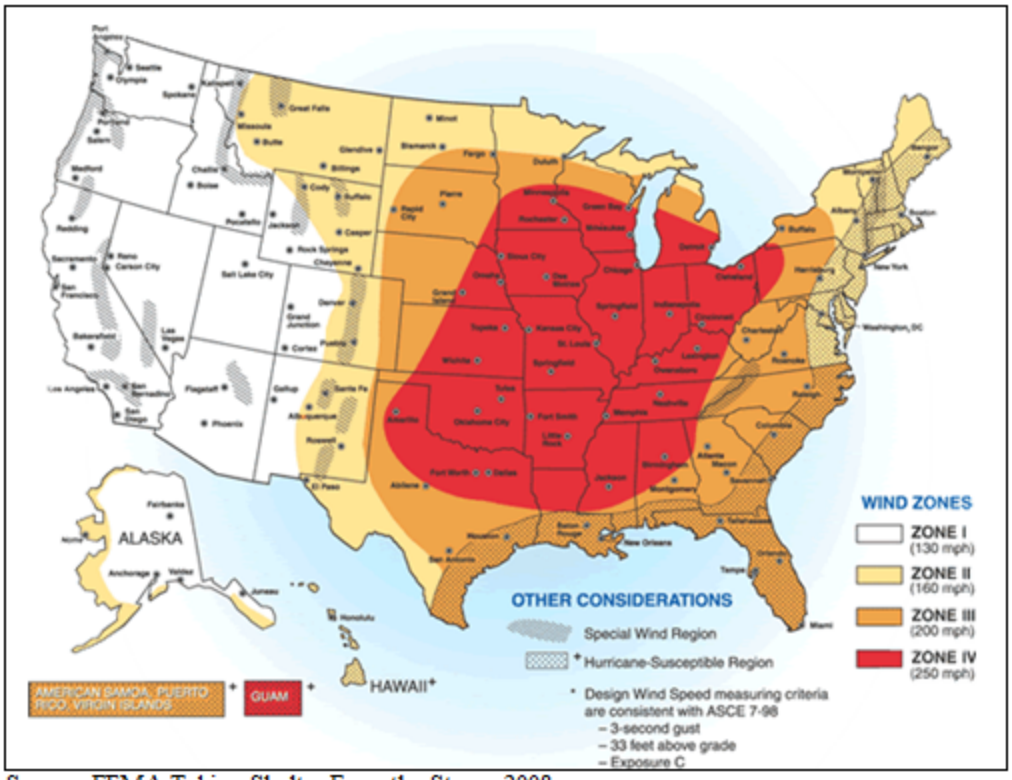
The following figure illustrates the number of F3, F4, and F5 tornados recorded in the United States between 1950 and 2006. Each colored block indicates an area of approximately 2,470 square miles. Data from the map indicates the east-central Kansas region falls within areas that range from 5-10 to >15 recorded events.



Source: FEMA Taking Shelter From the Storm, 2008

Additionally, the following figure shows that east-central Kansas is in Wind Zone IV, indicating that the area has the strongest and most frequent tornado activity.

Wind Zones in the United States



Source: FEMA Taking Shelter From the Storm, 2008

By using the data derived from the above maps and the risk rating table from FEMA, it is possible to see that east-central Kansas is in a high risk area for tornados.

Area Risk Rating

		Wind Zone			
		I	II	III	IV
Number of Tornados Per 2,470 Square Miles	<1	Low Risk	Low Risk	Low Risk	Moderate Risk
	1-4	Low Risk	Moderate Risk	High Risk	High Risk
	5-10	Low Risk	Moderate Risk	High Risk	High Risk
	11-15	High Risk	High Risk	High Risk	High Risk
	>15	High Risk	High Risk	High Risk	High Risk

Source: Taking Shelter from the Storm, FEMA, 2008

Previous Occurrences and Extent

In the past ten years, tornados have impacted east-central Kansas repeatedly, including seven Presidential Disaster Declarations since 2003. Details about some of these events as well as the Presidential Disaster Declarations that included tornados can be found on the following pages.

Kansas Presidential Declarations Involving Tornados

Declaration Number	Declaration Date*	Disaster Description	Regional Counties Involved	Disaster Cost**
4010	07/29/2011 (5/19-6/4/2011)	Severe Storms, Straight-Line Winds, **Tornados** and Flooding	Osage	$8,259,620
1932	08/10/2010 (6/7-7/21/2010)	Severe Storms, Flooding and **Tornados**	Franklin, Miami and Osage	$9,279,257
1849	06/25/2009 (04/25-05/16/2009)	Severe Storms, Flooding, Straight-line Winds and **Tornados**	Anderson, Coffey and Linn	$15,013,488
1808	10/31/2008 (09/11-09/17/2008)	Severe Storms, Flooding and **Tornados**	Anderson	$4,167,044
1776	07/09/2008 (05/22-06/16/2008)	Severe Storms, Flooding and **Tornados**	Franklin and Linn,	$70,629,544
1699	5/6/2007 (5/4/2007)	Severe Storms, **Tornados** and Flooding	Osage and Shawnee	$117,565,269
1535	8/03/2004 (06/12-07/25/2004)	Severe Storms, Flooding and **Tornados**	Shawnee	$12,845,892
1462	5/6/2003 (5/4-30/2003)	Severe Storms, **Tornados** and Flooding	Anderson, Miami and Osage	$988,056
1254	10/14/1998 (10/1-10/8/1998)	Severe Storms, Flooding and **Tornados**	Franklin and Linn	$9,770,769
644	7/18/1981	Severe Storms, Flooding and **Tornados**	Douglas	$670,436
403	9/28/1973	Severe Storms, **Tornados** and Flooding	Coffey, Franklin, Linn, Miami, Osage and Shawnee	$4,296,913
267	7/15/1969	**Tornados**, Severe Storms and Flooding	Anderson, Franklin, Linn, Miami and Osage	$733,524
229	7/18/1967	**Tornados**, Severe Storms and Flooding	Anderson, Coffey, Franklin, Linn, Miami and Osage	$847,439
219	06/10/1966	**Tornados** and Severe Storms	Shawnee	$2,856,131

Sources: FEMA and Kansas Division of Emergency Management

* Incident dates are in parentheses.

** Disaster costs include Public Assistance and Individual Assistance and may include additional ,unlisted counties

The following are brief descriptions of some of the above referenced tornado events:

FEMA-4010-DR: Severe Storms, Straight-line Winds, Tornados and Flooding – July 29, 2011 (May 19 to June 4, 2011): Supercell thunderstorms developed in advance of a cold front and dry line during the late afternoon of Saturday May 21st. Several of the supercell

thunderstorms produced tornados including at least 2 brief touchdowns in Topeka. The strongest tornado was rated an EF3 and hit the town of Reading, Kansas. It claimed the life of one man when his mobile home was destroyed and injured 5 others in Reading. In all there were 8 tornados across east-central Kansas that evening. There was one fatality which occurred in the town of Reading where a man was killed when his mobile home was destroyed. There were 5 injuries that required treatment in Reading.

FEMA-1932-DR: Severe Storms, Flooding and Tornados – August 10, 2010 (June 7 to July 21, 2010) : There were thunderstorms that developed Tornados during this timeframe, but no widespread tornado damage. The majority of the declaration damage was from flooding to public roads and bridges.

FEMA-1808-DR: On April 29th, severe thunderstorms produced very large hail and 5 tornadoes. One tornado started out moving southeast near Plymell in Finney County, but then curved back to the southwest. It unfortunately went through a cattle dairy and killed over 200 head as a tremendous amount of tin churned through the air. There were 8 pivot irrigation sprinklers damaged or destroyed, along with power poles, trees, and roof and window damage.

FEMA-1776-DR: Severe Storms, Flooding and Tornados - July 9, 2008 (May 22 to June 16, 2008): A series of intense supercell thunderstorms moved north across northwest Kansas during the afternoon and early evening hours of May 23rd. Long-track tornados, flash flooding, large hail and damaging winds were reported.

FEMA-1699-DR: Severe Storms, Tornados and Flooding - May 6, 2007 (May 4, 2007): A 1.7 mile-wide EF5 tornado with wind estimated at 205 mph struck Greensburg in Kiowa County, destroying approximately 90 percent of the town and severely damaging the remaining 10 percent. Tornado sirens sounded in the City twenty minutes before the tornado struck, and a tornado emergency was issued, undoubtedly saving many lives in the town of 1,580. Nevertheless, the storm killed 12 people, 10 in Greensburg, one in Pratt, and one in Stafford, and hospitalized 13 others.

FEMA-1638-DR: Severe Storms, Tornados and Flooding - May 6, 2003: In two separate storm events, May 4 and 15, tornadoes and flooding occurred across eastern Kansas. There was widespread property damage, seven fatalities, and more than 50 injuries.

FEMA-219-DR: Tornados and Severe Storms - June 10, 1966 (June 8) - This F5 was the most destructive tornado in Topeka's history. It produced $100 million in damage, which made it the costliest tornado in American history at the time. Although 16 people were killed and 500 injured, excellent public warning and preparedness prevented a much larger number of deaths and injuries. About 820 homes were destroyed and 3,000 damaged as entire blocks were leveled to splinters in seconds. Every building on the Washburn University campus was damaged, many totally destroyed from the violent winds estimated at around 300 mph. The Capitol Dome sustained damage from tremendous flying debris, as did many downtown Topeka buildings. Power and other utilities were out in much of the community for weeks.

The following provide further descriptions and other notable tornado events.

February 28, 2007: An EF4 tornado in Linn County destroyed a home north of Blue Mound. Six more homes sustained minor damage, and about a dozen outbuildings were damaged or destroyed; trees and power lines were downed as well.

November 27, 2005: Occurring unusually late in the year, a number of F0 and F1 touched down across east-central and southeast Kansas.

May 8, 2003: Nine tornadoes struck the Topeka National Weather Service County Warning Area. Four injuries were reported. In Anderson County, an F2 tornado injured three people, destroyed seven homes, and damaged several others. In Douglas County, three tornadoes were confirmed, an F0, F1 and F2. The F2 caused one injury and damaged 40 structures. Two tornadoes were confirmed in Osage County, an F1 and an F3. The F3 produced extensive damage. Another tornado did substantial damage in Anderson and Linn Counties.

June 15, 1992: This day set Kansas' record for the most tornados on one day: 39.

June 17, 1978: A tornado struck very near the Whippoorwill Showboat on Lake Pomona in Osage County causing it to capsize, resulting in 16 deaths and 3 injuries among the 58 passengers and crew. Although the deaths were due to drowning, they were attributed to the tornado. Damage was also reported to campers, trees and power lines, but these were relatively insignificant.

The following table shows NCDC information for the 11 years from 2003 to 2013. Additionally, the strongest rated tornado event is indicated.

NCDC Tornado Events, 2003-2013

County	Number of Tornados	Strongest Tornado Event	Deaths	Total Property Damage	Crop Damage
Anderson	5	F2	0	$1,100,000	$0
Coffey	5	F0	0	$0	$0
Franklin	6	F1	0	$105,000	$0
Linn	5	EF4	0	$535,000	$0
Miami	3	F1	0	$5,000	$0
Osage	14	F3	0	$1,861,000	$0
Shawnee	7	F1	0	$101,000	$0
Regional Total	45		0	$3,707,000	$0

Source: NCDC Storm Events Database

Local Events

The following detail locally reported events:

May 25, 2011: Louisburg, Miami County: A Tornado touched down at 10:48 am. A pickup and trailer were overturned (Driver had minor injuries), two houses with large trees blown down onto them and multiple houses with roof damage. Also had several grave stones blown over in the cemetery along with multiple trees down in a half mile path.

February 1, 2011: Quenemo and southwest Osage County: A tornado damaged buildings, crops and power lines. Federal aid was received as part of DR-4010.

June 8, 2010: Franklin County: A tornado caused damage to homes, outbuildings, power lines and trees. Federal disaster aid was received.

May 4, 2003: Near New Lancaster, Miami County: A tornado with a magnitude of F1 was reported. The tornado was over open country. A dry line moved into eastern Kansas and initiated severe thunderstorm development the afternoon of May 4th. There were zero property or crop damages and no deaths or injuries associated with this tornado in Miami County.

April 24, 2003: Miami County: A tornado with a magnitude of F0 was reported two miles southwest of Antioch. The tornado only briefly touched down and was reported to be 50 yards wide. There were no damages, fatalities or injuries attributed to the April 24th event.

Hazard Vulnerability and Impact

To refine and access the relative vulnerability of each of east-central Kansas' counties to tornados, ratings were assigned to pertinent factors at the county level. These factors are: social vulnerability index, prior events, prior annualized property damage, building exposure valuation, population density, crop exposure and annualized crop loss. Then a rating value of 1-10 was assigned to the data obtained for each factor and then weighted equally and factored together to obtain overall vulnerability scores for comparison and to determine the most vulnerable counties.

Tornados that touch-down can create a unique path of destruction. So using the prior events as a factor can give the perception that a county has a higher overall vulnerability to tornados.

The following information was used for this analysis:

- Social Vulnerability Index for Kansas from the Hazards and Vulnerability Research Institute at the University of South Carolina
- National Climatic Data Center storm events 2000 – 2012
- U.S. Census Bureau (2010)
- USDA's Census of Agriculture (2007)
- USDA Risk Management Agency Kansas Hazard Mitigation Plan (2002 – 2011)

Regional Counties Tornado Vulnerability Factors

County	SoVI Rating	Prior Events 1993-2012	Property Damages	Annualized Property Damage	Total Building Exposure ($000)	Population Density	Crop Exposure	Crop Loss Insurance Paid	Annualized Crop Loss Insurance Paid
Anderson	3	5	$1,500,000	$75,000	$518,401	14	$33,029,000	$0	$0
Coffey	3	5	$0	$0	$670,953	13	$25,497,000	$0	$0
Franklin	2	7	$105,000	$5,250	$1,598,004	45	$32,349,000	$0	$0
Linn	2	5	$535,000	$26,750	$659,126	16	$13,053,000	$34,879	$3,488
Miami	1	3	$500,000	$25,000	$2,106,266	55	$27,726,000	$0	$0
Osage	2	19	$2,011,000	$100,550	$977,110	23	$27,618,000	$11,207	$1,121
Shawnee	2	8	$212,000	$10,600	$11,828,241	322	$32,959,000	$0	$0
Subtotal		52	$4,863,000	$243,150	$18,358,101	-	$192,231,000	$46,086	$4,609

Using the above information, a value of 1-10 was assigned to the data obtained for each factor and then weighted equally and factored together to obtain overall vulnerability scores for comparison and to determine the greatest vulnerable counties. The Social Vulnerability Index is in a range of 1- 5. To give Social Vulnerability Index the same weight as the other factors, the numbers were multiplied by two.

Ranges for Tornado Vulnerability Ratings

Ratings	Social Vulnerability	Prior Events	Annualized Property Damage	Building Exposure Valuation	Population Density *	Crop Exposure	Annualized Crop Loss Insurance Paid
1		3 - 7	$500 - $500,000	$117,421 - $4,492,825	1.6 - 116.3	0 - $18,548,500	$0 - $1,000
2	1	8 - 12	$500,001 - $1,000,000	$4,492,826 - $8,868,229	116.4 - 231.1	$18,548,501 - $32,126,000	$1,001 - $2,000
3		13 - 17	$1,000,001 - $1,300,000	$8,868,230 - $13,243,634	231.2 - 345.9	$32,126,001 - $45,703,500	$2,001 - $3,000
4	2	18 - 22	$1,300,001 - $2,000,000	$13,243,635 - $17,619,039	346 - 460.7	$45,703,501 - $59,281,000	$3,001 - $4,000
5		23 - 27	$2,000,001 - $3,000,000	$17,619,040 - $21,994,444	460.8 - 575.5	$59,281,001 - $72,858,500	$4,0001- $5,000
6	3	28 - 32	$3,000,001 - $4,000,000	$21,994,445 - $26,369,848	575.6 - 690.3	$72,858,501 - $86,436,000	$5,001 - $6,000
7		33 - 37	$4,000,001 - $7,000,000	$26,369,849 - $30,745,253	690.4 - 805.1	$86,436,001 - $100,013,500	$6,001 - $7,000
8	4	38 - 42	$8,000,001 - $11,000,000	$30,745,254 - $35,120,658	805.2 - 919.9	$100,031,501 - $113,591,000	$7,001 - $8,000
9		43 - 47	$11,000,001 - $13,000,000	$35,120,659 - $39,496,062	920- 1,034.7	$113,591,001 - $127,168,500	$8,001 - $9,000
10	5	48 - 54	Above $13,000,001	$39,496,063 - $43,871,468	1,034.8 - 1,149.6	$127,168,501 - $140,746,000	$9,001 and up

Based on the above ratings system, ranges were applied to each county to determine their potential vulnerability. The following related the scoring to a vulnerability assessment:

- **Medium:** Score range of 9 - 19
- **Medium-High:** Score range of 20 - 29
- **High:** Score range of 30 - 40

Vulnerability of Regional Counties to Tornados

County	SoVi Rating	Prior Event Rating	Annualized Property Damage Rating	Bldg Exposure Valuation Rating	Population Density Rating	Crop Exposure Rating	Annualized Crop Insurance Rating	Overall Vulnerability Rating	Tornado Vulnerability
Anderson	6	1	1	1	1	3	1	14	Medium
Coffey	6	1	0	1	1	2	1	12	Medium
Franklin	4	1	1	1	1	3	1	12	Medium
Linn	4	1	1	1	1	1	4	13	Medium
Miami	2	1	1	1	1	2	1	9	Medium
Osage	4	4	1	1	1	2	2	15	Medium
Shawnee	4	2	1	3	3	3	1	17	Medium

Between 2001 and 2010 by tornados, 51 percent of those killed by tornados were living in mobile homes, according to the NOAA. The *2012 Kansas Severe Weather Awareness Week* reports people living in mobile homes are killed by tornados at a rate 20 times higher than people living in permanent homes. The following table represents the number of mobile homes per county, and the percentage of total housing stock.

Percentage of Mobile Homes per Regional County

County	Number of Housing Units	Number of Mobile Homes	Percentage Mobile Homes
Anderson	3,709	301	8.12%
Coffey	3,990	445	11.15%
Franklin	11,126	1,283	11.53%
Linn	5,445	965	17.72%
Miami	13,225	788	5.96%
Osage	7,504	847	11.29%
Shawnee	79,287	2,824	3.56%
Regional Total	124,286	7,453	6.00%

Sources: United States Census Bureau and U.S. Census Bureau American Community Survey 2005–2009 and 2012

	Magnitude/Severity
Tornado	3.11

Future Development

Future development, increases in population and additional development of agricultural resources and would tend to increase the risk of this hazard. New development anywhere in east-central Kansas will be susceptible to tornado impacts. New manufactured housing development will be most susceptible to damage, particularly if not anchored properly. The extent of new manufactured housing development is not known. Regional population totals are

estimated to rise from 279,511 persons in 2013 to 297,512 by 2040, with the increase seen in Franklin, Miami and Shawnee counties. These increases and future vulnerabilities may be offset by regional awareness of the tornado hazard, building codes, and public and private shelters.

Probability of Future Hazard Events

According to the NCDC, there were 45 tornados in east-central Kansas between 2003 and 2013. Based on this information, the probability that at least one tornado will occur in east-central Kansas in any given year is high.

The following calculations of probability are used for illustrative purposes only. The calculations were sourced from the FEMA Benefit-Cost Analysis Reengineering Tornado Safe Room Module Methodology Report, Version 4.5 Final, Dated May 2009. Revisions to the calculation methodology include using the entire area of the county as opposed to the 80 km by 80 km cell sized. Additionally, tornados reported on the Fujita Scale were converted to the Enhanced Fujita Scale using available data. Finally, probabilities were not calculated for EF class tornados with zero occurrence.

The following equation was used to determine probabilities equation:

Prob. Tornado(EF) = (EF count * EF area) / (Cell area * Years)

Where:

- EF count = Estimate tornado count for EF class from mapping
- EF area = Area of tornado for EF class in km2
- Cell area = Area of analysis cell, county size in KM2
- Years = Years of record from 2003 to 2013 or 11 years

Mean Tornado Length and Width

EF Class	Length (km2)	Width (km2)	EF Area
EF0	1.4	0.0284	0.03976
EF1	4.7	0.064	0.3008
EF2	10.7	0.1259	1.34713
EF3	22.5	0.2636	5.931
EF4	43.6	0.4607	20.08652
EF5	54.6	0.5555	30.3303

The following table details the illustrative calculated probability for the occurrence of a tornado in each regional county.

Illustrative Calculated Probability of Tornado

County	Approximate Area (KM2)	Tornado Rating (EF Scale)	Tornado Area (KM2)	Number of Occurrences	Number of Years	Probability
Anderson	1,513	0	0.03976	3	11	0.0000071669771
		1	0.30080	1	11	0.0000180736646
		2	1.34713	1	11	0.0000809427387
Coffey	1,696	0	0.03976	5	11	0.0000106560892
Franklin	1,494	0	0.03976	4	11	0.0000096774979
		1	0.30080	2	11	0.0000366070342
Linn	1,570	0	0.03976	2	11	0.0000046045165
		1	0.30080	1	11	0.0000174174870
		2	1.34713	1	11	0.0000780040533
		4	20.08652	1	11	0.0011630874349
Miami	1,528	0	0.03976	2	11	0.0000047310804
		1	0.30080	1	11	0.0000178962399
Osage	1,820	0	0.03976	9	11	0.0000178741259
		1	0.30080	3	11	0.0000450749251
		2	1.34713	1	11	0.0000672892108
		3	5.931	1	11	0.0002962537463
Shawnee	1,440	0	0.03976	6	11	0.0000150606061
		1	0.30080	1	11	0.0000189898990

	Probability
Tornado	3.21

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Tornado Consequence Analysis

Subject	Ranking	Impacts of Tornado
Health and Safety of Persons in the Area of the Incident	Severe	Impact of the immediate area could be severe depending on whether individuals were able to seek shelter and get out of the trajectory of the tornado. Casualties are dependent on warning systems and warning times.
Responders	Minimal	Impact to responders is expected to be minimal unless responders live within the affected area.
Continuity of Operations	Minimal to Severe	Temporary to permanent relocation may be necessary if government facilities experience damage.
Property, Facilities, and Infrastructure	Minimal to Severe	Localized impact could be severe in the trajectory path. Roads, buildings, and communications could be adversely affected. Damage could be severe.
Delivery of Services	Minimal to Severe	Delivery of services could be affected if there is any disruption to the roads and/or utilities due to damages sustained. Depending on the incident size the damage could be severe.
Environment	Minimal to Severe	Impact will be severe for the immediate impacted area. Impact will lessen as distance increases from the immediate incident area.
Economic Conditions	Minimal to Severe	Impacts to the economy will greatly depend on the trajectory of the tornado. If a jurisdiction takes a direct hit then the economic conditions will be severe. With an indirect hit the impact could be low to severe.
Public Confidence in Governance	Minimal to Severe	Response and recovery will be in question if not timely and effective. Warning systems and warning time will also be questioned.

3.7.19 UTILITY/INFRASTRUCTURE FAILURE

	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Utility/Infrastructure Failure	2.61	2.14	3.71	3.14	2.69

Description

Critical infrastructure involves several different types of facilities and systems including:

- Electric power
- Transportation routes
- Natural gas and oil pipelines
- Water and sewer systems, storage networks
- Internet/telecommunications systems

Failure of utilities or infrastructure components in east-central Kansas can seriously impact public health, functioning of communities and the region's economy. Disruptions to utilities can occur from many of the hazards detailed in this plan, but the most likely causes include:

- Floods
- Lightning
- Tornados and Windstorms
- Winter Storms

In addition to being impacted by another listed hazard, utilities and infrastructure can fail as a result of faulty equipment, lack of maintenance, degradation over time, or accidental damage.

	Warning Time
Utility / Infrastructure Failure	3.71

	Duration
Utility / Infrastructure Failure	3.14

Hazard Location

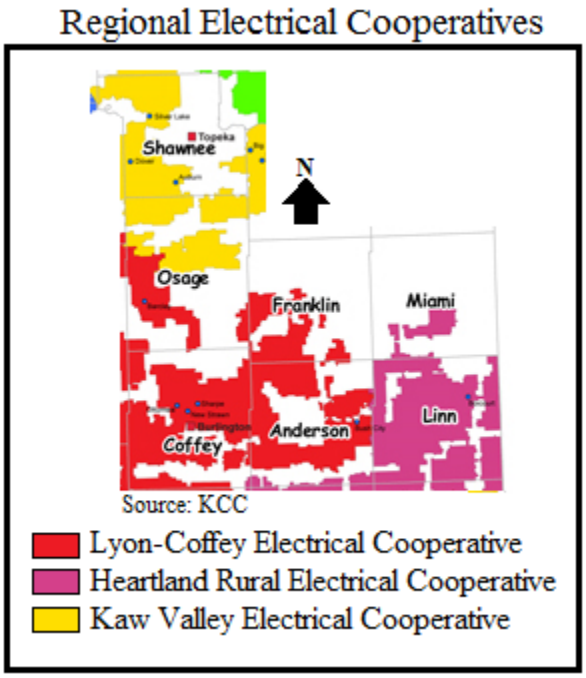
All of east-central Kansas is at risk for utility and/or infrastructure failure. The following sections discuss the major utilities in further detail.

Electric Power

The most common hazards analyzed in this plan that may disrupt the power supply are flood, lightning, tornado, windstorm, and winter weather. In addition, extreme heat can disrupt power supply when air conditioning use spikes during heat waves resulting in brownouts or rol ling blackouts.

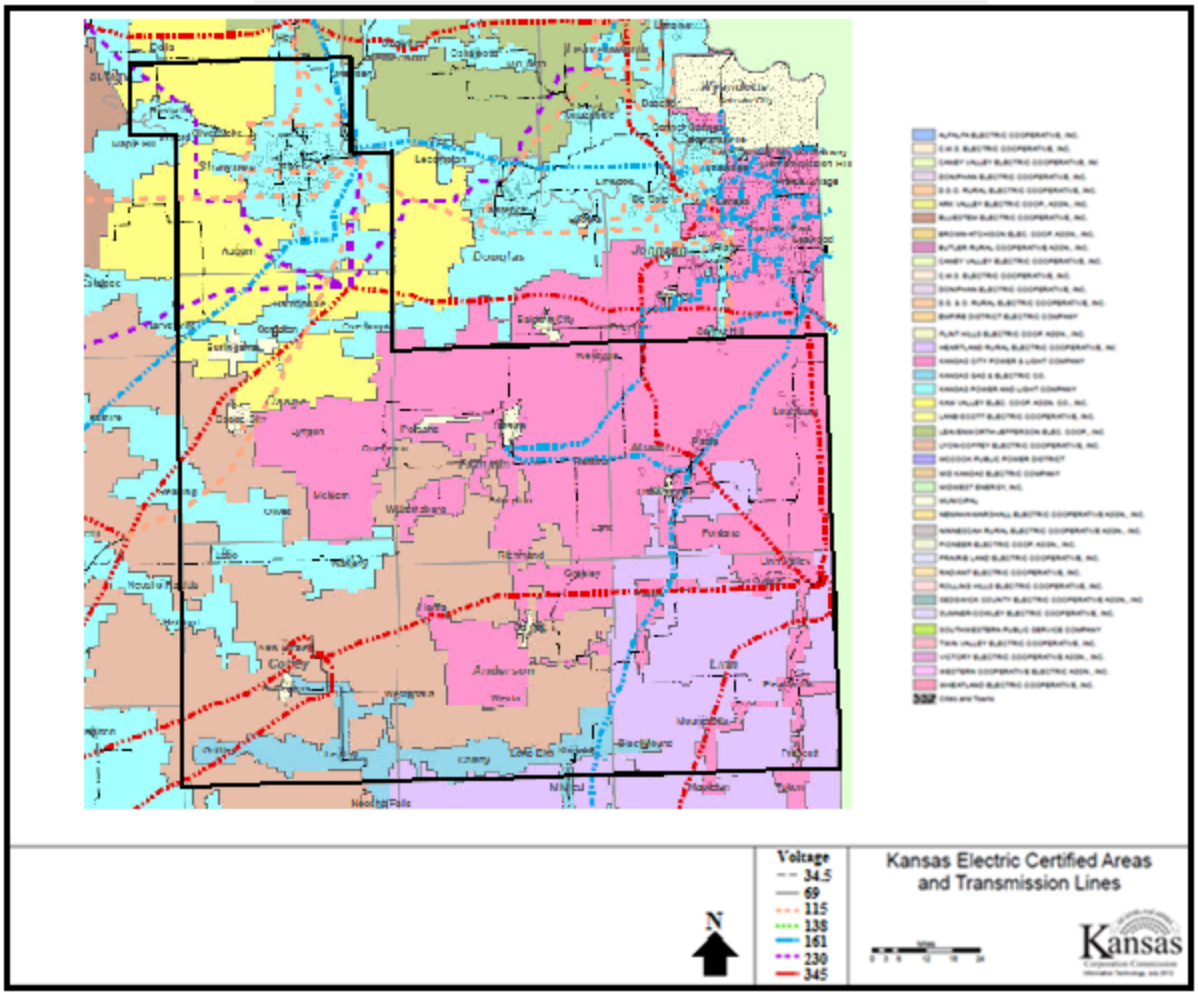
Electricity in east-central Kansas is provided by either investor-owned utilities or rural electric cooperatives. Electric utilities in Kansas are regulated by both the KCC and the Federal Energy Regulatory Commission.

Rural electric cooperatives (RECs) are not-for-profit, member-owned electric utilities. Distribution cooperatives deliver electricity to consumers. Generation and transmission cooperatives generate and transmit electricity to distribution co-ops. Kansas RECs are governed by a board of trustees elected from the membership. Most Kansas RECs were set up under the Kansas Electric Cooperative Act, which, together with the federal Rural Electrification Act of 1934, made electric power available to rural customers. RECs serving the area include the Heartland Rural Electrical Cooperative, the Kansas Electrical Power Cooperative, Topeka and the Lyon-Coffey Electric Cooperative. The following map shows the coverage are of regional RECs:

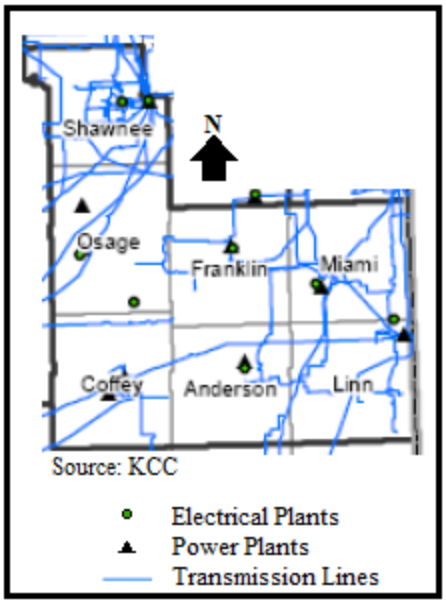


The following maps indicate the locations of electric certified areas, transmission lines and power plants in east-central Kansas.

Electric Certified Areas and Transmission Lines



Electrical Transmission Lines and Power Plants

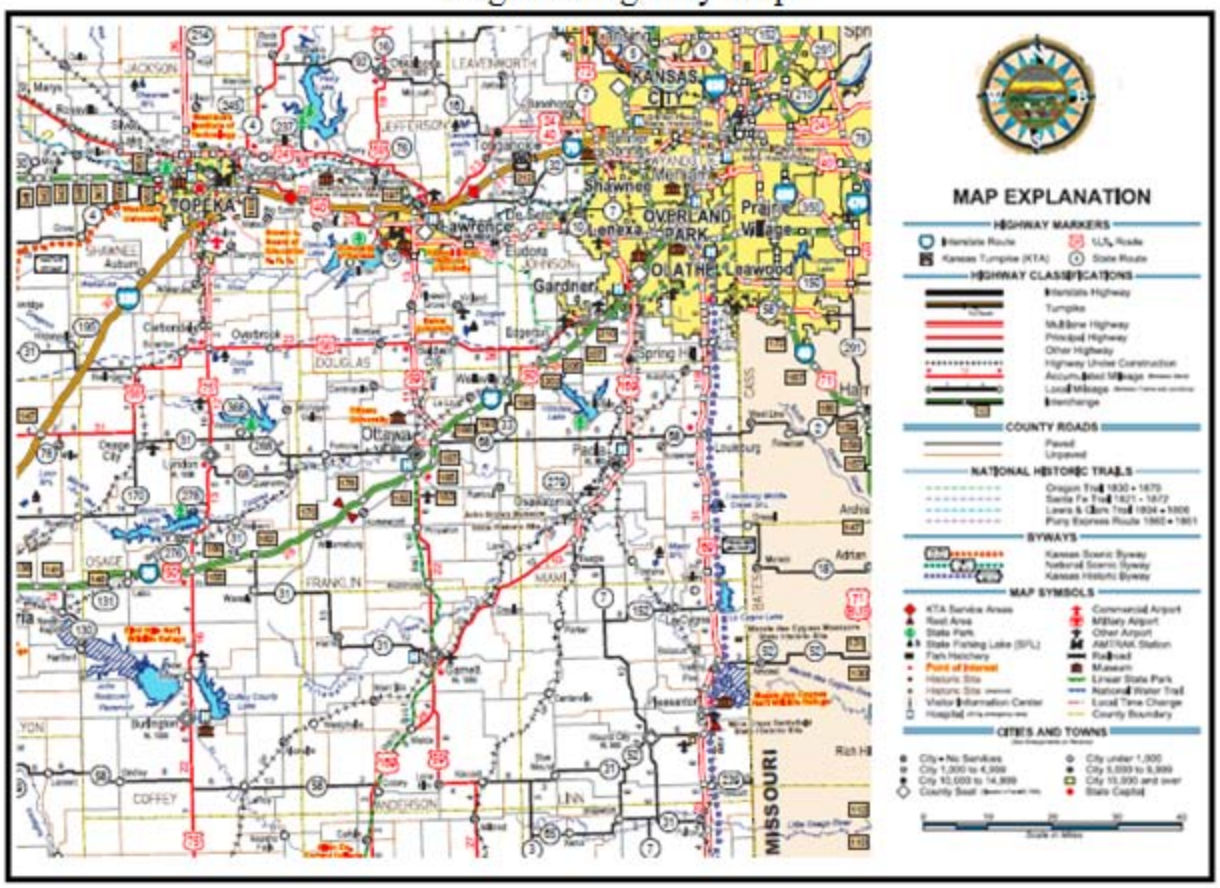


Transportation Routes

Transportation routes can also be impacted by many of the hazards discussed in this plan. The primary hazards that impact transportation are flood, hazardous materials, and winter weather. Flood events can make roads and bridges impassible due to high water. Flood waters can also erode or scour road beds and bridge abutments. Highway and railroad accidents that involve hazardous materials can impact transportation routes through closures and/or evacuations. Winter weather frequently impacts transportation as roads become treacherous or impassible due to ice and snow. Other hazards that impact transportation routes include dam and levee failures if routes are in inundation areas, extreme temperatures that can cause damage to pavement, land subsidence that can damage roads/railroads, landslides that can cause debris and rock falls onto roadways, terrorism that can target routes, tornados that can directly damage infrastructure or deposit debris in routes, wildfires that can cause decreased visibility on transportation routes due to smoke, and windstorms that can cause vehicle accidents or overturning.

The following figure shows the highways in east-central Kansas.

Regional Highway Map

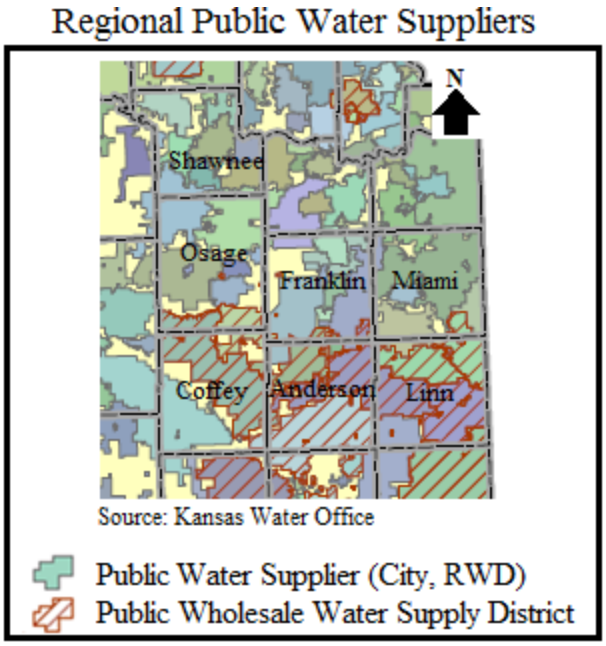


Natural Gas and Oil Pipelines

Hazards that can impact natural gas and oil pipelines include earthquakes, expansive soils, land subsidence, landslide, and terrorism. Natural gas and oil pipelines have been previously discussed.

Water and Sewer Systems

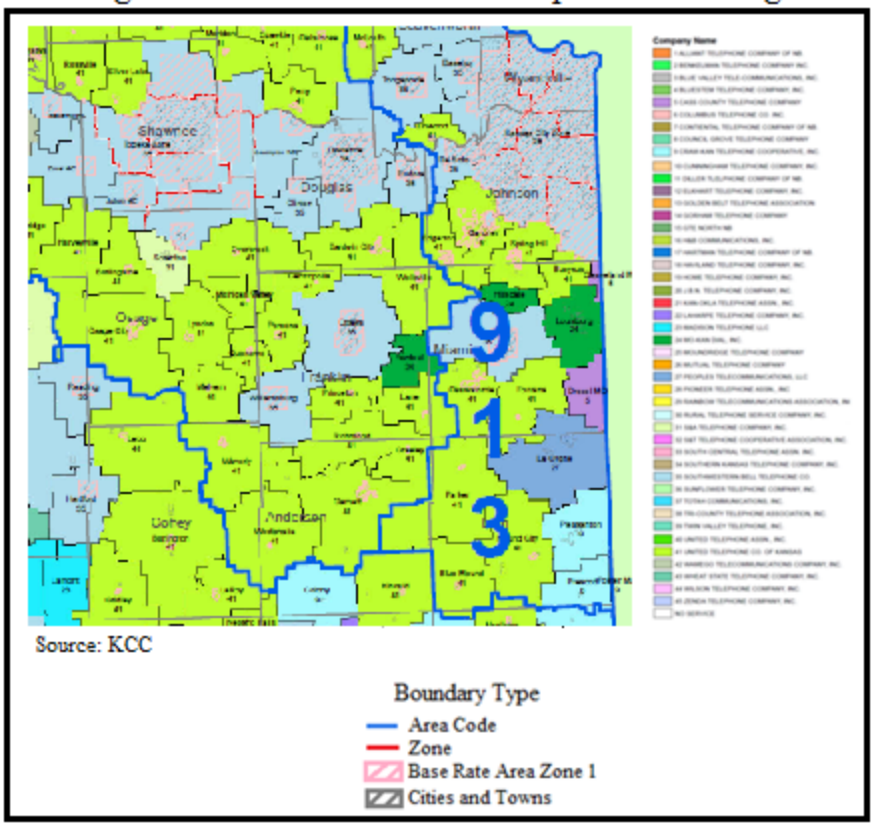
The primary hazards that can impact water supply systems include drought, floods, hazardous materials, and terrorism. The following figure provides a map of public water suppliers in east-central Kansas.



Internet and Telecommunications

Internet and telecommunications infrastructure can be impacted by floods, lightning, tornados, windstorms, and winter weather. Land line phone lines often utilize the same poles as electric lines, so when weather events such as windstorm or winter weather cause lines to break both electricity and telephone services may experience outages. With the increasing utilization of cellular phones, hazard events such as tornado that can damage cellular repeaters can cause outages. In addition, during any hazard event, internet and telecommunications systems can become overwhelmed due to the surge in call and usage volume. The following map indicates telephone service providers in east-central Kansas.

Regional Certified Areas of Telephone Exchanges



Previous Occurrences and Extent

Each year disruptions to utility services ranging from minor to serious are a secondary result of other hazard events including drought, flood, tornado, windstorm, winter storm, lightning, and extreme heat. The following provide discussions of previous events that resulted in a utility or infrastructure failure.

FEMA-4010-DR: Severe Storms, Straight-line Winds, Tornados, and Flooding: July 29, 2011: From May 10 to June 4, 2011 severe storms, straight-line winds, tornados, and flooding caused damages in 25 Kansas Counties. The primary impacts of this event were to public roads and bridges with an estimated $9,800,000 in damages.

FEMA-1932-DR: Severe Storms, Flooding, and Tornados: August 10, 2010: From June 7 to July 21, 2010, severe storms, flooding, and tornados caused damages in 41 Kansas Counties. The primary impacts of this event were to public roads and bridges with an estimated $11,200,000 in damages.

FEMA-1741-DR: February, 2008 (December 6-19, 2007): An ice storm caused numerous power outages and approximately 130,000 Kansas customers were without power. Specifically, Kansas Rural Electric Cooperatives reported 49,000 customers

without power, Westar reported 76,000 customers, Kansas City Power & Light reported 4,300 customers, and Kansas City, Kansas Board of Public Utilities reported 800 customers without power. FEMA's Public Assistance costs were $355,651,857 for this disaster.

FEMA-1626-DR: January 26, 2006 (November 27-28, 2005): Much of the state was affected by this storm. Winds of 40 to 60 mph combined with two to seven inches of snow resulted in a blizzard, which raged across parts of north central Kansas. The wind whipped the snow into drifts 10 to 15 feet high in some places. Interstate 70 was closed west of Russell, and numerous other highways were impassable during the storm. There were several reports of auto accidents, including a 25-car pileup, and sporadic power outages. At least three auto-related deaths were attributed to the storm. FEMA's Public Assistance costs were $50,281,517 for this disaster.

Local Events

Annually, last five years: City of La Cygne, Linn County: The city has experienced numerous power outages during times of extreme cold temperatures, extreme hot temperatures, snow and ice storms.

2012: USD #288, Central Heights, Franklin County: A utility failure impacted the school district.

January, 2009: City of Overbrook, Osage County: An undetected break in a waterline disrupted water service to the town.

Hazard Vulnerability and Impact

While every community in the region is at risk to utility/infrastructure failure, the vulnerability is somewhat mitigated in east-central Kansas due to the lower population density, development, and economic activities in large portions of the region that would be disrupted by a major infrastructure failure event. However, regional counties with major cities, such as Topeka, and high population densities, including Shawnee County, would be at greater risk for disruptions.

Regionally smaller utility suppliers generally have limited resources for mitigation. Thus, the large number of small electric providers could mean greater vulnerability in the event of a major, widespread disaster, such as a major flood, severe winter storm or ice storm. In recent years, regional electric power grid system failures in the western and east-centralern United States have demonstrated that similar failures could happen in east-central Kansas. This vulnerability is most appropriately addressed on a multi-state regional or national basis.

Since utility/infrastructure failure is generally a secondary or cascading impact of other hazards, it is not possible to quantify estimated potential losses specific to this hazard due to the variables associated with affected population, duration of outages, etc..

Although the limitless variables make it difficult to estimate future losses on a statewide basis, FEMA has developed standard loss of use estimates in conjunction with their Benefit-Cost Analysis methodologies to estimate the cost of lost utilities on a per-person, per-use basis.

FEMA Benefit-Cost Analysis

Loss of Electric Power	Cost of Complete Loss of Service
Total Economic Impact	$126 per person per day
Loss of Potable Water Service	Cost of Complete Loss of Service
Total Economic Impact	$93 per person per day
Loss of Wastewater Service	Cost of Complete Loss of Service
Total Economic Impact	$41 per person per day
Loss of Road/Bridge Service	Cost of Complete Loss of Service
Vehicle Delay Detour Time	$38.15 per vehicle per hour
Vehicle Delay Mileage	$0.55 per mile (or current federal mileage rate)

Source: FEMA BCA Reference Guide, June 2009, Appendix C

	Magnitude/Severity
Utility / Infrastructure Failure	2.14

Future Development

Future development and increases in population would increase the risk of this hazard. In addition, lack of maintenance and system upgrades could also increase the risk of this hazard occurring on a more frequent basis.

Probability of Future Hazard Events

Based on historical records, utility failures occur annually across the region. As such, the likelihood of a utility failure event occurring is likely within the next year.

	Probability
Utility / Infrastructure Failure	2.61

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Utility/Infrastructure Failure Consequence Analysis

Subject	Ranking	Impacts of Utility / Infrastructure Failure
Health and Safety of Persons in the Area of the Incident	Moderate to Severe	Localized impact will be moderate to severe for persons with functional and access needs, and the elderly, depending on length of failure and time of year.
Responders	Minimal	Impact to responders will be minimal if properly trained and equipped.
Continuity of Operations	Minimal	COOP plans are not expected to be activated If the recovery time is excessive then temporary relocation may become necessary.
Property, Facilities, and Infrastructure	Minimal	Impact is dependent on the nature of the incident, and electric, water, sewage, gas and communication disruptions.
Delivery of Services	Minimal	Delivery of services could be affected within and around the affected area.
Environment	Minimal	Impact should be minimal.
Economic Conditions	Minimal	Economic conditions could be adversely affected depending on extent of damage.
Public Confidence in Governance	Minimal	Impact will be dependent on whether response, recovery, and planning were timely and effective.

3.7.20 WILDFIRE

Hazard	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Wildfire	3.39	3.07	4.00	2.14	3.26

Description

Wildfires in east-central Kansas typically originate in pasture or prairie areas following the ignition of dry grasses (by natural or human sources). On occasion, ranchers and farmers intentionally ignite vegetation to restore soil nutrients or alter the existing vegetation growth. These fires have the potential to erupt into wildfires. Wildfires are also associated with lightning and drought conditions, as dry conditions make vegetation more flammable. Wildfires may also originate, or spread to forested areas, or other areas with concentrations of woody fuel that can cause wildfires to increase in intensity and spread. Since protecting people and structures takes priority, a wildfire's cost to natural resources, crops, and pastured livestock can be ecologically and economically devastating. In addition to the health and safety impacts to those directly affected by fires, the region is also concerned about the health effects of smoke emissions to surrounding areas.

The region experiences most of its wildfires in March and April when people are conducting controlled burns in grassland and fields. As the plant mass greens up later in the summer and the humidity is higher, the risk of wildfires is generally lower. This trend, however, does not continue in years of extreme drought when hot and dry weather prevail.

The wildland/urban interface is the area where human improvements such as homes, ranches and farms come in contact with the wildlands. Urban expansion has driven the increased building of homes in wildland areas. Wherever people are living in or adjacent to wildland areas, the threat of wildfire exists. As the rural population increases, so does the risk to life and property from wildfire.

	Warning Time
Wildfire	4.00

	Duration
Wildfire	2.14

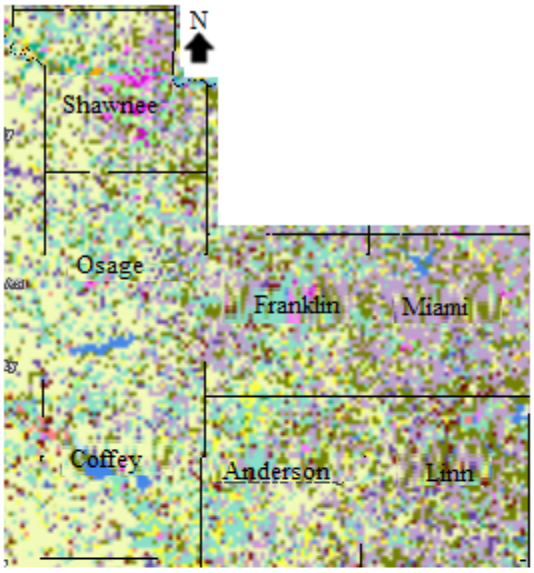
Hazard Location

Wildfires in east-central Kansas typically originate in pasture or prairie areas following the ignition of dry grasses (by natural or human sources). The Eastern Red Cedar is of concern in areas of east-central Kansas. This invasive evergreen species can take over fence rows and un-planted fields, adding to wildfire fuel and risk. Additionally, this type of fuel, as well as other tree plantings near structures can cause structures to be consumed by wildfires, putting inhabitants at risk.

Due to the primarily rural and agricultural characteristics of the region, as well as the existence of wild land and grassland areas, the entire region is susceptible to wildfires. However, due to lower population densities in large areas of the region the number of people potentially affected by a wildfire is often minimal. Additionally, due to the built up nature of the larger cities in the region, the risk of wildfires in these areas is also lower.

According to the 2011 *Kansas Forest Action Plan*, with the exception of Eastern Redcedar/hardwood, most forest types in Kansas do not pose significant fire management issues. However, grasslands which make up a majority of the open areas in east-central Kansas due pose fire management issues. These areas, and the wild land-urban interface where development has occurred, are the focus of wild land fire management issues in Kansas. The following figure shows the land cover in east-central Kansas

East-Central Kansas Land Cover Map

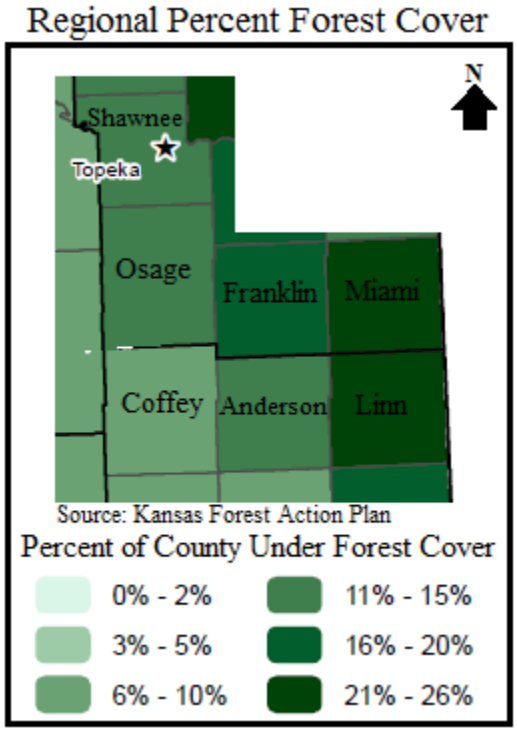


Source: Kansas Applied Remote Sensing Program

Kansas Land Cover Patterns (2005) - Level IV

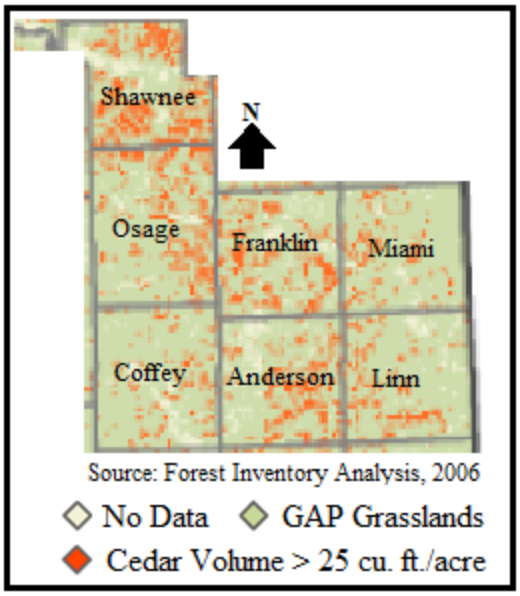
- Urban Industrial/Commercial
- Urban Residential
- Urban Openland
- Urban Woodland
- Urban Water
- Periodic Emergent Vegetation
- Woodland
- Water
- Other
- Non-Irrigated Corn
- Irrigated Corn
- Non-Irrigated Soybean
- Irrigated Soybean
- Non-Irrigated Sorghum
- Fallow
- Double-Crop
- Conservation Reserve Program (CRP) Land
- Warm-Season Grassland
- Cool-Season Grassland
- Irrigated Sorghum
- Non-Irrigated Winter Wheat
- Irrigated Winter Wheat
- Non-Irrigated Alfalfa
- Irrigated Alfalfa

Forests have increased in volume by a billion cubic feet and in density by 106 percent since 1965 with an estimated 74 million dry tons of total biomass. Growing stock volume has been increasing steadily for the past 40 years. The average age of Kansas forests is getting younger with the majority of volume and trees occurring between 30 and 59 years of age. The following figure shows the percent forest cover in east-central Kansas counties.



Although Eastern Redcedar makes up less than 4 percent of forest types, it has increased in volume by 23,000 percent since 1965 and is the primary specie of concern in grasslands. The following figure shows the occurrence of Eastern Redcedar by volume.

Regional Occurence of Eastern Redcedar by Volume



Previous Occurrences and Extent

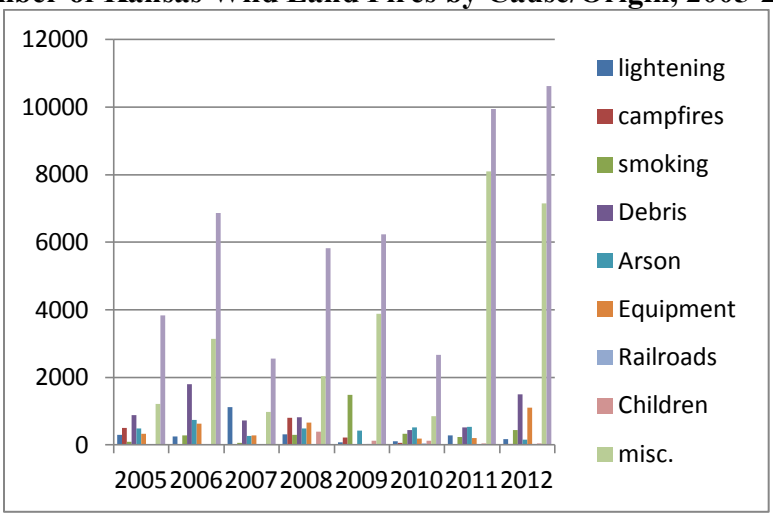
The following provide brief details on notable regional wildfire events.

> **2012**: More than 41,000 acres and 26 structures burned across the state from April through September due to extreme drought conditions. This places 2012 as one of the worst years for wildfires in Kansas on record.

Hazard Vulnerability and Impact

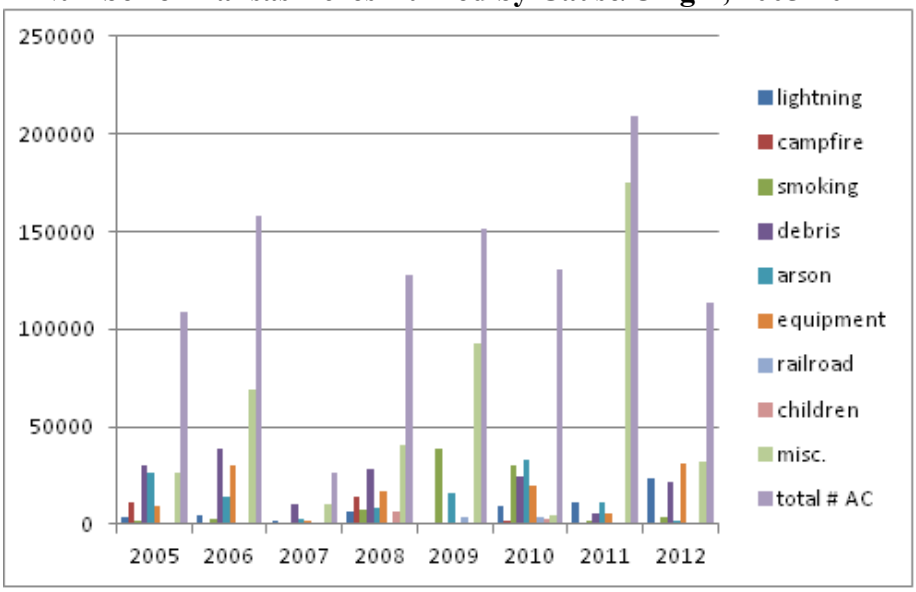
The Kansas Forest Service provided the following charts based on statistics from the National Fire Incident Reporting System regarding occurrence of wildfires in Kansas from 2005-2012. The first figure provides the total number of wild land fires in Kansas by cause/origin and the second figure provides the number of acres burned in Kansas each year by cause/origin.

Number of Kansas Wild Land Fires by Cause/Origin, 2005-2012



Source: Kansas Forest Service

Number of Kansas Acres Burned by Cause/Origin, 2005-2012



Source: Kansas Forest Service

USDA's Risk Management Agency on Crop insurance payments for loss of crops due to wildfire indicates that no payments were made as a result of wildfires to the east-central Kansas region.

Although some data is available from the National Fire Incident Reporting System (NFIRS) in terms of previous events, this data has limitations in providing useful statistical data for an overview regional vulnerability analysis. The most problematic issues are that not all fire departments report to NFIRS and of those that report, not all incidents are reported. This current lack of local level requirements and a past lack of enforcement of state statutes has led to a lack of fire occurrence data for both prescribed burns and wildfires being available in east-central Kansas. Changes in enforcement of wildfire reporting requirements at the state level, as well as

prescribed fire reporting requirements that are part of the EPA-mandated Kansas Flint Hills Smoke Management Plan (approved in 2011) will give the Kansas Forest Service a much greater opportunity to begin using real-time fire occurrence data to assist in making the best fire management decisions.

In light of the data limitations associated with available statistics, and with the publication of the 2011 *Kansas Forest Action Plan*, it has been determined that the best available data for the regional vulnerability analysis is the weighted sum analysis that was completed and utilized to develop a wildfire risk composite layer as part of the Forest Action Plan. The weighted sum analysis combined six data layers produced from a combination of eight separate datasets. In close consultation with the Kansas Forest Service's Fire Management Coordinator and other Fire Management staff six data inputs were developed to represent Wildfire Risk in Kansas. These data inputs and their corresponding analysis weight are listed below:

Kansas Forest Action Plan Wildfire Data Sets and Weighted Sums

Data Set	Analysis Weight
Wildland Urban Interface	0.85
ISO Fire Station Coverage Gaps	0.75
Conservation Reserve Program Lands	0.60
Eastern Redcedar in Grasslands	0.75
Moderate Fire Potential risk	0.53
High Fire Potential risk	0.80

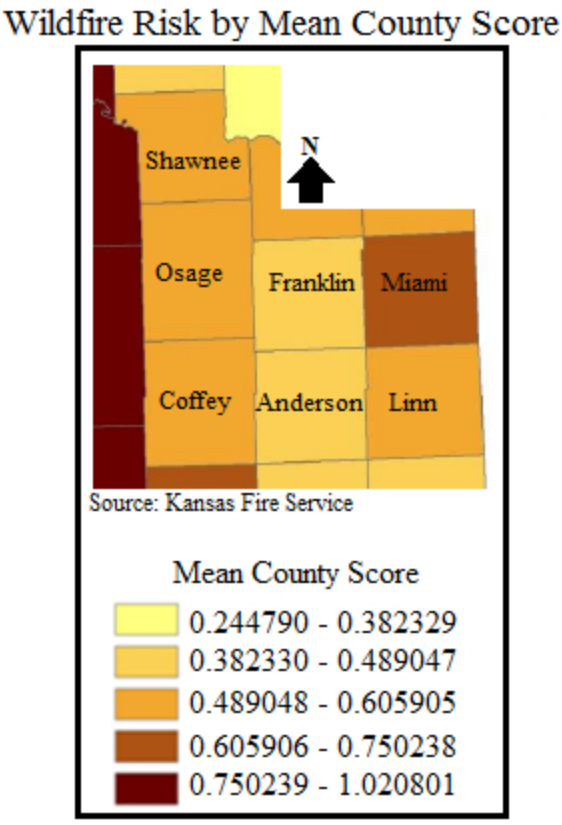
Source: *Kansas Forest Action Plan*,

The resulting score contains values ranging from 0 to 3.48, with the higher the numbers indicating higher wildfire risk. The following table provides the mean score for each county within the east-central Kansas region.

Wildfire Risk Score

County	Mean Wildfire Risk Score
Anderson	0.40381976962
Coffey	0.58299744129
Franklin	0.48104989529
Linn	0.54418075085
Miami	0.62391990423
Osage	0.53426063061
Shawnee	0.52085530758
Region Average	0.52729767135

The following figure provides a map indicating the mean score for each county.

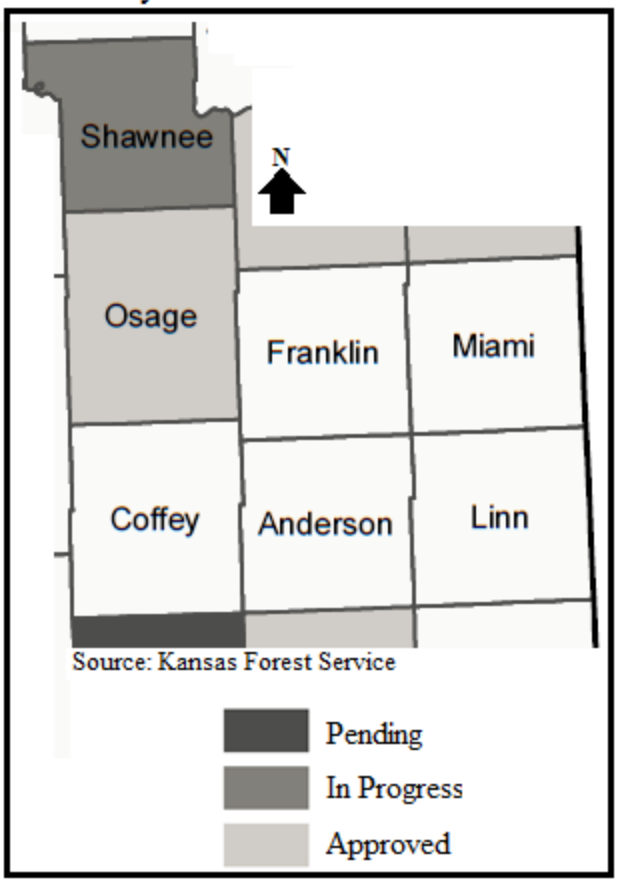


Community Wildfire Protection Plans

One way for communities at risk to wildfire to reduce their overall vulnerability is development of Community Wildfire Protection Plans (CWPP) to identify specific areas at risk and actions that can be taken to reduce risk. The Healthy Forests Restoration Act (HFRA) provided communities with an opportunity to influence where and how federal agencies implement fuel reduction projects on federal lands. A CWPP is the most effective way to take advantage of this opportunity. Additionally, communities with Community Wildfire Protection Plans in place are given priority for funding of HFRA hazardous fuels reduction projects.

The following figure shows the status of CWPPs in east-central Kansas counties.

Community Wildfire Protection Plan Status



	Magnitude/Severity
Wildfire	3.07

Future Development

Future development and increases in population would tend to increase the risk of this hazard. As cities continue to expand they often build in areas that are prone to wildfires and may not have adequate fire coverage.

Probability of Future Hazard Events

Wildfires occur on a n annual basis in the region. Although wildfires occur every year, the outlook through December 2013 for east-central Kansas from the National Interagency Fire Center Predictive Services for a w ildfire event in Kansas that will require mobilization of additional resources from outside the area in which the fire situation originated is considered to be in the normal range.

	Probability
Wildfire	3.39

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Wildfire Consequence Analysis

Subject	Ranking	Impacts of Wildfire
Health and Safety of Persons in the Area of the Incident	Severe	Impact of the immediate area could be severe for affected areas.
Responders	Minimal to Severe	Impact to responders icould be severe depending on the size and scope of the fire, especially for fire fighters. Impact will be low to moderate for support responders with the main threat being smoke inhalation.
Continuity of Operations	Minimal to Severe	Temporary relocation may be necessary if government facilities experience damage.
Property, Facilities, and Infrastructure	Severe	Localized impact could be severe to facilities and infrastructure in the incident area as all are vulnerable to destruction by wildfire.
Delivery of Services	Minimal to Severe	Delivery of services could be affected if there is any disruption to the roads and/or utilities due to damages sustained.
Environment	Severe	Impact will be severe for the immediate area with regards to trees, bushes, animals, and crops. Impact will lessen as distance increases.
Economic Conditions	Minimal to Moderate	Impacts to the economy could be moderate in the immediate area.
Public Confidence in Governance	Minimal to Severe	Response and recovery will be in question if not timely and effective. Evacuation orders and shelter availability could be called in to question.

3.7.21 WINDSTORM

Hazard	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Windstorm	3.61	2.61	3.00	2.00	3.06

Description

Relatively frequent strong winds are a weather characteristic of east-central Kansas. High winds, often accompanying severe thunderstorms, can cause significant property and crop damage, threaten public safety, and have adverse economic impacts from business closures and power loss.

Straight-line winds are generally any thunderstorm wind that is not associated with rotation. It is these winds, which can exceed 100 mph that represent the most common type of severe weather and are responsible for most wind damage related to thunderstorms. Since thunderstorms do not have narrow tracks like tornados, the associated wind damage can be extensive and affect entire counties or regions. Objects like trees, barns, outbuildings, high-profile vehicles, and power lines/poles can be toppled or destroyed, and roofs, windows, and homes can be damaged as wind speeds increase. In 2005, hail and wind damage made up 45% of homeowners' insurance losses. One type of straight-line wind is the downburst, which can cause damage equivalent to a strong tornado and can be extremely dangerous to aviation.

Thunderstorms over east-central Kansas typically happen between late April and early September, but, given the right conditions, they can develop as early as March. They are usually produced by super-cell thunderstorms or a line of thunderstorms that typically develop on hot and humid days.

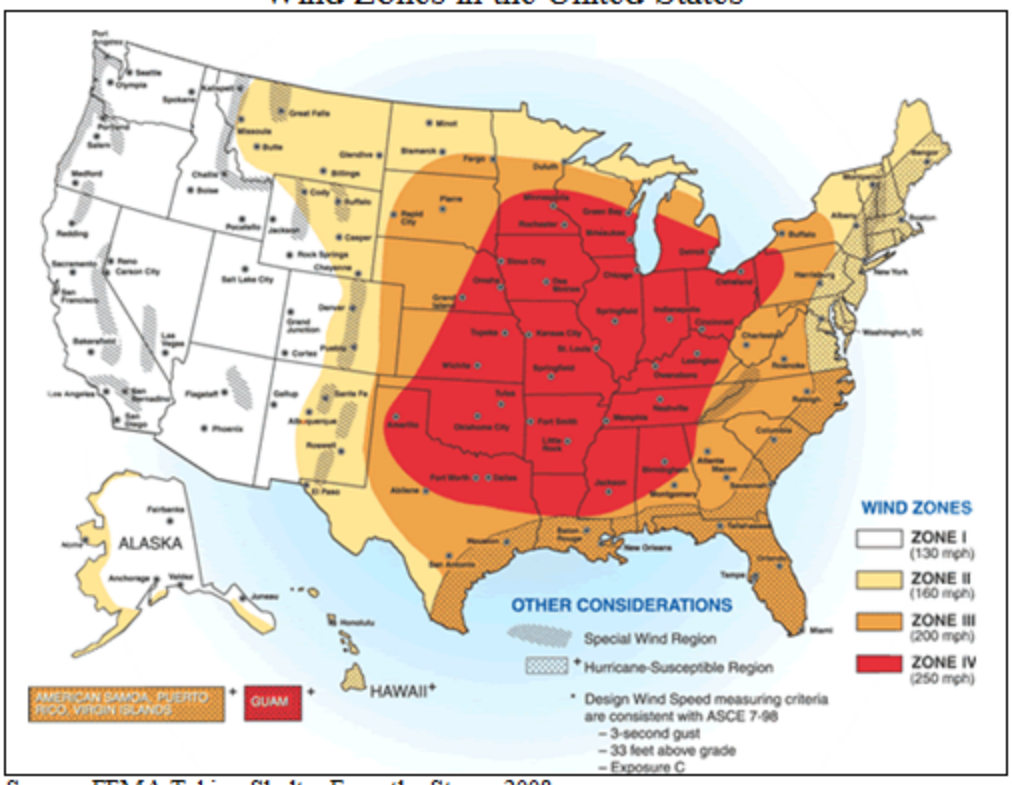
	Warning Time
Windstorm	3.00

	Duration
Windstorm	2.00

Hazard Location

The following figure shows the wind zones of the United States based on maximum wind speeds. East-central Kansas is located within wind zones IV, the highest inland category.

Wind Zones in the United States



Source: FEMA Taking Shelter From the Storm, 2008

Previous Occurrences and Extent

The following are notable high wind events that have occurred in the region.

August 8, 2012: A significant downburst occurred near Forbes Field in south Topeka causing damage and power outages. Also two tractor-trailers overturned due to the high winds.

June, 2010: Osage City and Burlingame, Osage County: A windstorm damaged buildings and trees and caused a loss of farm income.

July 8, 2009: Several power poles, permanent structures, outbuildings, and trees were heavily damaged when a strong thunderstorm went through the area. The heaviest damage occurred at Ottawa Airport where a hangar filled with a collection of small aircraft collapsed. The hangar and aircraft all sustained heavy damage. The NWS survey crew could not get an exact number of power poles that were snapped, but can estimate over 100 destroyed power poles.

June 16, 2006: Severe thunderstorms produced straight line winds of 60 to 75 mph across Morris, Dickinson, Lyon, Wabaunsee, and Shawnee Counties. Damage to trees and structures was reported.

April 2002: Winds in Shawnee County exceeded 60 m ph, and many homes and businesses were damaged. Shawnee County damages totaled approximately $2 million.

March 2002: A storm caused property damage in several areas of the state. In Topeka, downburst winds damaged 40 cars at an automobile dealership. Several farm structures were damaged near Altamont.

September 7, 2001: Winds estimated from 70 to 100 mph tore across east-central Kansas damaging numerous trees and several structures. Damage was especially significant in and around the Lawrence, Baldwin City, Ottawa, and Garnett communities.

According to the NCDC Storm Events database, there were 465 high wind, strong wind and thunderstorm wind events in east-central Kansas between 2003 and 2013. The average recorded high wind over that period was 73 mph, with the strongest wind measured at 78 mph. Total property damage for events between 2003 and 2013 is estimated at $9,181,500 with an estimated $40,000 in crop damages The data reported below is from the NCDC who receives storm data from the NWS, which receives information` from a variety of sources, which include but are not limited to county, state, and federal emergency management officials, local law enforcement officials, Skywarn spotters, NWS damage surveys, newspaper clipping services, the insurance industry and the general public. The wind events represent wind reports, not necessarily individual storms, and thus likely over count the actual number of windstorms.

NCDC Wind Events, 2003- 2013

County	Number of Days with Wind Events	Strongest Measured Wind (Knots)	Total Property Damage	Total Crop Damage
Anderson	23	71	$25,500	$0
Coffey	40	78	$298,000	$0
Franklin	35	83	$645,000	$0
Linn	19	61	$218,200	$0
Miami	20	78	$65,600	$0
Osage	45	80	$73,000	$2,000
Shawnee	53	70	$1,756,000	$10,000
Regional Total	235	74 (Average)	$3,081,300	$12,000

Source: NCDC Storm Events Database

Local Events:

The following detail locally reported events:

February 9, 2013: Osage County: A windstorm caused a Roof to be blown off USD 421 Gym. Additionally, the high wind caused damage in rural Osage City and roof damage building city of Carbondale.

February 9, 2009: City of Burlingame, Osage County: High winds blew the roof off the USD #421 gym, damaged structures in rural areas and damaged buildings in Carbondale.

July, 2008: USD 365 - Garnett, Anderson County: A windstorm damaged trees on school campuses.

June 2, 2008: Miami County: Thunderstorm winds of between 60 and 80 mph were reported in Osawatomie. The winds caused $1,000 in property damage, but did not result in any crop damage, fatalities, or injuries.

Hazard Vulnerability and Impact

All counties in east-central Kansas are vulnerable to windstorms. To refine and access the relative vulnerability of each of east-central Kansas' counties to wind events, the region assigned ratings to pertinent factors that were examined at the county level. These factors are: social vulnerability index, prior events, prior annualized property damage, building exposure valuation, population density, crop exposure and annualized crop loss. Then a rating value of 1-10 was assigned to the data obtained for each factor and then weighted equally and factored together to obtain overall vulnerability scores for comparison and to determine the most vulnerable counties.

The following information was used for this analysis:

- Social Vulnerability Index for Kansas from the Hazards and Vulnerability Research Institute at the University of South Carolina
- National Climatic Data Center storm events 2006 – 2012
- U.S. Census Bureau (2010)
- USDA's Census of Agriculture (2007).

Vulnerability Factor Amounts for Wind

County	SoVI Rating (1-5)	Prior Events 2006-2012	Property Damages	Annualized Property Damages	Total Building Exposure ($000)	Population Density	Crop Exposure (2007 Census of Agriculture)	Crop Insurance Paid for Wind	Annualized Crop Insurance Paid
Anderson	3	26	$78,000	$11,143	$518,401	14	$33,029,000	$35,046	$3,505
Coffey	3	42	$323,000	$46,143	$670,953	13	$25,497,000	$8,374	$837
Franklin	2	48	$107,500	$15,357	$1,598,004	45	$32,349,000	$64,523	$6,452
Linn	2	12	$17,000	$2,429	$659,126	16	$13,053,000	$668	$67
Miami	1	14	$63,500	$9,071	$2,106,266	55	$27,726,000	$92,213	$9,221
Osage	2	45	$88,000	$12,571	$977,110	23	$27,618,000	$118,292	$11,829
Shawnee	2	79	$32,000	$4,571	$11,828,241	322	$32,959,000	$24,519	$2,452
Regional Total	-	266	$709,000	$101,286	$18,358,101	-	$192,231,000	$343,636	$34,364

Using the above information, a value of 1-10 was assigned to the data obtained for each factor and then weighted equally and factored together to obtain overall vulnerability scores for comparison and to determine the greatest vulnerable counties. The Social Vulnerability Index is in a range of 1- 5. To give Social Vulnerability Index the same weight as the other factors, the numbers were multiplied by two.

Wind Data Rating Determination

Ratings	Social Vulnerability	NCDC Prior Events	Annualized Property Damage	Building Exposure Valuation	Population Density	Crop Exposure	Annualized Crop Loss
1		9 - 34	$0 - $200,000	$117,421 - $4,492,825	1.6 - 116.3	0 - $18,548,500	19 - $40,800
2	1	35 - 56	$200,001 - $400,000	$4,492,826 - $8,868,229	116.4 - 231.1	$18,548,501 - $32,126,000	$40,801 - $81,576
3		57 - 78	$400,001 - $600,000	$8,868,230 - $13,243,634	231.2 - 345.9	$32,126,001 - $45,703,500	$81,577 - $122,352
4	2	79 - 100	$600,001 - $800,000	$13,243,635 - $17,619,039	346 - 460.7	$45,703,501 - $59,281,000	$122,353 - $163,128
5		101 - 122	$800,001 - $1,000,000	$17,619,040 - $21,994,444	460.8 - 575.5	$59,281,001 - $72,858,500	$163,129 - $203,904
6	3	123 - 144	$1,000,001 - $3,000,000	$21,994,445 - $26,369,848	575.6 - 690.3	$72,858,501 - $86,436,000	$203,905 - $244,680
7		145 - 165	$3,000,001 - $5,000,000	$26,369,849 - $30,745,253	690.4 - 805.1	$86,436,001 - $100,013,500	$244,681 - $285,456
8	4	166 - 187	$5,00,001 - $7,000,000	$30,745,254 - $35,120,658	805.2 - 919.9	$100,031,501 - $113,591,000	$285,457 - $326,232
9		188 - 209	$7,000,001 - $9,000,000	$35,120,659 - $39,496,062	920- 1,034.7	$113,591,001 - $127,168,500	$326,233 - $367,008
10	5	210 - 232	$9,000,001 - $25,460,428	$39,496,063 - $43,871,468	1,034.8 - 1,149.6	$127,168,501 - $140,746,000	$367,009 - $407,783

Based on the above ratings system, ranges were applied to each county to determine their potential vulnerability. The following related the scoring to a vulnerability assessment:

- **Low:** Score range of 9 -14
- **Medium-Low:** Score range of 15 - 19
- **Medium:** Score range of 20 - 24
- **Medium-High:** Score range of 25 - 29
- **High:** Score range of 30 - 35

The following table provides the factor's amount per county that are considered for w ind vulnerability.

Vulnerability of East-Central Kansas Counties to Wind

County	SoVi Rating	NCDC Prior Event Rating	Annualized Property Damage Rating	Bldg Exposure Valuation Rating	Population Density Rating	Crop Exposure Rating	Annualized Crop Loss Rating	Overall Vulnerability Rating	Wind Vulnerability
Anderson	6	1	1	1	1	3	1	14	Low
Coffey	6	2	1	1	1	2	1	14	Low
Franklin	4	2	1	1	1	3	1	13	Low
Linn	4	1	1	1	1	1	1	10	Low
Miami	2	1	1	1	1	2	1	9	Low
Osage	4	2	1	1	1	2	1	12	Low
Shawnee	4	4	1	3	3	3	1	19	Medium-Low

.

	Magnitude/Severity
Windstorm	2.61

Future Development

Future development projects should consider windstorm hazard at the planning, engineering and architectural design stage with the goal of reducing vulnerability.

Probability of Future Hazard Events

Available data suggests that east-central Kansas has experienced 235 high wind days over the 11 year period from 2003 to 2013, with a total damage amount of $3,081,300. This would equate to an average of 21 high wind days per year with an average loss of $280,119 per year. As such, the probability of this hazard occurring during future years is likely.

	Probability
Windstorm	3.61

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Windstorm Consequence Analysis

Subject	Ranking	Impacts of Windstorm
Health and Safety of Persons in the Area of the Incident	Minimal to Moderate	Impact of the immediate area could be minimal to moderate for affected areas.
Responders	Minimal	Impact to responders is expected to be minimal unless responders live within the affected area.
Continuity of Operations	Minimal	Temporary relocation may be necessary if government facilities experience damage.
Property, Facilities, and Infrastructure	Minimal to Severe	Localized impact could be minimal to moderate in the incident area. Utility lines would likely be severely affected.
Delivery of Services	Minimal	Delivery of services could be affected if there is any disruption to the roads and/or utilities..
Environment	Minimal to Severe	Impact may be severe for the immediate impacted area with regards to trees, bushes, and crops. Impact will lessen as distance increases from the immediate incident area.
Economic Conditions	Minimal to Severe	Impacts to the economy will greatly depend on the trajectory of the windstorm. Revenue could be impacted if businesses are halted due to structural damages and infrastructure damage.
Public Confidence in Governance	Minimal	Response and recovery will be in question if not timely and effective. Warning systems in place and the timeliness of those warnings could be questioned.

3.7.22 WINTER STORM

Hazard	Probability	Magnitude/Severity	Warning Time	Duration	CPRI
Winter Storm	3.54	2.82	2.00	3.29	3.07

Description

Winter storms in east-central Kansas usually come in the form of heavy snow or freezing rain. Regardless of form, they can have significant impacts to the region and its residents for days, weeks or months. They can immobilize a region by blocking roads and railways and closing airports, which can disrupt emergency and medical services, hamper the flow of supplies and isolate homes and farms. Heavy snow can collapse roofs and knock down trees and power lines. Unprotected livestock may be lost. Economic impacts include cost of snow removal, damage repair, business and crop losses, and power failures.

A major winter storm can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snowfall, and cold temperatures. The NWS describes different types of winter storm events as follows:

- **Blizzard**—Winds of 35 mph or more with snow and blowing snow reducing visibility to less than 1/4 mile for at least three hours.
- **Blowing Snow**—Wind-driven snow that reduces visibility. Blowing snow may be falling snow and/or snow on the ground picked up by the wind.
- **Snow Squalls**—Brief, intense snow showers accompanied by strong, gusty winds. Accumulation may be significant.
- **Snow Showers**—Snow falling at varying intensities for brief periods of time. Some accumulation is possible.
- **Freezing Rain**—Rain that falls onto a surface with a temperature below freezing. This causes it to freeze to surfaces forming a coating or glaze of ice. Most freezing-rain events are short lived and occur near sunrise between the months of December and March.
- **Sleet**—Rain drops that freeze into ice pellets before reaching the ground. Sleet usually bounces when hitting a surface and does not stick to objects.

Heavy accumulations of ice, often the result of freezing rain, can bring down trees, utility poles, and communications towers and disrupt communications and power for days. Even small accumulations of ice can be extremely dangerous to motorists and pedestrians.

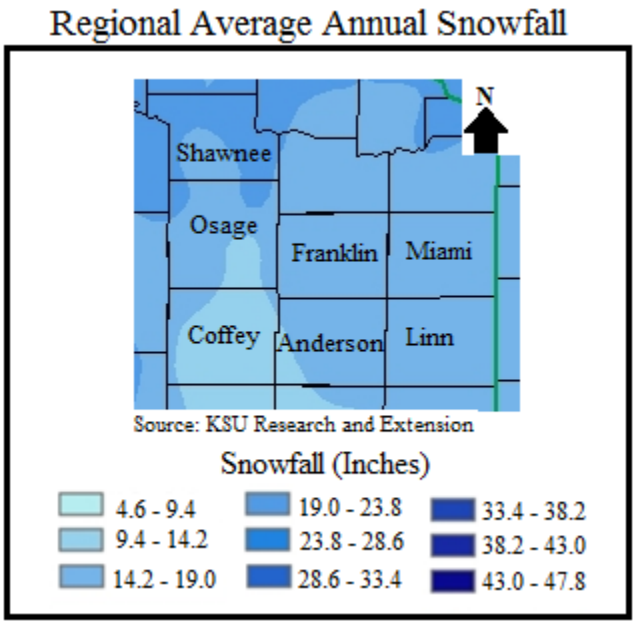
	Warning Time
Winter Storm	2.00

.

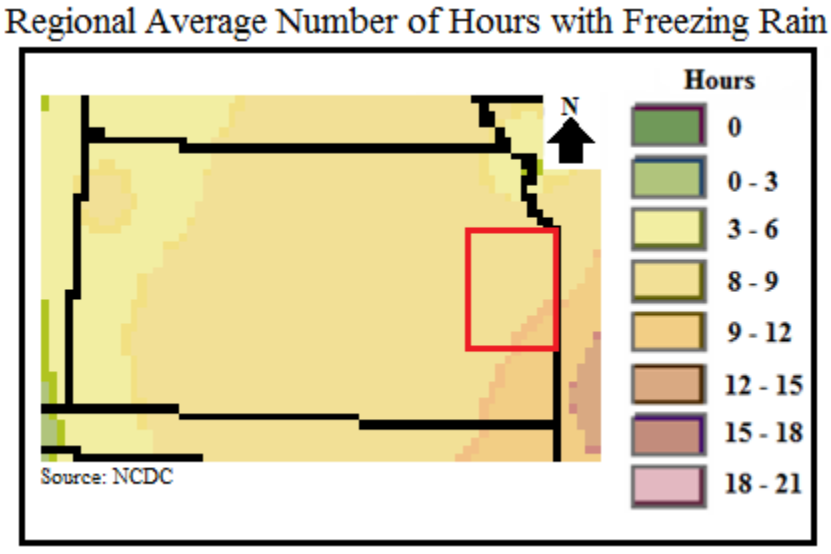
	Duration
Winter Storm	3.29

Hazard Location

The entire planning region is vulnerable to heavy snow and freezing rain. The following map illustrates the average annual snowfall for the region.



Freezing rains occurs frequently in east-central Kansas. The following map indicates the average number of hours of freezing rain per year.



In recent years, except the winter of 2011-2012, the weather patterns have created significant snow accumulations and ice storms throughout the region. Also future development could

potentially increase vulnerability to this hazard by increasing the demand on the utilities and increasing the exposure of aging infrastructure networks.

Previous Occurrences and Extent

The following table lists the five most recent presidential disaster declarations for east-central Kansas.

Presidential Disaster Declarations, Winter Storm

Declaration Number	Declaration Date*	Disaster Description	Regional Counties Involved	Disaster Cost**
4112	04/26/13 (02/20-23/2013)	Snowstorm	Franklin, Osage	$1,269,251
1885	03/09/2010 (12/9/2009-1/8/2010)	**Severe Winter Storms and Snowstorm**	Anderson, Franklin, Linn, Miami, Osage and Shawnee	$19,100,658
1848	06/24/2009 (3/26 - 3/29/2009)	**Severe Winter Storm and Record and Near Record Snow**	Coffey	$20,174,657
1741	02/01/2008 (12/6-12/19/2008)	**Severe Winter Storms**	Miami, Osage and Shawnee	$359,557,345
1579	2/8/2005 (1/4-6/2005)	**Severe Winter Storm, Heavy Rains, and Flooding**	Anderson, Coffey, Franklin, Osage and Shawnee	$106,873,672
1402	2/6/2002 (1/29-2/15/2002)	**Ice Storm**	Anderson, Coffey, Franklin, Linn, Miami, Osage and Shawnee	$60,185,754

Sources: FEMA and KDEM

* Incident dates are in parentheses.

** Disaster costs include Public Assistance and Individual Assistance for all impacted counties, including those not shown

The following are brief discussions of the above noted events.

FEMA-4112-DR: April 26, 2013 (February 20-23, 2013): A major winter storm impacted much of Kansas and Missouri on February 21 with very heavy snow and some sleet and freezing rain. Some areas received up to a foot of snow, placing this snow storm among the largest snow events in recent memory. Many locations reported thunder with heavy snow and sleet, with snowfall rates as high as 3 inches per hour. The very heavy snowfall rates created havoc on area roadways and many travelers became stuck and stranded. Many roads became clogged with stalled vehicles, essentially closing them down. Many motorists abandoned their cars altogether leaving roadways littered with snow-covered vehicles.

FEMA-1885-DR: March 9, 2010 (December 21, 2009 - January 10, 2010): Beginning December 22nd a strong, slow moving storm moved into the western Kansas leaving heavy snow causing icy and snow packed roads in portions of northwestern Kansas. The storm system continued easterly and continued to significantly impact portions of north central, northeastern, and southeastern areas of the State. This storm system created blizzard conditions with dangerously high winds causing blowing/drifting snow, treacherous travel conditions, and impassable roads. Two fatalities and three injuries occurred in two of the more severe accidents. FEMA Public Assistance funding for this disaster was $19,100,658.

FEMA-1848-DR— June 24, 2009 (March 26-29, 2009): A late March blizzard produced record or near record snowfall of one to two feet across parts of central, south central and southwest Kansas. The heavy snow and high wind resulted in blizzard conditions on Friday into Saturday. Meanwhile, significant accumulations of ice from freezing rain and sleet also affected the Flint Hills and southeast Kansas, with some snow accumulations before the wintry precipitation ended Saturday evening. Several areas reported power outages due to the snow, ice and wind. FEMA Public Assistance funding for this disaster was $20,174,657.

FEMA-1741-DR: February, 2008 (December 6-19, 2007): Winter weather started across central and southeast Kansas with two different ice storms that moved across the area and produced significant accumulations. The ice caused numerous power outage and approximately 130,000 Kansas customers were without power. Specifically, Kansas Rural Electric Cooperatives reported 49,000 customers without power, Westar reported 76,000 customers, Kansas City Power & Light reported 4,300 customers, and Kansas City, Kansas Board of Public Utilities reported 800 customers without power. Then a major winter storm moved through Kansas during the evening hours of December 14th and the heaviest snow targeted areas still suffering from the ice storm that hit earlier in the week. FEMA Public Assistance funding for this disaster was $355,651,857.

FEMA-1579-DR: February 8, 2005 (January 4-6): This was one of the worst ice storms on record to hit central, south central, and southeast Kansas. Although freezing rain was the primary culprit, sleet also played a vital role in coating nearly the entire region with one-two inches of ice, which caused incredible damage to trees, power lines, and power poles. Roads and highways were blocked by tree debris and downed power poles and lines. Many areas were without power for more than a week. Three deaths were

attributed to the storm. FEMA Public Assistance funding for this disaster was $106,873,672.

FEMA-1402-DR: Ice Storm—February 6, 2002 (January 29–February 15): Beginning on January 29, a three-day severe winter storm hit 35 Kansas counties in the southeast corner of the State with freezing rain, drizzle, sleet and snow. With one to two inches of ice accumulation, utility poles and power lines snapped, transportation was treacherous and fallen trees damaged many structures. The resulting power outages affected nearly the entire region and lasted nearly a week in some areas. Loss of power was particularly problematic for many nursing homes. There were seven fatalities. This was the worst ice storm in the metropolitan Kansas City area. FEMA Public Assistance funding for this disaster was $45,020,240.

The following provide further descriptions and other notable winter storm events.

November 29–December 1, 2006: A winter storm produced a period of freezing precipitation and sleet in east central Kansas on November 29 followed by snowfall of six to ten inches on the 30th through the early morning of December 1. Counties that were hit particularly hard include Franklin, Anderson, Coffey, Osage, Lyon, and Douglas. The storm also affected southeast Kansas where snowfall amounts exceeded 12 inches in some locations and almost paralyzed the area for a couple of days.

January 25-26, 2004: A wintry mix of freezing rain, sleet and snow fell across north central, northeast and east central Kansas. Ice accumulations of 1/4 to 1/2 of an inch were reported across northeast and parts of east central Kansas. The ice built up on trees and power lines and caused numerous power outages and downed limbs across north central and northeast Kansas. Slick roads led to numerous accidents across the region. Strong winds on the 26th caused near whiteout conditions as the snow blew and drifted.

March 18, 1984: Freezing rain, accompanied by lightning and thunder, accumulated to around an inch thick on trees, power lines, roads, and all exposed surfaces around Topeka. The heavy weight of the ice knocked out power to an estimated 100,000 people, most of the city of Topeka. A large television transmission tower collapsed under the weight of the ice, along with many trees and large tree branches. Destruction was widespread throughout the city. It was believed to be the most damaging ice storm in the city‘s history. Electricity was not restored in some areas for over a week.

According to the NCDC there were 180 winter storms (ice storm, winter storm and winter weather) in east-central Kansas between 2003 and 2013. Total property damage during that period was estimated by the NCDC at $334,000, whereas the total public assistance and individual assistance from the five Presidential Declarations listed above totaled over $599,935,119 for all involved counties, including the counties from the east-central Kansas region. This suggests that although there are more winter storm events recorded in NCDC than there have been declarations, and that damages to NCDC are likely under-reported.

NCDC Winter Storm Events, 2003 -2013

County	Number of Winter Storm and Weather Events	Total Property Damage Winter Weather and Storms	Number of Ice Storm Event	Total Property Damage, Ice Storms
Anderson	25	$6,235,000	0	$0
Coffey	27	$0	1	$0
Franklin	27	$0	0	$0
Linn	17	$1,000	3	$0
Miami	13	$1,000	2	$0
Osage	32	$0	2	$0
Shawnee	39	$0	1	$0
Regional Total	180	$6,237,000	9	$0

Source: NCDC Storm Events Database

Local Events

The following are locally reported events:

March 27, 2013: Osage County: An ice storm damaged power lines and trees in the county.

February and March, 2013: USD 365 - Garnett, Anderson County: Snow storms closed schools for a total of 6 days.

February 2013: City of New Strawn, Coffey County: A blizzard closed city hall and business in the city.

February 25-26, 2013: Linn County: A winter storm caused six of eight communities to be without power for hours/days. Two of eight communities with partial power, sewer systems inoperable in some cases. Building roof collapse, power lines down throughout county. In addition, roads drifted shut, schools closed, businesses closed. County spent about $1,000 opening warming stations in various communities during power outages through use of generators at County owned facilities. Dump truck totaled when snow plow harness on front failed during snow removal efforts. Plow went under truck destroying engine and undercarriage of truck.

February 25-26, 2013: City of Blue Mound, Linn County: Wet heavy snow event with high winds took out numerous power lines. City without power for 8 + hours. All businesses shut down, with the lost revenue unknown.

February 25, 2013: Franklin County: A winter storm cause damage to local roads and closed schools and businesses.

February 20-23, 2013: City of Pomona, Franklin County: A snow storm cause $17,000 in electrical damages. $1,229.74 in federal aid was received.

February 20, 2013: F ranklin County: A winter storm cause damage to local roads, closed county offices, schools and businesses.

February 1, 2011 : Osage County: A winter storm heavy snow 8 to 13 inches, blizzard conditions and drifting. B uildings were damaged and schools and businesses were closed.

February 1, 2011: Franklin County: A winter storm cause damage to local roads and closed schools and businesses.

January 7, 2010: F ranklin County: A winter storm cause damage to local roads and closed schools and businesses. Federal disaster relief was received.

December 22, 2009 - January 8, 2010: Osage County: Record snow fall, blizzard conditions and drifting closed schools and roads and damaged power lines causing power disruptions. In addition, schools and businesses were closed.

December 22, 2009 to January 8, 20 10: Linn County: A winter storm caused $339,737 in damages to county roads. State and federal disaster relief was received.

January 30, 2002: M iami County: A long-lived major ice and snow storm blasted much of eastern Kansas, January 29th through January 31st. Ice accumulations of 1 to 2 inches were observed. The results of the storm were devastating to many communities. A tremendous amount of people were without power for extended periods of time due to downed trees and tree limbs crippling power supplies in the affected areas. Property damage was reported to be $9,500,000, with no associated fatalities or injuries attributed to this event.

November 8, 2000 : Miami County: Freezing rain and sleet developed in east central Kansas late in the morning on November 8th, and continued through much of the night. Relatively warm ground temperatures prevented significant ice accumulation on roadways, but minor travel problems resulted. More significant accumulations of ice on elevated surfaces caused power outages and downed tree limbs. No damage, fatalities or injuries were attributed to this event.

December 21, 1997: M iami County: The combination of ra in and subfreezing temperatures caused icy roads and numerous traffic accidents throughout east-central Kansas. The Miami County Sheriff's office reported two people killed in traffic accidents as a result of the icy rain. No property damage was reported for this event.

Hazard Vulnerability and Impact

All counties in east-central Kansas are vulnerable to winter storms. To refine and access the relative vulnerability of each of east-central Kansas' counties to winter storm events, the region assigned ratings to pertinent factors that were examined at the county level. These factors are: social vulnerability index, prior events, prior annualized property damage, building exposure valuation, population density, crop exposure and annualized crop loss. Then a rating value of 1-10 was assigned to the data obtained for each factor and then weighted equally and factored together to obtain overall vulnerability scores for comparison and to determine the most vulnerable counties.

The following information was used for this analysis:

- Social Vulnerability Index for Kansas from the Hazards and Vulnerability Research Institute at the University of South Carolina
- National Climatic Data Center storm events 1993 – 2012
- U.S. Census Bureau (2010)
- USDA's Census of Agriculture (2007).

Vulnerability Factor Amounts for Winter Storm

County	SoVI Rating (1-5)	Prior Events 1993-2012	Property Damages	Annualized Property Damages	Total Building Exposure ($000)	Population Density	Crop Exposure (2007 Census of Agriculture)	Crop Insurance Paid for Wind	Annualized Crop Insurance Paid
Anderson	3	46	$18,082,000	$904,100	$518,401	14	$33,029,000	$1,708,726	$170,873
Coffey	3	61	$18,043,000	$902,150	$670,953	13	$25,497,000	$1,460,308	$146,031
Franklin	2	56	$18,048,000	$902,400	$1,598,004	45	$32,349,000	$972,452	$97,245
Linn	2	20	$9,771,000	$488,550	$659,126	16	$13,053,000	$690,019	$69,002
Miami	1	32	$9,520,000	$476,000	$2,106,266	55	$27,726,000	$484,797	$48,480
Osage	2	73	$18,248,000	$912,400	$977,110	23	$27,618,000	$849,551	$84,955
Shawnee	2	78	$18,377,000	$918,850	$11,828,241	322	$32,959,000	$192,209	$19,221
Regional Total		366	$110,089,000	$5,504,450	$18,358,101	-	$192,231,000	$6,358,062	$635,806

Using the above information, a value of 1-10 was assigned to the data obtained for each factor and then weighted equally and factored together to obtain overall vulnerability scores for comparison and to determine the greatest vulnerable counties. The Social Vulnerability Index is in a range of 1- 5. To give Social Vulnerability Index the same weight as the other factors, the numbers were multiplied by two.

Winter Storm Data Rating Determination

Ratings	Social Vulnerability	NCDC Prior Events	Annualized Property Damage	Building Exposure Valuation	Population Density	Crop Exposure	Annualized Crop Loss
1		14 - 21	$2,000 - $50,000	$117,421 - $4,492,825	1.6 - 116.3	0 - $18,548,500	0 - $200,000
2	1	21 - 29	$50,001 - $100,000	$4,492,826 - $8,868,229	116.4 - 231.1	$18,548,501 - $32,126,000	$200,001 - $400,000
3		30 - 36	$100,001 - $300,000	$8,868,230 - $13,243,634	231.2 - 345.9	$32,126,001 - $45,703,500	$400,000 - $600,000
4	2	37 - 44	$300,001 - $500,000	$13,243,635 - $17,619,039	346 - 460.7	$45,703,501 - $59,281,000	$600,001 - $800,000
5		45 - 52	$500,001 - $700,000	$17,619,040 - $21,994,444	460.8 - 575.5	$59,281,001 - $72,858,500	$800,001 - $1,000,000
6	3	53 - 60	$700,001 - $900,000	$21,994,445 - $26,369,848	575.6 - 690.3	$72,858,501 - $86,436,000	$1,100,001 - $1,300,000
7		61 - 69	$900,001 - $1,100,000	$26,369,849 - $30,745,253	690.4 - 805.1	$86,436,001 - $100,013,500	$1,300,001 - $1,500,000
8	4	70 - 77	$1,100,001 - $1,700,000	$30,745,254 - $35,120,658	805.2 - 919.9	$100,031,501 - $113,591,000	$1,500,001 - $1,700,000
9		78 - 85	$1,700,001 - $2,200,000	$35,120,659 - $39,496,062	920- 1,034.7	$113,591,001 - $127,168,500	$1,700,001 - $2,700,000
10	5	86 - 93	$2,200,001 - $2,800,000	$39,496,063 - $43,871,468	1,034.8 - 1,149.6	$127,168,501 - $140,746,000	$2,700,001 - $3,700,000

Based on the above ratings system, ranges were applied to each county to determine their potential vulnerability. The following related the scoring to a vulnerability assessment:

- **Low:** Score range of 13 -17
- **Medium-Low:** Score range of 18 - 22
- **Medium:** Score range of 23 - 27
- **Medium-High:** Score range of 28 - 32
- **High:** Score range of 33 - 37

The following table provides the factor's amount per county that are considered for winter storm vulnerability.

Regional Vulnerability to Winter Storms

County	SoVI Converted Rating	Prior Event Rating	Annualized Property Damage Rating	Bldg Exposure Valuation Rating	Population Density Rating	Crop Exposure Rating	Annualized Crop Insurance Rating	Overall Vulnerability Rating	Winter Storm Vulnerability
Anderson	6	5	7	1	1	3	1	24	Medium
Coffey	6	7	7	1	1	2	1	25	Medium
Franklin	4	6	7	1	1	3	1	23	Medium
Linn	4	1	4	1	1	1	1	13	Low
Miami	2	3	4	1	1	2	1	14	Low
Osage	4	8	7	1	1	2	1	24	Medium
Shawnee	4	9	7	3	3	3	1	30	Medium-High

In addition, the Kansas Department of Transportation (KDOT) incurs statewide annual costs for snow and ice removal. The average cost per year for snow and ice efforts for fiscal years 2008-2011 is $15,900,000 for labor, equipment and materials. However, the cost for snow and ice efforts in fiscal year 2012 was only $6,700,000 because it was a mild winter (source: Translines Express, KDOT, April 11, 2012).

	Magnitude/Severity
Winter Storm	2.82

Future Development

Future development projects should consider winter storm hazard at the planning, engineering and architectural design stage with the goal of reducing vulnerability.

Probability of Future Hazard Events

According to the NCDC there were 189 winter storms and blizzard events in east-central Kansas between 2003 and 2013. Based on this information, it is likely that at least one winter storm will occur in east-central Kansas in any given year.

	Probability
Winter Storm	3.54

Consequence Analysis

The information in the following table provides the Consequence Analysis.

Winter Storm Consequence Analysis

Subject	Ranking	Impacts of Winter Storm
Health and Safety of Persons in the Area of the Incident	Severe	Impact of the immediate area could be severe for affected areas and moderate to light for other less affected areas.
Responders	Minimal	Impact to responders could be severe for unprotected personnel and moderate to light for prepared personnel.
Continuity of Operations	Minimal	Minimal expectation of execution of the COOP.
Property, Facilities, and Infrastructure	Minimal to Severe	Localized impact to facilities and infrastructure in the incident area. Utility lines most affected.
Delivery of Services	Minimal to Severe	Delivery of services could be affected if there is any disruption to the roads and/or utilities due to damages sustained.
Environment	Severe	Greatest impact will be to trees, bushes, foliage, crops, and wildlife, which could be severe.
Economic Conditions	Minimal to Severe	Impacts to the economy will greatly depend on the severity of the winter storm, longevity of the storm, and any damages sustained such as utilities and roads.
Public Confidence in Governance	Minimal to Severe	Response and recovery will be in question if not timely and effective. Utility failure could be called in to question if outages are persistent.

3.8 DATA SOURCES

The following table details the data sources used for this section.

Data on the past impacts and future probability of these hazards in the east-central Kansas planning area was collected from the following sources:

- Bureau of Alcohol, Tobacco, Firearms and Explosives Standards
- Electronic Mass Casualty Assessment and Planning Scenarios developed by Johns Hopkins University
- Emergency Management Accreditation Program
- Environmental Protection Agency
- Federal Bureau of Investigation
- Federal Emergency Management Agency
- Federal Emergency Management Agency Benefit-Cost Analysis Reengineering Tornado Safe Room Module Methodology Report, Version 4.5 Final, Dated May 2009
- Federal Emergency Management Agency Flood Insurance Administration
- Federal Emergency Management Agency Flood Insurance Rate Maps
- Federal Emergency Management Agency HAZUS-Multi Hazard-2.1
- Federal Emergency Management Agency Mid-Term Levee Inventory
- Federal Emergency Management Agency National Flood Insurance Program
- Federal Emergency Management Agency National Flood Insurance Program
- Federal Emergency Management Agency "Local Mitigation Planning Handbook, March 2013"
- Federal Emergency Management Agency, Taking Shelter From the Storm, 2008
- Federal Emergency Management Agency's "Policy and Loss Data by Community with County and State Data"
- Federal Emergency Management Agency's Policy and Claim Statistics for Flood Insurance
- Hazards and Vulnerability Research Institute at the University of South Carolina
- Homeland Security Act of 2002
- Kansas Corporation Commission
- Kansas Data Access & Support Center
- Kansas Department of Agriculture, Division of Animal Health
- Kansas Department of Agriculture, Division of Water Resources
- Kansas Department of Agriculture, Division of Water Resources, Water Structures Program
- Kansas Department of Agriculture, Plant Protection and Weed Control Division
- Kansas Department of Health & Environment, Bureau of Water, Livestock Waste Management
- Kansas Department of Health and Environment "Subsurface Void Space and Sinkhole/Subsidence Area Inventory for the State of Kansas", 2006

- Kansas Department of Health and Environment Bureau of Epidemiology and Public Health Informatics
- Kansas Department of Health and Environment Surface Mining Section
- Kansas Department of Health and Environment, Division of Environment
- Kansas Department of Health and Environment's Kansas Environmental Public Health Tracking Program
- Kansas Division of Emergency Management
- Kansas Division of Emergency Management 2012 Kansas Severe Weather Awareness Week
- Kansas Division of Emergency Management, Technological Hazards Section
- Kansas Fire Service
- Kansas Flint Hills Smoke Management Plan
- Kansas Forest Action plan
- Kansas Forest Service
- Kansas Geological Survey
- Kansas Geological Survey, "Earthquakes in Kansas"
- Kansas Operations Plan
- Kansas Response Plan
- Kansas State University College of Engineering
- Kansas State University Research and Extension Climatic Map of Kansas
- Kansas Statutes Annotated
- Kansas Unified HazMat Response Program Statewide Contract # 35167
- Kansas Water Office
- Kansas Water Office Kansas Drought Stage Declarations
- Kansas Water Office, 2009 Kansas Water Plan
- Kansas Water Office, Kansas 2013 Drought Update
- Kansas University Geological Survey
- Kansas Commission on Emergency Planning and Response Annual Report, Managing the Risk: 2011
- Modified Mercalli Intensity Scale
- National Climatic Data Center
- National Dam Safety Act
- National Drought Mitigation Center Drought Impact Reporter
- National Fire Incident Reporting System
- National Fire Incident Reporting System
- National Interagency Fire Center Predictive Services
- National Oceanic and Atmospheric Administration Storm Prediction Center
- National Oceanic and Atmospheric Administration
- National Resources Conservation Service
- National Seismic Hazard Mapping Project
- National Weather Service
- National Weather Service Heat Index Program

- Oklahoma Climatological Survey
- Palmer Drought Severity Index
- Spatial Hazard Event and Loss Database
- Stanford University's National Performance of Dams Program
- "Surface Water in Kansas and its Interactions with Groundwater" 2000 M . A. Sophocleous, B. B. Wilson
- "The Annual Impact of Seasonal Influenza in the US: Measuring Disease Burden and Costs" by NA Molinari
- The Southern Poverty Law Center
- Tornado and Storm Research Organization
- Translines Express, Kansas Department of Transportation, April 11, 2012
- United States Army Corps of Engineers
- United States Army Corps of Engineers Levee Safety Program
- United States Army Corps of Engineers National Levee Database
- United States Bureau of Reclamation
- United States Census Bureau
- United States Census Bureau
- United States Census Bureau American Community Survey 2005 – 2009
- United States Centers for Disease Control and Prevention
- United States Department of Agriculture 2011 Kansas Crop Insurance Profile Report
- United States Department of Agriculture National Resources Inventory
- United States Department of Agriculture, Division of Water Resources
- United States Department of Agriculture, National Agricultural Statistics Service
- United States Department of Agriculture, Risk Management Agency
- United States Department of Agriculture's Census of Agriculture
- United States Department of Transportation Pipeline and Hazardous Materials Safety Administration
- United States Drought Monitor
- United States Fish and Wildlife Service
- United States Geological Survey Fact Sheet, "Water Use in Kansas 1990-2000"
- United States Geological Survey, Earthquake Hazards Program
- University of Kansas Institute for Policy and Social Research
- USA Patriot Act
- Vaisala's National Lightning Detection Network
- Other agencies and data collections as noted

4.0 CAPABILITY ASSESSMENT

4.1 INTRODUCTION

44 CFR 201.6 does not require a capability assessment to be completed for local hazard mitigation plans. However, 201.6(c)(3) states "A mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tool."

This section of the plan discusses the current capacity of the communities of east-central Kansas to mitigate the effects of identified hazards. A capability assessment is conducted to determine the ability of a jurisdiction to execute a comprehensive mitigation strategy, and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs or projects. This assessment includes a comprehensive examination of the following capabilities:

- Planning Capabilities
- Policies and Ordinances
- Programs
- Studies, Reports and Maps
- Departmental Staff
- Non-Governmental Organizations (NGOs)
- Financial Resources

A capability assessment helps to determine which mitigation actions are practical based on a jurisdictions fiscal, staffing and political resources. A capability assessment consists of:

- An inventory of relevant plans, ordinances, or programs already in place
- An analysis capacity to carry them out.

A thoughtful review of jurisdictional capabilities will assist in determining gaps that could limit current or proposed mitigation activities, or potentially aggravate a jurisdictions vulnerability to an identified hazard. Additionally, a capability assessment can detail current successful mitigation actions that should continue to receive support.

For the 2014 update each participating jurisdiction was given an opportunity to review and revise their capability assessment information presented from their previous plan.

4.2 METHODOLOGY

In order to facilitate this plan update and consolidation the following capability questions were asked of participating jurisdictions:

Planning Capabilities

Comprehensive Plan
Capital Improvement Plan
City Emergency Operations Plan
County Emergency Operations Plan
Local Recovery Plan
County Recovery Plan
Debris Management Plan
Economic Development Plan
Transportation Plan
Land-use Plan
Flood Mitigation Assistance Plan
Watershed Plan
Firewise or other fire mitigation plan
Critical Facilities Plan (Mitigation/Response/Recovery)

Policies/Ordinances

Zoning Ordinance
Building Code
Floodplain Ordinance
Subdivision Ordinance
Tree Trimming Ordinance
Nuisance Ordinance
Storm Water Ordinance
Drainage Ordinance
Site Plan Review Requirements
Historic Preservation Ordinance
Landscape Ordinance
Wetlands / Riparian Areas Conservation Plan

Programs

Zoning/Land Use Restrictions
Codes Building Site/Design
Hazard Awareness Program
National Flood Insurance Program
Community Rating System program under the NFIP
National Weather Service Storm Ready Certification
Firewise Community Certification
Building Code Effectiveness Grading
ISO Fire Rating
Economic Development Program
Land Use Program
Public Education/Awareness

Programs, Continued

Property Acquisition
Planning/Zoning Boards
Stream Maintenance Program
Tree Trimming Program
Engineering Studies for Streams (Local/County/Regional)
Mutual Aid Agreements

Studies/Reports/Maps

Hazard Analysis/Risk Assessment (City)
Hazard Analysis/Risk Assessment (County)
Evacuation Route Map
Critical Facilities Inventory
Vulnerable Population Inventory
Land Use Map

Staff/Department

Building Code Official
Building Inspector
Mapping Specialist (GIS)
Engineer
Development Planner
Public Works Official
Emergency Management Coordinator
NFIP Floodplain Administrator
Bomb and/or Arson Squad
Emergency Response Team
Hazardous Materials Expert
Local Emergency Planning Committee
County Emergency Management Commission
Sanitation Department
Transportation Department
Economic Development Department
Housing Department
Historic Preservation

NGOs

American Red Cross
Salvation Army
Veterans Groups
Local Environmental Organization
Homeowner Associations
Neighborhood Associations
Chamber of Commerce
Community Organizations (Lions, Kiwanis, etc.)

4.0 CAPABILITY ASSESSMENT

4.1 INTRODUCTION

44 CFR 201.6 does not require a capability assessment to be completed for local hazard mitigation plans. However, 201.6(c)(3) states "A mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tool."

This section of the plan discusses the current capacity of the communities of east-central Kansas to mitigate the effects of identified hazards. A capability assessment is conducted to determine the ability of a jurisdiction to execute a comprehensive mitigation strategy, and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs or projects. This assessment includes a comprehensive examination of the following capabilities:

- Planning Capabilities
- Policies and Ordinances
- Programs
- Studies, Reports and Maps
- Departmental Staff
- Non-Governmental Organizations (NGOs)
- Financial Resources

A capability assessment helps to determine which mitigation actions are practical based on a jurisdictions fiscal, staffing and political resources. A capability assessment consists of:

- An inventory of relevant plans, ordinances, or programs already in place
- An analysis capacity to carry them out.

A thoughtful review of jurisdictional capabilities will assist in determining gaps that could limit current or proposed mitigation activities, or potentially aggravate a jurisdictions vulnerability to an identified hazard. Additionally, a capability assessment can detail current successful mitigation actions that should continue to receive support.

For the 2014 update each participating jurisdiction was given an opportunity to review and revise their capability assessment information presented from their previous plan.

4.2 METHODOLOGY

In order to facilitate this plan update and consolidation the following capability questions were asked of participating jurisdictions:

Planning Capabilities

Comprehensive Plan
Capital Improvement Plan
City Emergency Operations Plan
County Emergency Operations Plan
Local Recovery Plan
County Recovery Plan
Debris Management Plan
Economic Development Plan
Transportation Plan
Land-use Plan
Flood Mitigation Assistance Plan
Watershed Plan
Firewise or other fire mitigation plan
Critical Facilities Plan (Mitigation/Response/Recovery)

Policies/Ordinances

Zoning Ordinance
Building Code
Floodplain Ordinance
Subdivision Ordinance
Tree Trimming Ordinance
Nuisance Ordinance
Storm Water Ordinance
Drainage Ordinance
Site Plan Review Requirements
Historic Preservation Ordinance
Landscape Ordinance
Wetlands / Riparian Areas Conservation Plan

Programs

Zoning/Land Use Restrictions
Codes Building Site/Design
Hazard Awareness Program
National Flood Insurance Program
Community Rating System program under the NFIP
National Weather Service Storm Ready Certification
Firewise Community Certification
Building Code Effectiveness Grading
ISO Fire Rating
Economic Development Program
Land Use Program
Public Education/Awareness

Programs, Continued

Property Acquisition
Planning/Zoning Boards
Stream Maintenance Program
Tree Trimming Program
Engineering Studies for Streams (Local/County/Regional)
Mutual Aid Agreements

Studies/Reports/Maps

Hazard Analysis/Risk Assessment (City)
Hazard Analysis/Risk Assessment (County)
Evacuation Route Map
Critical Facilities Inventory
Vulnerable Population Inventory
Land Use Map

Staff/Department

Building Code Official
Building Inspector
Mapping Specialist (GIS)
Engineer
Development Planner
Public Works Official
Emergency Management Coordinator
NFIP Floodplain Administrator
Bomb and/or Arson Squad
Emergency Response Team
Hazardous Materials Expert
Local Emergency Planning Committee
County Emergency Management Commission
Sanitation Department
Transportation Department
Economic Development Department
Housing Department
Historic Preservation

NGOs

American Red Cross
Salvation Army
Veterans Groups
Local Environmental Organization
Homeowner Associations
Neighborhood Associations
Chamber of Commerce
Community Organizations (Lions, Kiwanis, etc.)

Financial Resources

Apply for Community Development Block Grants
Fund projects thru Capital Improvements funding
Authority to levy taxes for specific purposes
Fees for water, sewer, gas, or electric services
Impact fees for new development
Incur debt through general obligation bonds
Incur debt through special tax bonds
Incur debt through private activities
Withhold spending in hazard prone areas

Gathering this information from participating east-central Kansas jurisdictions assisted in assessing capabilities and served as a guide to potential future changes to create robust policies, procedures, plans and teams to strengthen hazard mitigation planning.

4.3 REGIONAL SCHOOLS, COLLEGES AND UNIVERSITIES

In order to facilitate this plan update and consolidation the following capability questions were asked of participating jurisdictions:

Schools, Colleges and Universities Capability Questions

Full-time building official (i.e. Principal)
Emergency Manager
Grant Writer
Public Information Officer
Capital improvements project funding
Local funds
General obligation bonds
Special tax bonds
Private activities/donations
State and federal funds

4.4 GOVERNANCE

The planning area is comprised of sevn counties in east-central Kansas, along with participating jurisdictions within those counties. All of the counties in the planning area operate under a county commissioner form of governance. In this form of government, the elected board of commissioners oversee county operations. The following table details each counties form of governance.

County Governance

Jurisdiction	Government Structure	Number of Commissioners
Anderson County	Commission	3
Coffey County	Commission	5
Franklin County	Commission	5
Linn County	Commission	3
Miami County	Commission	5
Osage County	Commission	3
Shawnee County	Commission	3

In general, the participating towns and cities operate either under a Mayoral form of governance or an elected city council form of governance.

4.5 JURISDICTIONAL CAPABILITIES

Information as to the current capacity of participating jurisdictions is summarized in the following sections and tables. All capability information was provided by jurisdictional officials through the above referenced questions and through outreach from the HMPC.

The ability of a local government to develop and implement mitigation projects, policies, and programs is directly tied to its ability to direct staff time and resources for that purpose. Administrative capability can be evaluated by determining how mitigation-related activities are assigned to local departments and if there are adequate personnel resources to complete these activities. The degree of intergovernmental coordination among departments will also affect administrative capability for the implementation and success of proposed mitigation activities.

Many smaller jurisdictions have very limited to no planning, management, response or mitigation capabilities. Often these jurisdiction rely on the county or nearby larger municipalities for assistance. This lack of capabilities is reflected in the following tables. Additionally, many very small or extremely limited participating small jurisdictions, largely townships, are not listed on the capability list. **This in no way diminishes the participation in the process of these jurisdictions.** Finally, special district capabilities are included in their overarching counties.

In implementing a mitigation plan or specific action, a local jurisdiction may utilize any or all of the four broad types of government authority granted by the State of Kansas. The four types are defined as:

- Regulation
- Acquisition
- Taxation
- Spending

Regulation

The scope of this local authority is subject to constraints, however, as all of Kansas' political subdivisions must not act without proper delegation from the State. Under a principle known as "Dillon's Rule," all power is vested in the State and can only be exercised by local governments to the extent it is delegated.

Acquisition

The power of acquisition can be a useful tool for pursuing local mitigation goals. Local governments may find the most effective method for completely "hazard-proofing" a particular piece of property or area is to acquire the property, thus removing the property from the private market and eliminating or reducing the possibility of inappropriate development occurring. Kansas legislation empowers cities, towns, counties to acquire property for public purpose by gift, grant, devise, bequest, exchange, purchase, lease or eminent domain (County Home Rule Powers, K.S.A. 19-101, 19-101a, 19-212).

Taxation

The power to levy taxes and special assessments is an important tool delegated to local governments by Kansas law. The power of taxation extends beyond merely the collection of revenue, and can have a profound impact on the pattern of development in the community. Communities have the power to set preferential tax rates for areas which are more suitable for development in order to discourage development in otherwise hazardous areas. Local units of government also have the authority to levy special assessments on property owners for all or part of the costs of acquiring, constructing, reconstructing, extending or otherwise building or improving flood control within a designated area. This can serve to increase the cost of building in such areas, thereby discouraging development. Because the usual methods of apportionment seem mechanical and arbitrary, and because the tax burden on a particular piece of property is often quite large, the major constraint in using special assessments is political. Special assessments seem to offer little in terms of control over land use in developing areas. They can, however, be used to finance the provision of necessary services within municipal or county boundaries. In addition, they are useful in distributing to the new property owners the costs of the infrastructure required by new development.

Spending

The Kansas General Assembly allocated the ability to local governments to make expenditures in the public interest. Hazard mitigation principles can be made a routine part of all spending decisions made by the local government, including the adoption of annual budgets and a Capital Improvement Plan. A Capital Improvement Plan is a schedule for the provision of municipal or county services over a specified period of time. Capital programming, by itself, can be used as a growth management technique, with a view to hazard mitigation. By tentatively committing itself to a timetable for the provision of capital to extend services, a community can control growth to some extent. In addition to formulating a timetable for the provision of services, a local community can regulate the extension of and access to services. A Capital Improvement

Plan that is coordinated with extension and access policies can provide a significant degree of control over the location and timing of growth. These tools can also influence the cost of growth. If the Capital Improvement Plan is effective in directing growth away from environmentally sensitive or high hazard areas.

4.5.1 PLANNING CAPABILITIES

The planning capability assessment is designed to provide a general overview of the key planning and regulatory tools or programs in place or under development. This information helps identify opportunities to address existing planning gaps and provides an opportunity to review areas that mitigation planning actions can be utilized with existing plans. Jurisdictions were asked if they had completed the following plans:

Comprehensive Plan

A comprehensive plan establishes the overall vision for a jurisdiction and serves as a guide to governmental decision making. A comprehensive plan generally contains information on demographics, land use, transportation, and facilities. As a comprehensive plan is broad in scope the integration of hazard mitigation measures can enhance the likelihood of achieving risk reduction goals.

Capital Improvement Plan

A capital improvement plan guides scheduling of, and spending on, public improvements. A capital improvement plan can guide future development away from identified hazard areas, an effective mitigation strategy.

Emergency Operations Plan

An emergency operations plan outlines responsibilities, means and methods by which resources are deployed during and following an emergency or disaster.

Recovery Plan

A disaster recovery plan guides the recovery and reconstruction process following a disaster. Hazard mitigation principles should be incorporated into disaster recovery plans to assist in breaking the cycle of disaster loss.

Debris Management Plan

A debris management plan covers the response and recovery from debris-causing incidents such as tornados or floods. Planning considerations include debris removal and disposal, disposal locations, equipment availability, and personnel training.

Economic Development Plan

An economic development plan assists in advancing a strong and sustainable economy over the long term. This plan provides strategies, programs, and policies that will foster the jurisdictions business climate.

Transportation Plan

A transportation plan aids with the evaluation, review, design and locating of transportation infrastructure, including streets, highways, public transport lines, and transportation centers.

Land Use Plan

Land-use planning is used to regulate land use in an efficient and equitable manner, and to assist jurisdictions in managing the development of land within their boundaries.

Flood Mitigation Assistance Plan

The purpose of the flood mitigation assistance plan is to reduce or eliminate the long-term risk of flood damage to buildings and other structures insured under the National Flood Insurance Program.

Watershed Management Plan

A watershed management plan is used to provide assessment and management information for a geographically defined watershed.

Fire Mitigation Plan

A fire mitigation plan is used to mitigate a jurisdictions wildfire risk and vulnerability The plan documents areas with an elevated risk of wildfires, and identifies the actions taken to decrease the risk.

Critical Facilities Plan

A critical facilities plan is used to identify a jurisdictions critical facilities, including fire stations, police stations, hospitals, schools, day care centers, senior care facilities, major roads and bridges, critical utility sites, and hazardous material storage areas. Additionally, this plan is used to determine methods to mitigate damage to these facilities.

The table below summarizes relevant local planning capabilities.

Jurisdictional Planning Capabilities

Jurisdiction	Comprehensive Plan	Capital Improvement Plan	City Emergency Operations Plan	County Emergency Operations Plan	Local Recovery Plan	County Recovery Plan	Debris Management Plan	Economic Development Plan	Transportation Plan	Land-use Plan	Flood Mitigation Assistance Plan	Watershed Plan	Firewise or other Fire Mitigation Plan	Critical Facilities Plan (Mitigation/ Response/ Recovery)
Anderson County		x		x				x				x		
City of Colony														
City of Garnett	x	x	x	x	x	x	x	x	x	x	x	x	x	x
City of Greeley														
City of Kincaid														
City of Westphalia				x		x								
Coffey County		x		x				x				x		x
City of Burlington	x	x												
City of Gridley														
City of Lebo	x		x											
City of LeRoy														
City of New Strawn			x											
City of Waverly											x	x		
Franklin County				x			x							
City of Lane				x							x			x
City of Ottawa	x	x	x						x	x	x	x		x
City of Pomona	x	x		x						x				
City of Princeton		x		x										

Jurisdiction	Comprehensive Plan	Capital Improvement Plan	City Emergency Operations Plan	County Emergency Operations Plan	Local Recovery Plan	County Recovery Plan	Debris Management Plan	Economic Development Plan	Transportation Plan	Land-use Plan	Flood Mitigation Assistance Plan	Watershed Plan	Firewise or other Fire Mitigation Plan	Critical Facilities Plan (Mitigation/ Response/ Recovery)
City of Rantoul														
City of Richmond	x									x				
City of Wellsville	x	x		x				x		x	x			
City of Williamsburg							x			x				
Linn County	x			x				x						
City of Blue Mound			x											
City of La Cygne	x											x		
City of Linn Valley	x													
City of Mound City	x													
City of Parker	x								x	x	x			
City of Pleasanton	x		x											
City of Prescott	x													
Miami County	x			x			x	x	x	x				
City of Fontana														
City of Louisburg	x	x	x	x		x								
City of Osawatomie	x	x		x			x	x						
City of Paola	x	x						x	x	x	x			

Jurisdiction	Comprehensive Plan	Capital Improvement Plan	City Emergency Operations Plan	County Emergency Operations Plan	Local Recovery Plan	County Recovery Plan	Debris Management Plan	Economic Development Plan	Transportation Plan	Land-use Plan	Flood Mitigation Assistance Plan	Watershed Plan	Firewise or other Fire Mitigation Plan	Critical Facilities Plan (Mitigation/ Response/ Recovery)
Osage County				x				x		x	x			
City of Burlingame		x								x				
City of Carbondale					x									
City of Lyndon	x	x												
City of Melvern	x													
City of Osage	x	x						x		x				
City of Overbrook	x	x	x	x				x						
City of Quenemo														
City of Scranton				x									x	
Shawnee County	x		x	x			x	x		x	x	x		x
City of Auburn	x	x	x											
City of Rossville	x	x	x	x	x	x	x	x		x	x		x	x
City of Silver Lake	x													
City of Topeka	x	x	x	x	x	x	x	x	x		x	x	x	x

4.5.2 POLICIES AND ORDINANCES

Based on the types of state of Kansas government authority granted, participating jurisdictions were asked if the following ordinances and plans were enacted and enforced.

Zoning

Zoning is the traditional and most common tool available to local jurisdictions to control the use of land. State of Kansas statutes grant municipalities and counties authority to engage in zoning for land use. Counties may also regulate inside municipal jurisdiction at the request of a municipality. Zoning is used to promote health, safety, and the general welfare of the community. Zoning is used to dictate the type of land use and to set minimum specifications for use such as lot size, building height and setbacks, and density of population. Local governments are authorized to divide their jurisdiction into districts, and to regulate and restrict the erection, construction, reconstruction, alteration, repair or use of buildings, structures, or land within those districts. Districts may include general use districts, overlay districts, special use districts or conditional use districts. Zoning ordinances consist of maps and written text.

Building Code

Many structural mitigation measures involve constructing and retrofitting homes, businesses and other structures according to standards designed to make the buildings more resilient to the impacts of natural hazards. Many of these standards are imposed through the building code. Kansas does not have state mandatory building codes. However, municipalities and counties may adopt codes for their respective areas if approved by the state as providing "adequate minimum standards." Local governments in Kansas are also empowered to carry out building inspections, and may empower cities and counties to create an inspection department to enforce construction codes and ordinances.

Floodplain Ordinance

In 1992 the Kansas General Assembly approved legislation for floodplain management (Kansas Statutes Annotated 12-766, “Floodplain Management”) authorizing the Department of Agriculture, Division of Water Resources as the primary department to oversee and approve local zoning regulation. The regulation requires planning and approval to prevent inappropriate development in the one hundred-year floodplain and to reduce flood hazards. The purpose of the law is to:

- Minimize the extent of floods by preventing obstructions that inhibit water flow and increase flood height and damage.
- Prevent and minimize loss of life, injuries, and property damage in flood hazard areas.
- Promote the public health, safety and welfare of citizens of Kansas in flood hazard areas.

The statute affects local governments by directing them to:

- Manage planned growth
- Adopt local ordinances to regulate uses in flood hazard areas
- Enforce those ordinances
- Grant permits for use in flood hazard areas that are consistent with the ordinance

The act also makes certain that local ordinances meet the minimum requirements of participation in the NFIP. The incentive for local governments adopting such ordinances is that they will afford their residents the ability to purchase flood insurance through the NFIP. In addition, communities with such ordinances in place will be given priority in the consideration of applications for loans and grants from the Clean Water Revolving Loan and Grant Fund.

Subdivision Ordinance

Subdivision regulations control the division of land into parcels for the purpose of building development or sale. Flood-related subdivision controls typically require that sub-dividers install adequate drainage facilities and design water and sewer systems to minimize flood damage and contamination. They prohibit the subdivision of land subject to flooding unless flood hazards are overcome through filling or other measures, and they prohibit filling of floodway areas. Subdivision regulations require that subdivision plans be approved prior to the division and/or sale of land. Subdivision regulations are a more limited tool than zoning and only indirectly affect the type of use made of land and the specifications for structures on that land.

Broad subdivision control authority resides with the county for areas outside of municipalities and municipal extra-territorial planning jurisdictions. Subdivision is defined as all divisions of a tract or parcel of land divided into two or more lots and all divisions involving new streets.

Tree Trimming Ordinance

These ordinances may place requirements for the removal, pruning, planting, and other tree work depending upon whether the tree is in the public right-of-way or on a private lot as well as tree size or species, and property zoning.

Nuisance Ordinance

Kansas' local governments have been granted broad regulatory powers in their jurisdictions. Kansas General Statutes bestow the general police power on local governments, allowing them to enact and enforce ordinances which define, prohibit, regulate or abate acts, omissions, or conditions detrimental to the health, safety, and welfare of the people, and to define and abate nuisances. Since hazard mitigation can be included under the police power (as protection of public health, safety and welfare), towns, cities, and counties may include requirements for hazard mitigation in local ordinances. Local governments may also use their ordinance-making power to abate "nuisances," which could include, by local definition, any activity or condition making people or property more vulnerable to any hazard.

Stormwater Ordinance

The purpose of a stormwater ordinance is to protect the quality and quantity of local, regional and state waters from the potential harm of unmanaged stormwater. Stormwater ordinances include protection from activities that result in the degradation of properties, water quality, stream channels, and other natural resources.

Drainage Ordinance

The purpose of a drainage ordinance is to improve storm sewer systems for the management and control of storm water runoff to prevent polluted waters from entering the water supply and other receiving waters.

Site Plan Review Ordinance

The purpose of a site plan review ordinance is to ensure orderly growth, and to minimize the adverse effects growth that could be caused by the development of commercial, industrial, retail or institutional structures.

Historic Preservation Ordinance

The purpose of a preservation ordinance is created to protect buildings and neighborhoods from destruction or modifications. A preservation ordinance protects designated historic properties through review requirements for renovations and protects historic neighborhoods through design guidelines for new development.

Landscape Ordinance

A landscape ordinance generally provides rules and procedures for the protection and maintenance of vegetation and landscaping.

Wetlands/Riparian Areas Conservation Plan

The purpose of a Wetlands/Riparian Areas Conservation Plan is to preserve and protect wetlands, water resources, and adjacent upland areas.

The table below summarizes relevant local policies and ordinances.

Jurisdictional Policies and Ordinances

Jurisdiction	Zoning Ordinance	Building Code	Floodplain Ordinance	Subdivision Ordinance	Tree Trimming Ordinance	Nuisance Ordinance	Storm Water Ordinance	Drainage Ordinance	Site Plan Review Requirements	Historic Preservation Ordinance	Landscape Ordinance	Wetlands / Riparian Areas Conservation Plan
Anderson County	x		x			x				x		
City of Colony						x						
City of Garnett	x	x	x	x	x	x	x	x	x	x	x	
City of Greeley						x						
City of Kincaid												
City of Westphalia												
Coffey County	x			x								
City of Burlington	x	x	x	x	x	x			x			
City of Gridley			x			x						
City of Lebo	x		x		x	x						
City of LeRoy			x			x						
City of New Strawn	x	x				x						
City of Waverly	x	x	x			x			x		x	
Franklin County	x	x		x								
City of Lane			x									
City of Ottawa	x	x	x	x	x	x	x	x	x	x	x	x
City of Pomona	x	x		x		x	x		x			
City of Princeton	x	x				x						

Jurisdiction	Zoning Ordinance	Building Code	Floodplain Ordinance	Subdivision Ordinance	Tree Trimming Ordinance	Nuisance Ordinance	Storm Water Ordinance	Drainage Ordinance	Site Plan Review Requirements	Historic Preservation Ordinance	Landscape Ordinance	Wetlands / Riparian Areas Conservation Plan
City of Rantoul												
City of Richmond	x	x				x						
City of Wellsville	x	x	x	x	x	x			x		x	
City of Williamsburg	x	x		x		x			x	x		
Linn County	x		x	x		x						
City of Blue Mound						x			x			
City of La Cygne	x	x	x	x		x	x	x			x	
City of Linn Valley	x	x		x								
City of Mound City	x	x	x	x								
City of Parker	x	x	x			x						
City of Pleasanton	x			x								
City of Prescott						x						
Miami County	x	x	x	x		x	x	x	x			
City of Fontana						x					x	
City of Louisburg	x	x	x	x		x	x		x		x	
City of Osawatomie		x	x	x	x	x	x		x			
City of Paola	x	x	x	x		x	x	x	x		x	x

Jurisdiction	Zoning Ordinance	Building Code	Floodplain Ordinance	Subdivision Ordinance	Tree Trimming Ordinance	Nuisance Ordinance	Storm Water Ordinance	Drainage Ordinance	Site Plan Review Requirements	Historic Preservation Ordinance	Landscape Ordinance	Wetlands / Riparian Areas Conservation Plan
Osage County	x								x			
City of Burlingame	x	x	x			x			x		x	
City of Carbondale	x	x	x	x		x		x	x			
City of Lyndon	x	x				x						
City of Melvern	x					x		x	x			
City of Osage	x	x	x	x	x	x		x	x			
City of Overbrook	x		x		x	x						
City of Quenemo						x						
City of Scranton	x	x	x		x	x	x	x				
Shawnee County	x		x	x				x	x			
City of Auburn	x	x	x	x	x	x	x	x				
City of Rossville	x	x	x	x	x	x	x	x	x			
City of Silver Lake	x		x	x								
City of Topeka	x	x			x	x	x	x	x	x		

4.5.3 PROGRAMS

This part of the capabilities assessment includes the identification and evaluation of existing programs. Many of the programs have been generally discussed in the previous sections.

Hazard Awareness Program

A program designed to inform citizens as to the nature and extent of local and regional natural and manmade hazards.

National Flood Insurance Program

In 1968, Congress created the NFIP to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding.

Community Rating System program under the National Flood Insurance Program

The NFIP's Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Participants are offered flood insurance premium rates at a discount to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS. These goals are the reduction of flood damage to insurable property, the strengthening and support of insurance aspects of the NFIP, and the encouragement of a comprehensive approach to floodplain management.

Firewise Community Certification

The Firewise Communities Program encourages local solutions for safety by involving homeowners in taking individual responsibility for preparing their homes from the risk of wildfire. Firewise is a key component of Fire Adapted Communities, a collaborative approach that connects all those who play a role in wildfire education, planning and action with comprehensive resources to help reduce risk. The program is co-sponsored by the USDA Forest Service, the US Department of the Interior, and the National Association of State Foresters.

Building Code Effectiveness Grading

The Building Code Effectiveness Grading Schedule assesses the building codes in effect and how the community enforces its building codes, with special emphasis on mitigation of losses from natural hazards.

ISO Fire Rating

ISO's Fire Rating gauges the fire protection capability of the local fire department to respond to fires.

Land Use Program

A Land Use Program is designed with the goal of balancing environmental protection with economic development. This program, coupled with various other planning efforts, provides resources to local leaders to establish policies to guide the development of the community, including annexation, expansion, and building.

Public Education/Awareness

Education programs for the public that provide education and awareness about hazards, hazard planning and mitigation efforts.

Stream Maintenance Program

Programs designed to keep streams free from debris and blockages to prevent or minimize flooding.

Engineering Studies for Streams (Local/County/Regional)

Studies that detail information concerning flow data, potential trouble spots, and improvement recommendations for streams.

Mutual Aid Agreements

Mutual Aid Agreements are an understanding among localities to lend assistance across jurisdictional boundaries. This may occur due to an emergency response that exceeds local resources, such as a disaster. Mutual aid may be requested only when such an emergency occurs. Or may be a formal standing agreement on a continuing basis.

The table below summarizes relevant local programs.

Jurisdictional Programs

Jurisdiction	Zoning/Land Use Restrictions	Codes Building Site/Design	Hazard Awareness Program	National Flood Insurance Program	Community Rating System program under the National Flood Insurance Program	National Weather Service Storm Ready Certification	Firewise Community Certification	Building Code Effectiveness Grading	ISO Fire Rating	Economic Development Program	Land Use Program	Public Education/ Awareness	Property Acquisition	Planning/Zoning Boards	Stream Maintenance Program	Tree Trimming Program	Engineering Studies for Streams	Mutual Aid Agreements
Anderson County	x			x		x			7/9	x	x	x		x	x			x
City of Colony																		
City of Garnett	x	x	x	x		x				x	x	x	x	x		x		x
City of Greeley						x			8									x
City of Kincaid						x			8									x
City of Westphalia						x			5									x
Coffey County	x		x			x			5	x		x		x				x
City of Burlington	x	x		x														
City of Gridley		x																
City of Lebo	x								5	x				x		x		x
City of Leroy				x					x									
City of New Strawn	x	x										x		x				x
City of Waverly	x	x		x										x		x		
Franklin County	x	x		x		x								x				
City of Lane				x														
City of Ottawa	x	x		x		x		4	3		x	x	x	x		x		x
City of Pomona	x	x		x					5		x			x				x
City of Princeton				x										x				
City of Rantoul																		

Jurisdiction	Zoning/Land Use Restrictions	Codes Building Site/Design	Hazard Awareness Program	National Flood Insurance Program	Community Rating System program under the National Flood Insurance Program	National Weather Service Storm Ready Certification	Firewise Community Certification	Building Code Effectiveness Grading	ISO Fire Rating	Economic Development Program	Land Use Program	Public Education/ Awareness	Property Acquisition	Planning/Zoning Boards	Stream Maintenance Program	Tree Trimming Program	Engineering Studies for Streams	Mutual Aid Agreements
City of Richmond	x	x	x															
City of Wellsville	x	x		x				10		x	x		x	x				x
City of Williamsburg	x	x							9									x
Linn County	x		x	x					5	x	x	x	x	x				x
City of Blue Mound									5			x	x			x		x
City of LaCygne	x	x		x					7		x	x		x				x
City of Linn Valley	x	x							9			x						
City of Mound City	x			x					6			x						
City of Parker	x	x		x					5		x			x				x
City of Pleasanton				x					6									
City of Prescott									5									
Miami County	x	x	x	x					8-10	x	x	x		x			x	x
City of Fontana	x	x	x	x										x				x
City of Louisburg	x	x		x					4			x		x		x		x
City of Osawatomie	x	x	x	x					4					x		x		x
City of Paola	x	x	x	x	4			x		x	x	x	x	x				

Jurisdiction	Zoning/Land Use Restrictions	Codes Building Site/Design	Hazard Awareness Program	National Flood Insurance Program	Community Rating System program under the National Flood Insurance Program	National Weather Service Storm Ready Certification	Firewise Community Certification	Building Code Effectiveness Grading	ISO Fire Rating	Economic Development Program	Land Use Program	Public Education/ Awareness	Property Acquisition	Planning/Zoning Boards	Stream Maintenance Program	Tree Trimming Program	Engineering Studies for Streams	Mutual Aid Agreements
Osage County	x			x		x				x	x			x				x
City of Burlingame	x	x		x					4				x	x			x	x
City of Carbondale	x	x												x				x
City of Lyndon	x	x												x				x
City of Melvern	x								6					x				x
City of Osage	x	x		x					4				x	x		x		x
City of Overbrook	x			x	x	x			6	x				x				x
City of Quenemo	x	x		x													x	x
City of Scranton	x	x	x			x								x		x		x
Shawnee County	x	x		x	x	x		x		x	x	x		x				x
City of Auburn	x	x		x										x				
City of Rossville	x	x	x	x						x	x	x	x	x			x	x
City of Silver Lake				x								x						
City of Topeka	x	x	x	x		x	x			x		x		x	x	x	x	x

4.5.4 AVAILABLE STUDIES, REPORTS AND MAPS

Mitigation planning can be informed by existing information for a jurisdiction, including studies, reports and maps. The following is a brief description of the types of usable studies, reports or maps that may be available to a jurisdiction.

Hazard Analysis/Risk Assessment

A hazard analysis is the identification of different type of hazards that may affect a jurisdiction. A risk assessment is the determination of quantitative or qualitative value of risk related to a situation and a recognized hazard.

Evacuation Route Map

A map detailing the evacuation routes for a jurisdiction, often incorporating road, services, and travel time information.

Critical Facilities Inventory

A list of all critical facilities within a jurisdiction, which may include fire stations, police stations, hospitals, schools, day care centers, senior care facilities, major roads and bridges, critical utility sites, and hazardous material storage areas.

Vulnerable Population Inventory

A vulnerable population inventory may include members of the jurisdictions population who are elderly, limited in functional capacity, homeless, or have limited financial means. These populations may be poorly equipped with the resources and capabilities necessary to prepare for, and respond to, disasters without additional assistance.

Land Use Map

A jurisdictional map detailing current land uses.

The table below summarizes relevant local studies, reports and maps.

Available Jurisdictional Studies, Reports and Maps

Jurisdiction	Hazard Analysis/Risk Assessment (City)	Hazard Analysis/Risk Assessment (County)	Evacuation Route Map	Critical Facilities Inventory	Vulnerable Population Inventory	Land Use Map
Anderson County		x	x	x	x	x
City of Colony						
City of Garnett	x		x	x	x	x
City of Greeley					x	
City of Kincaid					x	
City of Westphalia		x	x	x		
Coffey County		x	x		x	
City of Burlington			x	x		
City of Gridley						
City of Lebo						
City of Leroy						
City of New Strawn						
City of Waverly						x
Franklin County		x	x	x		x
City of Lane						
City of Ottawa	x	x		x		x
City of Pomona		x				x
City of Princeton		x				
City of Rantoul						
City of Richmond	x					x
City of Wellsville		x				x
City of Williamsburg						
Linn County		x	x	x		x
City of Blue Mound						
City of LaCygne			x	x		x
City of Linn Valley						

Jurisdiction	Hazard Analysis/Risk Assessment (City)	Hazard Analysis/Risk Assessment (County)	Evacuation Route Map	Critical Facilities Inventory	Vulnerable Population Inventory	Land Use Map
City of Mound City						x
City of Parker						x
City of Pleasanton						
City of Prescott						
Miami County		x		x		x
City of Fontana						
City of Louisburg		x		x		x
City of Osawatomie	x	x	x	x	x	x
City of Paola						x
Osage County		x	x	x		x
City of Burlingame				x		x
City of Carbondale						
City of Lyndon						
City of Melvern						
City of Osage		x		x	x	x
City of Overbrook		x		x		
City of Quenemo	x	x				
City of Scranton						x
Shawnee County	x	x	x	x	x	x
City of Auburn						x
City of Rossville	x	x	x		x	x
City of Silver Lake						
City of Topeka	x		x	x	x	

4.5.5 STAFFING AND DEPARTMENTAL CAPABILITIES

A comprehensive mitigation program relies on many skilled professionals. These professionals include:

- Planners
- Engineers
- Inspectors
- Emergency managers
- Floodplain managers
- GIS personnel

While exact responsibilities differ from jurisdiction to jurisdiction, the general duties of applicable departments are described below.

Building Code Official

Building officials are generally the jurisdictional administrator of building and construction codes, engineering calculation supervision, permits, facilities management, and accepted construction procedures.

Building Inspector

A building inspector is an official who inspects structures to ensure compliance with the plans and to check workmanship as well as code compliance.

GIS Mapping Specialist

A geographic information system (GIS) is a system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. A GIS mapping specialist uses this data to create county maps, including flood plain, fire hazard, drought and other mitigation maps.

Engineer

An engineer may be responsible for the oversight, management and development of jurisdictions' road and infrastructure network.

Development Planner

A development planner may be responsible for guiding a jurisdictions worth and development through the application of codes, ordinances, building regulations and public input.

Public Works Official

Public works officials usually provide management and oversight of infrastructure projects such as public buildings (municipal buildings, schools, hospitals), transport infrastructure (roads, railroads, bridges, pipelines, airports), public spaces (public squares, parks), public services (water supply, sewage, electrical grid, dams), and other physical assets and facilities.

Emergency Management Coordinator

The Emergency Management office is responsible for the mitigation, preparedness, response and recovery operations that deal with both natural and man-made disaster events. The formation of an emergency management department in each county is mandated under Kansas General Statutes.

NFIP Floodplain Administrator

The NFIP floodplain administrator ensures a jurisdiction is meeting the minimum requirements of participation in the NFIP, and often is tasked with applying for funding or grants.

Bomb or Arson Squad

A bomb or arson squad is used to respond to, and investigate the cause of, fire and bomb events.

Emergency Response Team

An emergency response team is used to respond to emergency events.

Hazardous Materials Expert

A hazardous materials expert provides response and recovery information for hazardous material events.

Local Emergency Planning Committee

Local Emergency Planning Committees are generally housed at the county or municipal level. They do not function in actual emergency situations, but attempt to identify and catalogue potential hazards, identify available resources, mitigate hazards when feasible, and write emergency plans. The role of the LEPC is to anticipate and plan the initial response for foreseeable disasters in their jurisdiction.

Sanitation Department

Sanitation Departments are generally the agency responsible for garbage collection and recycling collection. Sanitation departments may also be tasked with street cleaning and snow removal.

Transportation Department

In general, transportation departments are responsible for road and bridge maintenance and transportation planning. Transportation departments may also be tasked with snow removal.

Economic Development Department

The economic development department is generally responsible for guiding a jurisdictions economic policies, fostering business development, and nurturing existing business'.

Housing Department

Duties of a housing department may include enforcing fair housing laws, assisting low income citizens with finding housing, and managing jurisdictional housing properties.

Historic Preservation

A historic preservation department or society may provide expertise on environmental impacts to cultural resources, administer historic preservation grants, encourage historic preservation through local governments, and provide technical assistance for historic rehabilitation.

The table below summarizes relevant local staffing and departmental capabilities.

Staffing and Departmental Capabilities

Jurisdiction	Building Code Official	Building Inspector	Mapping Specialist (GIS)	Engineer	Development Planner	Public Works Official	Emergency Management Coordinator	NFIP Floodplain Administrator	Bomb and/or Arson Squad	Emergency Response Team	Hazardous Materials Expert	Local Emergency Planning Committee	County Emergency Management Commission	Sanitation Department	Transportation Department	Economic Development Department	Housing Department	Historic Preservation
Anderson County					x	x	x	x		x		x				x		x
City of Colony		x		x						x				x				
City of Garnett	x	x	x		x	x	x	x		x	x	x		x		x	x	x
City of Greeley						x												
City of Kincaid																		
City of Westphalia										x								
Coffey County			x	x		x	x			x		x		x	x	x	x	
City of Burlington								x					x					
City of Gridley																		
City of Lebo						x												
City of LeRoy						x						x	x					
City of New Strawn	x	x				x												
City of Waverly						x										x		
Franklin County	x	x	x	x	x	x	x	x				x						
City of Lane						x	x	x					x	x				
City of Ottawa	x	x	x		x	x		x	x	x		x						
City of Pomona	x	x				x						x						
City of Princeton													x					

Jurisdiction	Building Code Official	Building Inspector	Mapping Specialist (GIS)	Engineer	Development Planner	Public Works Official	Emergency Management Coordinator	NFIP Floodplain Administrator	Bomb and/or Arson Squad	Emergency Response Team	Hazardous Materials Expert	Local Emergency Planning Committee	County Emergency Management Commission	Sanitation Department	Transportation Department	Economic Development Department	Housing Department	Historic Preservation
City of Rantoul																		
City of Richmond																		
City of Wellsville	x	x	x	x	x	x		x				x	x			x		
City of Williamsburg	x	x		x		x						x						
Linn County			x		x	x	x	x				x	x	x	x	x		
City of Blue Mound		x				x								x	x			
City of LaCygne	x					x	x	x		x		x	x				x	x
City of Linn Valley		x		x			x					x						
City of Mound City	x	x		x		x	x	x				x						
City of Parker						x								x	x			
City of Pleasanton	x	x		x		x	x	x				x						
City of Prescott						x	x											
Miami County	x	x	x		x	x	x	x	x			x		x	x	x		
City of Fontana			x	x					x	x				x		x		
City of Louisburg	x	x		x	x	x		x				x				x		x
City of Osawatomie	x	x					x		x			x		x				
City of Paola	x	x	x		x	x		x	x						x	x	x	

Jurisdiction	Building Code Official	Building Inspector	Mapping Specialist (GIS)	Engineer	Development Planner	Public Works Official	Emergency Management Coordinator	NFIP Floodplain Administrator	Bomb and/or Arson Squad	Emergency Response Team	Hazardous Materials Expert	Local Emergency Planning Committee	County Emergency Management Commission	Sanitation Department	Transportation Department	Economic Development Department	Housing Department	Historic Preservation
Osage County			x	x		x	x	x				x		x		x		x
City of Burlingame	x	x				x		x		x								
City of Carbondale	x						x	x		x		x						
City of Lyndon	x					x												
City of Melvern		x																
City of Osage	x	x		x		x		x	x	x				x				
City of Overbrook	x	x				x	x						x			x		
City of Quenemo								x						x				
City of Scranton	x	x				x												
Shawnee County	x		x			x	x	x	x	x	x	x	x	x	x	x		x
City of Auburn	x	x				x												
City of Rossville	x	x			x	x	x	x	x	x	x	x	x	x				
City of Silver Lake						x						x						
City of Topeka	x	x	x	x	x	x	x		x	x	x	x		x	x		x	x

4.5.6 NON-GOVERNMENTAL ORGANIZATIONS CAPABILITIES

NGOs are legally constituted corporations that operate independently from any form of government and are not conventional for-profit businesses. In the cases in which NGOs are funded totally or partially by a government agency, the NGO maintains its non-governmental status by excluding government representatives from membership in the organization.

There are many types of NGOs, including:

- **Charitable**: Generally directed toward meeting the needs of the poor or those impacted by disasters.
- **Service**: Generally directed toward providing health, family planning or education services.
- **Participatory**: Generally directed toward self-help and/or community development projects.

NGOs can further be divided into community, local or national organizations. The following is a brief discussion of NGOs operating within east-central Kansas.

American Red Cross

The American Red Cross is a humanitarian organization that provides emergency assistance, disaster relief and education. In addition to domestic disaster relief, the American Red Cross offers services in five other areas: community services that help the needy; communications services and comfort for military members and their family members; the collection, processing and distribution of blood and blood products; educational programs on preparedness, health, and safety; and international relief and development programs.

Salvation Army

The Salvation Army is a Christian denomination and international charitable organization with a worldwide membership of over 1.5 million. In addition to being among the first to arrive with help after natural or man-made disasters, the Salvation Army runs charity shops and operates shelters for the homeless.

Veterans Groups

Generally veteran groups are local chapters of national groups that provide aid to active and retired soldiers and provide charitable support to target communities.

Local Environmental Organizations

An environmental organization may seek to protect, analyze or monitor the environment against misuse or degradation.

Homeowners Associations

Homeowner associations are residents of a community who form a board to monitor, control and oversee many aspects of a building, area or development. An association may have elected leaders and often has mandatory dues.

Neighborhood Associations

Neighborhood associations are groups of residents or property owners who advocate for or organize activities within a neighborhood. An association may have elected leaders and voluntary dues.

Chamber of Commerce

A chamber of commerce is generally a group of local businesses whose goal is to further the interests of businesses. Business owners in towns and cities form these local societies to advocate on behalf of the business community. Local businesses are members, and they elect a board of directors or executive council to set policy for the chamber. The board or council then hires a President, CEO or Executive Director, plus staffing appropriate to size, to run the organization.

Community Organizations

Generally community organizations are local chapters of national groups, such as the Elks, Shriners, or Kiwanis, that provide charitable support to citizens in need.

The table below summarizes the presence of relevant local NGOs.

Jurisdictional NGOs

Jurisdiction	American Red Cross	Salvation Army	Veterans Groups	Local Environmental Organization	Homeowner Associations	Neighborhood Associations	Chamber of Commerce	Community Organizations (Lions, Kiwanis)
Anderson County	x		x				x	x
City of Colony								x
City of Garnett			x		x	x	x	x
City of Greeley								
City of Kincaid								
City of Westphalia	x							x
Coffey County			x				x	x
City of Burlington	x		x				x	x
City of Gridley			x					
City of Lebo			x					x
City of LeRoy								
City of New Strawn							x	x
City of Waverly			x					
Franklin County			x		x	x	x	x
City of Lane	x	x	x					x
City of Ottawa	x		x		x		x	x
City of Pomona								
City of Princeton								
City of Rantoul								
City of Richmond								x
City of Wellsville							x	x
City of Williamsburg								
Linn County	x		x		x		x	x
City of Blue Mound			x					
City of LaCygne			x				x	x
City of Linn Valley								
City of Mound City							x	x
City of Parker								x
City of Pleasanton							x	
City of Prescott							x	x

Jurisdiction	American Red Cross	Salvation Army	Veterans Groups	Local Environmental Organization	Homeowner Associations	Neighborhood Associations	Chamber of Commerce	Community Organizations (Lions, Kiwanis)
Miami County	x	x	x		x		x	x
City of Fontana			x					
City of Louisburg			x		x	x	x	x
City of Osawatomie			x				x	x
City of Paola		x	x		x		x	x
Osage County			x		x	x	x	x
City of Burlingame	x	x					x	x
City of Carbondale								x
City of Lyndon			x					
City of Melvern			x					
City of Osage	x	x	x				x	x
City of Overbrook			x					x
City of Quenemo								x
City of Scranton			x					
Shawnee County	x	x	x	x	x	x	x	x
City of Auburn								x
City of Rossville			x					
City of Silver Lake								x
City of Topeka	x	x	x	x	x	x	x	x

4.5.7 FISCAL CAPABILITIES

In general, the jurisdictions of east-central Kansas receive the majority of their revenue through state and local sales tax and federal and state pass through dollars. Based on available revenue information, and given that both the state and counties are experiencing budget deficits, funding for mitigation programs and disaster response is at a premium. Adding to the budget crunch is the increased reliance on local accountability by the federal government.

The following provide brief definitions of applicable fiscal programs.

Community Development Block Grant

The Community Development Block Grant (CDBG) is a U.S. Department of Housing and Urban Development program that funds local community development activities such as affordable housing, anti-poverty programs, and infrastructure development. CDBG, like other block grant programs, differ from categorical grants, made for specific purposes, in that they are subject to less federal oversight and are largely used at the discretion of the state and local governments and their sub-grantees.

Capital Improvement Funding

A Capital Improvement Plan is generally a short-range plan, usually four to ten years, which identifies capital projects and equipment purchases, provides a planning schedule and identifies options for financing the plan. Essentially, the plan provides a link between a municipality, school district, parks and recreation department and/or other local government entity and a comprehensive and strategic plans and the entity's annual budget. Funding may be drawn from this plan, if funding has been set aside as part of the planning process, and if the action works with the overall planning objectives and goals.

Authority to Levy Taxes

The authority to levy taxes would allow the jurisdiction to tax it's population base.

Impact Fees for New Developments

Impact fees for new developments allow a jurisdiction to charge fees to developers to mitigate against any impact that development may have.

Incur Debt through General Obligation Bonds

General obligation bonds are issued with the belief that a municipality will be able to repay its debt obligation through taxation or revenue from projects. No assets are used as collateral.

Incur Debt through Special Tax Bonds

A government bond where repayment is guaranteed by a tax that the issuer levies specifically for that purpose.

Incur Debt through General Private Activities

In general, these tend to be tax-exempt bonds issued by or on behalf of local or state government for the purpose of providing special financing benefits for qualified projects. The financing is most often for projects of a private user, and the government generally does not pledge its credit.

Withhold Spending in Hazard Prone Areas

The ability of a jurisdiction to not provide funding for activities or actions in an area that is known to be prone to specific hazards.

The following table highlights each jurisdiction's fiscal capabilities.

Jurisdictional Fiscal Capabilities

Jurisdiction	Apply for Community Development Block Grants	Fund projects thru Capital Improvements funding	Authority to levy taxes for specific purposes	Fees for water, sewer, gas, or electric services	Impact fees for new development	Incur debt through general obligation bonds	Incur debt through special tax bonds	Incur debt through private activities	Withhold spending in hazard prone areas
Anderson County	x		x	x		x	x		x
City of Colony	x	x	x	x		x	x		
City of Garnett	x	x	x	x	x	x	x	x	x
City of Greeley	x	x		x					
City of Kincaid	x								
City of Westphalia	x	x	x	x		x	x		
Coffey County	x	x	x		x	x	x	x	x
City of Burlington	x	x		x					
City of Gridley	x								
City of Lebo		x	x	x		x	x		
City of LeRoy	x		x	x		x	x		
City of New Strawn		x	x	x		x	x		
City of Waverly		x	x	x		x	x	x	x
Franklin County	x	x	x			x	x		
City of Lane	x	x	x	x		x	x	x	
City of Ottawa	x	x	x	x	x	x	x		x
City of Pomona	x	x	x	x	x	x	x		x
City of Princeton	x	x		x		x			
City of Rantoul	x	x	x	x		x	x		
City of Richmond	x			x		x	x		
City of Wellsville	x	x	x	x	x	x	x		
City of Williamsburg	x	x	x	x		x	x		
Linn County	x	x	x		x	x	x		
City of Blue Mound	x	x	x	x		x	x		
City of LaCygne	x	x	x	x		x	x		
City of Linn Valley	x	x	x	x		x			
City of Mound City	x	x	x	x		x	x	x	

Jurisdiction	Apply for Community Development Block Grants	Fund projects thru Capital Improvements funding	Authority to levy taxes for specific purposes	Fees for water, sewer, gas, or electric services	Impact fees for new development	Incur debt through general obligation bonds	Incur debt through special tax bonds	Incur debt through private activities	Withhold spending in hazard prone areas
City of Parker	x	x	x	x	x	x			
City of Pleasanton	x	x	x			x	x		
City of Prescott	x		x	x	x	x	x		
Miami County	x		x	x		x	x	x	
City of Fontana	x	x	x	x	x	x	x		x
City of Louisburg	x	x	x	x	x	x	x		
City of Osawatomie	x	x	x	x	x	x			
City of Paola	x	x	x	x	x	x	x		x
Osage County		x	x			x			
City of Burlingame	x	x	x	x		x	x		
City of Carbondale	x	x	x	x		x	x		
City of Lyndon	x	x	x	x		x	x		
City of Melvern	x	x	x	x		x			
City of Osage	x	x	x	x		x	x		
City of Overbrook	x	x	x	x		x			
City of Quenemo	x	x	x	x	x	x	x	x	
City of Scranton	x	x	x	x					
Shawnee County	x	x	x	x		x	x	x	x
City of Auburn		x		x		x	x		
City of Rossville	x	x	x	x	x	x			x
City of Silver Lake	x	x	x	x			x	x	
City of Topeka	x	x	x	x	x	x	x		x

4.5.8 SCHOOL, COLLEGE OR UNIVERSITY CAPABILITY ASSESSMENT

Participating schools, colleges and universities were provided with a different set of questions that participating governmental jurisdictions. These questions were asked to ascertain the level of preparedness of the institution.

The following provides brief definitions of terms used in the capability assessment of schools, colleges and universities.

Grant Writer

A grant writer writes applications for grant funding from an institution such as a government department, corporation, foundation or trust.

Public Information Officer

Public Information Officers (PIOs) are the communications coordinators or spokespersons. The primary responsibility of a PIO is to provide information to the media and public as required by law and according to the standards of their profession.

General Obligation Bond

A general obligation bond is a common type of municipal bond that is secured by a state or local government's pledge to use legally available resources, including tax revenues, to repay bond holders.

Special Tax Bond

A type of bond that is repaid by revenues derived from taxation of a particular activity or asset. These bonds are repaid with either excise taxes or special assessment taxes.

Information as to the current capacity of participating schools, colleges and universities is summarized in the following table.

School, College or University	Master Plan	Capital Improvement Plan	School Emergency Plan, Shelter in Place Protocols, Evacuation Protocols	Weapons Policy	Full-time building official (i.e. Principal)	Emergency Manager	Grant Writer	Public Information Officer	Capital improvements project funding	Local funds	General obligation bonds	Special tax bonds	Private activities/donations	State and federal funds
Anderson County														
USD #365 - Garnett	x	x	x	x	x				x	x	x		x	x
USD #479 - Crest			x	x	x									
Coffey County														
USD #243 - Lebo / Waverly			x	x	x				x	x	x		x	x
USD #244 - Burlington		x	x	x	x				x	x	x		x	x
USD #245 - LeRoy / Gridley			x	x					x	x	x		x	x
Franklin County														
USD #287 - West Franklin			x	x	x								x	x
USD # 288 - Central Heights	x	x	x	x	x	x		x	x	x			x	x
USD #289 - Wellsville	x	x	x	x	x	x		x	x	x	x		x	x
USD #290 - Ottawa	x	x	x	x	x	x		x					x	x
Linn County														
USD #344 - Pleasanton	x	x	x	x	x			x	x	x			x	x
USD #346 - Mound City	x	x	x	x	x			x	x	x	x	x	x	x
USD #362 - Prairie View	x	x	x	x	x			x	x	x	x	x	x	x
Miami County														
USD #367 - Osawatomie	x	x	x	x	x		x	x	x	x			x	
USD #368 - Paola			x	x	x	x		x	x		x			
USD #416 - Louisburg		x	x	x	x				x	x	x			x
Osage County														
USD #420 - Osage City	x		x	x	x				x	x			x	x
USD #421 - Lyndon	x		x	x	x				x	x			x	x
USD #434 - Santa Fe Trail		x	x	x	x				x	x				x
USD #454 - Burlingame		x	x	x	x				x	x				x
USD #456 - Marais des Cygnes Valley	x		x	x	x				x	x			x	x
Three Lakes Educational Cooperative			x	x	x					x				

School, College or University	Master Plan	Capital Improvement Plan	School Emergency Plan, Shelter in Place Protocols, Evacuation Protocols	Weapons Policy	Full-time building official (i.e. Principal)	Emergency Manager	Grant Writer	Public Information Officer	Capital improvements project funding	Local funds	General obligation bonds	Special tax bonds	Private activities/donations	State and federal funds
Shawnee County														
USD #321 - Kaw Valley	x	x	x	x	x	x		x	x	x				x
USD #345 - Seaman	x	x	x	x	x	x		x	x	x	x	x	x	x
USD #372 - Silver Lake	x		x	x	x	x		x		x				x
USD #437 - Auburn / Washburn	x	x	x	x	x	x		x	x	x			x	x
USD #450 - Shawnee Heights	x	x	x	x	x	x		x	x	x	x		x	x
USD #501 - Topeka	x	x	x	x	x	x		x	x	x	x		x	x
Washburn University	x	x	x	x	x	x	x	x	x	x			x	x

County Governance

Jurisdiction	Government Structure	Number of Commissioners
Anderson County	Commission	3
Coffey County	Commission	5
Franklin County	Commission	5
Linn County	Commission	3
Miami County	Commission	5
Osage County	Commission	3
Shawnee County	Commission	3

In general, the participating towns and cities operate either under a Mayoral form of governance or an elected city council form of governance.

4.5 JURISDICTIONAL CAPABILITIES

Information as to the current capacity of participating jurisdictions is summarized in the following sections and tables. All capability information was provided by jurisdictional officials through the above referenced questions and through outreach from the HMPC.

The ability of a local government to develop and implement mitigation projects, policies, and programs is directly tied to its ability to direct staff time and resources for that purpose. Administrative capability can be evaluated by determining how mitigation-related activities are assigned to local departments and if there are adequate personnel resources to complete these activities. The degree of intergovernmental coordination among departments will also affect administrative capability for the implementation and success of proposed mitigation activities.

Many smaller jurisdictions have very limited to no planning, management, response or mitigation capabilities. Often these jurisdiction rely on the county or nearby larger municipalities for assistance. This lack of capabilities is reflected in the following tables. Additionally, many very small or extremely limited participating small jurisdictions, largely townships, are not listed on the capability list. **This in no way diminishes the participation in the process of these jurisdictions.** Finally, special district capabilities are included in their overarching counties.

In implementing a mitigation plan or specific action, a local jurisdiction may utilize any or all of the four broad types of government authority granted by the State of Kansas. The four types are defined as:

- Regulation
- Acquisition
- Taxation
- Spending

Regulation

The scope of this local authority is subject to constraints, however, as all of Kansas' political subdivisions must not act without proper delegation from the State. Under a principle known as "Dillon's Rule," all power is vested in the State and can only be exercised by local governments to the extent it is delegated.

Acquisition

The power of acquisition can be a useful tool for pursuing local mitigation goals. Local governments may find the most effective method for completely "hazard-proofing" a particular piece of property or area is to acquire the property, thus removing the property from the private market and eliminating or reducing the possibility of inappropriate development occurring. Kansas legislation empowers cities, towns, counties to acquire property for public purpose by gift, grant, devise, bequest, exchange, purchase, lease or eminent domain (County Home Rule Powers, K.S.A. 19-101, 19-101a, 19-212).

Taxation

The power to levy taxes and special assessments is an important tool delegated to local governments by Kansas law. The power of taxation extends beyond merely the collection of revenue, and can have a profound impact on the pattern of development in the community. Communities have the power to set preferential tax rates for areas which are more suitable for development in order to discourage development in otherwise hazardous areas. Local units of government also have the authority to levy special assessments on property owners for all or part of the costs of acquiring, constructing, reconstructing, extending or otherwise building or improving flood control within a designated area. This can serve to increase the cost of building in such areas, thereby discouraging development. Because the usual methods of apportionment seem mechanical and arbitrary, and because the tax burden on a particular piece of property is often quite large, the major constraint in using special assessments is political. Special assessments seem to offer little in terms of control over land use in developing areas. They can, however, be used to finance the provision of necessary services within municipal or county boundaries. In addition, they are useful in distributing to the new property owners the costs of the infrastructure required by new development.

Spending

The Kansas General Assembly allocated the ability to local governments to make expenditures in the public interest. Hazard mitigation principles can be made a routine part of all spending decisions made by the local government, including the adoption of annual budgets and a Capital Improvement Plan. A Capital Improvement Plan is a schedule for the provision of municipal or county services over a specified period of time. Capital programming, by itself, can be used as a growth management technique, with a view to hazard mitigation. By tentatively committing itself to a timetable for the provision of capital to extend services, a community can control growth to some extent. In addition to formulating a timetable for the provision of services, a local community can regulate the extension of and access to services. A Capital Improvement

Plan that is coordinated with extension and access policies can provide a significant degree of control over the location and timing of growth. These tools can also influence the cost of growth. If the Capital Improvement Plan is effective in directing growth away from environmentally sensitive or high hazard areas.

4.5.1 PLANNING CAPABILITIES

The planning capability assessment is designed to provide a general overview of the key planning and regulatory tools or programs in place or under development. This information helps identify opportunities to address existing planning gaps and provides an opportunity to review areas that mitigation planning actions can be utilized with existing plans. Jurisdictions were asked if they had completed the following plans:

Comprehensive Plan

A comprehensive plan establishes the overall vision for a jurisdiction and serves as a guide to governmental decision making. A comprehensive plan generally contains information on demographics, land use, transportation, and facilities. As a comprehensive plan is broad in scope the integration of hazard mitigation measures can enhance the likelihood of achieving risk reduction goals.

Capital Improvement Plan

A capital improvement plan guides scheduling of, and spending on, public improvements. A capital improvement plan can guide future development away from identified hazard areas, an effective mitigation strategy.

Emergency Operations Plan

An emergency operations plan outlines responsibilities, means and methods by which resources are deployed during and following an emergency or disaster.

Recovery Plan

A disaster recovery plan guides the recovery and reconstruction process following a disaster. Hazard mitigation principles should be incorporated into disaster recovery plans to assist in breaking the cycle of disaster loss.

Debris Management Plan

A debris management plan covers the response and recovery from debris-causing incidents such as tornados or floods. Planning considerations include debris removal and disposal, disposal locations, equipment availability, and personnel training.

Economic Development Plan

An economic development plan assists in advancing a strong and sustainable economy over the long term. This plan provides strategies, programs, and policies that will foster the jurisdictions business climate.

Transportation Plan

A transportation plan aids with the evaluation, review, design and locating of transportation infrastructure, including streets, highways, public transport lines, and transportation centers.

Land Use Plan

Land-use planning is used to regulate land use in an efficient and equitable manner, and to assist jurisdictions in managing the development of land within their boundaries.

Flood Mitigation Assistance Plan

The purpose of the flood mitigation assistance plan is to reduce or eliminate the long-term risk of flood damage to buildings and other structures insured under the National Flood Insurance Program.

Watershed Management Plan

A watershed management plan is used to provide assessment and management information for a geographically defined watershed.

Fire Mitigation Plan

A fire mitigation plan is used to mitigate a jurisdictions wildfire risk and vulnerability The plan documents areas with an elevated risk of wildfires, and identifies the actions taken to decrease the risk.

Critical Facilities Plan

A critical facilities plan is used to identify a jurisdictions critical facilities, including fire stations, police stations, hospitals, schools, day care centers, senior care facilities, major roads and bridges, critical utility sites, and hazardous material storage areas. Additionally, this plan is used to determine methods to mitigate damage to these facilities.

The table below summarizes relevant local planning capabilities.

Jurisdictional Planning Capabilities

Jurisdiction	Comprehensive Plan	Capital Improvement Plan	City Emergency Operations Plan	County Emergency Operations Plan	Local Recovery Plan	County Recovery Plan	Debris Management Plan	Economic Development Plan	Transportation Plan	Land-use Plan	Flood Mitigation Assistance Plan	Watershed Plan	Firewise or other Fire Mitigation Plan	Critical Facilities Plan (Mitigation/ Response/ Recovery)
Anderson County		x		x				x				x		
City of Colony														
City of Garnett	x	x	x	x	x	x	x	x	x	x	x	x	x	x
City of Greeley														
City of Kincaid														
City of Westphalia				x		x								
Coffey County		x		x				x				x		x
City of Burlington	x	x												
City of Gridley														
City of Lebo	x		x											
City of LeRoy														
City of New Strawn			x											
City of Waverly											x	x		
Franklin County				x			x							
City of Lane				x							x			x
City of Ottawa	x	x	x						x	x	x	x		x
City of Pomona	x	x		x						x				
City of Princeton		x		x										

Jurisdiction	Comprehensive Plan	Capital Improvement Plan	City Emergency Operations Plan	County Emergency Operations Plan	Local Recovery Plan	County Recovery Plan	Debris Management Plan	Economic Development Plan	Transportation Plan	Land-use Plan	Flood Mitigation Assistance Plan	Watershed Plan	Firewise or other Fire Mitigation Plan	Critical Facilities Plan (Mitigation/ Response/ Recovery)
City of Rantoul														
City of Richmond	x									x				
City of Wellsville	x	x		x				x		x	x			
City of Williamsburg							x			x				
Linn County	x			x				x						
City of Blue Mound			x											
City of La Cygne	x											x		
City of Linn Valley	x													
City of Mound City	x													
City of Parker	x								x	x	x			
City of Pleasanton	x		x											
City of Prescott	x													
Miami County	x			x			x	x	x	x				
City of Fontana														
City of Louisburg	x	x	x	x		x								
City of Osawatomie	x	x		x			x	x						
City of Paola	x	x						x	x	x	x			

Jurisdiction	Comprehensive Plan	Capital Improvement Plan	City Emergency Operations Plan	County Emergency Operations Plan	Local Recovery Plan	County Recovery Plan	Debris Management Plan	Economic Development Plan	Transportation Plan	Land-use Plan	Flood Mitigation Assistance Plan	Watershed Plan	Firewise or other Fire Mitigation Plan	Critical Facilities Plan (Mitigation/ Response/ Recovery)
Osage County				x				x		x	x			
City of Burlingame		x								x				
City of Carbondale					x									
City of Lyndon	x	x												
City of Melvern	x													
City of Osage	x	x						x		x				
City of Overbrook	x	x	x	x				x						
City of Quenemo														
City of Scranton				x									x	
Shawnee County	x		x	x			x	x		x	x	x		x
City of Auburn	x	x	x											
City of Rossville	x	x	x	x	x	x	x	x		x	x		x	x
City of Silver Lake	x													
City of Topeka	x	x	x	x	x	x	x	x	x		x	x	x	x

4.5.2 POLICIES AND ORDINANCES

Based on the types of state of Kansas government authority granted, participating jurisdictions were asked if the following ordinances and plans were enacted and enforced.

Zoning

Zoning is the traditional and most common tool available to local jurisdictions to control the use of land. State of Kansas statutes grant municipalities and counties authority to engage in zoning for land use. Counties may also regulate inside municipal jurisdiction at the request of a municipality. Zoning is used to promote health, safety, and the general welfare of the community. Zoning is used to dictate the type of land use and to set minimum specifications for use such as lot size, building height and setbacks, and density of population. Local governments are authorized to divide their jurisdiction into districts, and to regulate and restrict the erection, construction, reconstruction, alteration, repair or use of buildings, structures, or land within those districts. Districts may include general use districts, overlay districts, special use districts or conditional use districts. Zoning ordinances consist of maps and written text.

Building Code

Many structural mitigation measures involve constructing and retrofitting homes, businesses and other structures according to standards designed to make the buildings more resilient to the impacts of natural hazards. Many of these standards are imposed through the building code. Kansas does not have state mandatory building codes. However, municipalities and counties may adopt codes for their respective areas if approved by the state as providing "adequate minimum standards." Local governments in Kansas are also empowered to carry out building inspections, and may empower cities and counties to create an inspection department to enforce construction codes and ordinances.

Floodplain Ordinance

In 1992 the Kansas General Assembly approved legislation for floodplain management (Kansas Statutes Annotated 12-766, “Floodplain Management”) authorizing the Department of Agriculture, Division of Water Resources as the primary department to oversee and approve local zoning regulation. The regulation requires planning and approval to prevent inappropriate development in the one hundred-year floodplain and to reduce flood hazards. The purpose of the law is to:

- Minimize the extent of floods by preventing obstructions that inhibit water flow and increase flood height and damage.
- Prevent and minimize loss of life, injuries, and property damage in flood hazard areas.
- Promote the public health, safety and welfare of citizens of Kansas in flood hazard areas.

The statute affects local governments by directing them to:

- Manage planned growth
- Adopt local ordinances to regulate uses in flood hazard areas
- Enforce those ordinances
- Grant permits for use in flood hazard areas that are consistent with the ordinance

The act also makes certain that local ordinances meet the minimum requirements of participation in the NFIP. The incentive for local governments adopting such ordinances is that they will afford their residents the ability to purchase flood insurance through the NFIP. In addition, communities with such ordinances in place will be given priority in the consideration of applications for loans and grants from the Clean Water Revolving Loan and Grant Fund.

Subdivision Ordinance

Subdivision regulations control the division of land into parcels for the purpose of building development or sale. Flood-related subdivision controls typically require that sub-dividers install adequate drainage facilities and design water and sewer systems to minimize flood damage and contamination. They prohibit the subdivision of land subject to flooding unless flood hazards are overcome through filling or other measures, and they prohibit filling of floodway areas. Subdivision regulations require that subdivision plans be approved prior to the division and/or sale of land. Subdivision regulations are a more limited tool than zoning and only indirectly affect the type of use made of land and the specifications for structures on that land.

Broad subdivision control authority resides with the county for areas outside of municipalities and municipal extra-territorial planning jurisdictions. Subdivision is defined as all divisions of a tract or parcel of land divided into two or more lots and all divisions involving new streets.

Tree Trimming Ordinance

These ordinances may place requirements for the removal, pruning, planting, and other tree work depending upon whether the tree is in the public right-of-way or on a private lot as well as tree size or species, and property zoning.

Nuisance Ordinance

Kansas' local governments have been granted broad regulatory powers in their jurisdictions. Kansas General Statutes bestow the general police power on local governments, allowing them to enact and enforce ordinances which define, prohibit, regulate or abate acts, omissions, or conditions detrimental to the health, safety, and welfare of the people, and to define and abate nuisances. Since hazard mitigation can be included under the police power (as protection of public health, safety and welfare), towns, cities, and counties may include requirements for hazard mitigation in local ordinances. Local governments may also use their ordinance-making power to abate "nuisances," which could include, by local definition, any activity or condition making people or property more vulnerable to any hazard.

Stormwater Ordinance

The purpose of a stormwater ordinance is to protect the quality and quantity of local, regional and state waters from the potential harm of unmanaged stormwater. Stormwater ordinances include protection from activities that result in the degradation of properties, water quality, stream channels, and other natural resources.

Drainage Ordinance

The purpose of a drainage ordinance is to improve storm sewer systems for the management and control of storm water runoff to prevent polluted waters from entering the water supply and other receiving waters.

Site Plan Review Ordinance

The purpose of a site plan review ordinance is to ensure orderly growth, and to minimize the adverse effects growth that could be caused by the development of commercial, industrial, retail or institutional structures.

Historic Preservation Ordinance

The purpose of a preservation ordinance is created to protect buildings and neighborhoods from destruction or modifications. A preservation ordinance protects designated historic properties through review requirements for renovations and protects historic neighborhoods through design guidelines for new development.

Landscape Ordinance

A landscape ordinance generally provides rules and procedures for the protection and maintenance of vegetation and landscaping.

Wetlands/Riparian Areas Conservation Plan

The purpose of a Wetlands/Riparian Areas Conservation Plan is to preserve and protect wetlands, water resources, and adjacent upland areas.

The table below summarizes relevant local policies and ordinances.

Jurisdictional Policies and Ordinances

Jurisdiction	Zoning Ordinance	Building Code	Floodplain Ordinance	Subdivision Ordinance	Tree Trimming Ordinance	Nuisance Ordinance	Storm Water Ordinance	Drainage Ordinance	Site Plan Review Requirements	Historic Preservation Ordinance	Landscape Ordinance	Wetlands / Riparian Areas Conservation Plan
Anderson County	x		x			x				x		
City of Colony						x						
City of Garnett	x	x	x	x	x	x	x	x	x	x	x	
City of Greeley						x						
City of Kincaid												
City of Westphalia												
Coffey County	x			x								
City of Burlington	x	x	x	x	x	x			x			
City of Gridley			x			x						
City of Lebo	x		x		x	x						
City of LeRoy			x			x						
City of New Strawn	x	x				x						
City of Waverly	x	x	x			x			x		x	
Franklin County	x	x		x								
City of Lane			x									
City of Ottawa	x	x	x	x	x	x	x	x	x	x	x	x
City of Pomona	x	x		x		x	x		x			
City of Princeton	x	x				x						

Jurisdiction	Zoning Ordinance	Building Code	Floodplain Ordinance	Subdivision Ordinance	Tree Trimming Ordinance	Nuisance Ordinance	Storm Water Ordinance	Drainage Ordinance	Site Plan Review Requirements	Historic Preservation Ordinance	Landscape Ordinance	Wetlands / Riparian Areas Conservation Plan
City of Rantoul												
City of Richmond	x	x				x						
City of Wellsville	x	x	x	x	x	x			x		x	
City of Williamsburg	x	x		x		x			x	x		
Linn County	x		x	x		x						
City of Blue Mound						x			x			
City of La Cygne	x	x	x	x		x	x	x			x	
City of Linn Valley	x	x		x								
City of Mound City	x	x	x	x								
City of Parker	x	x	x			x						
City of Pleasanton	x			x								
City of Prescott						x						
Miami County	x	x	x	x		x	x	x	x			
City of Fontana						x					x	
City of Louisburg	x	x	x	x		x	x		x		x	
City of Osawatomie		x	x	x	x	x	x		x			
City of Paola	x	x	x	x		x	x	x	x		x	x

Jurisdiction	Zoning Ordinance	Building Code	Floodplain Ordinance	Subdivision Ordinance	Tree Trimming Ordinance	Nuisance Ordinance	Storm Water Ordinance	Drainage Ordinance	Site Plan Review Requirements	Historic Preservation Ordinance	Landscape Ordinance	Wetlands / Riparian Areas Conservation Plan
Osage County	x								x			
City of Burlingame	x	x	x			x			x		x	
City of Carbondale	x	x	x	x		x		x	x			
City of Lyndon	x	x				x						
City of Melvern	x					x		x	x			
City of Osage	x	x	x	x	x	x		x	x			
City of Overbrook	x		x		x	x						
City of Quenemo						x						
City of Scranton	x	x	x		x	x	x	x				
Shawnee County	x		x	x				x	x			
City of Auburn	x	x	x	x	x	x	x	x				
City of Rossville	x	x	x	x	x	x	x	x	x			
City of Silver Lake	x		x	x								
City of Topeka	x	x			x	x	x	x	x	x		

4.5.3 PROGRAMS

This part of the capabilities assessment includes the identification and evaluation of existing programs. Many of the programs have been generally discussed in the previous sections.

Hazard Awareness Program

A program designed to inform citizens as to the nature and extent of local and regional natural and manmade hazards.

National Flood Insurance Program

In 1968, Congress created the NFIP to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding.

Community Rating System program under the National Flood Insurance Program

The NFIP's Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Participants are offered flood insurance premium rates at a discount to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS. These goals are the reduction of flood damage to insurable property, the strengthening and support of insurance aspects of the NFIP, and the encouragement of a comprehensive approach to floodplain management.

Firewise Community Certification

The Firewise Communities Program encourages local solutions for safety by involving homeowners in taking individual responsibility for preparing their homes from the risk of wildfire. Firewise is a key component of Fire Adapted Communities, a collaborative approach that connects all those who play a role in wildfire education, planning and action with comprehensive resources to help reduce risk. The program is co-sponsored by the USDA Forest Service, the US Department of the Interior, and the National Association of State Foresters.

Building Code Effectiveness Grading

The Building Code Effectiveness Grading Schedule assesses the building codes in effect and how the community enforces its building codes, with special emphasis on mitigation of losses from natural hazards.

ISO Fire Rating

ISO's Fire Rating gauges the fire protection capability of the local fire department to respond to fires.

Land Use Program

A Land Use Program is designed with the goal of balancing environmental protection with economic development. This program, coupled with various other planning efforts, provides resources to local leaders to establish policies to guide the development of the community, including annexation, expansion, and building.

Public Education/Awareness

Education programs for the public that provide education and awareness about hazards, hazard planning and mitigation efforts.

Stream Maintenance Program

Programs designed to keep streams free from debris and blockages to prevent or minimize flooding.

Engineering Studies for Streams (Local/County/Regional)

Studies that detail information concerning flow data, potential trouble spots, and improvement recommendations for streams.

Mutual Aid Agreements

Mutual Aid Agreements are an understanding among localities to lend assistance across jurisdictional boundaries. This may occur due to an emergency response that exceeds local resources, such as a disaster. Mutual aid may be requested only when such an emergency occurs. Or may be a formal standing agreement on a continuing basis.

The table below summarizes relevant local programs.

Jurisdictional Programs

Jurisdiction	Zoning/Land Use Restrictions	Codes Building Site/Design	Hazard Awareness Program	National Flood Insurance Program	Community Rating System program under the National Flood Insurance Program	National Weather Service Storm Ready Certification	Firewise Community Certification	Building Code Effectiveness Grading	ISO Fire Rating	Economic Development Program	Land Use Program	Public Education/ Awareness	Property Acquisition	Planning/Zoning Boards	Stream Maintenance Program	Tree Trimming Program	Engineering Studies for Streams	Mutual Aid Agreements
Anderson County	x			x		x			7/9	x	x	x		x	x			x
City of Colony																		
City of Garnett	x	x	x	x		x				x	x	x	x	x		x		x
City of Greeley						x			8									x
City of Kincaid						x			8									x
City of Westphalia						x			5									x
Coffey County	x		x			x			5	x		x		x				x
City of Burlington	x	x		x														
City of Gridley		x																
City of Lebo	x								5	x				x		x		x
City of Leroy				x					x									
City of New Strawn	x	x										x		x				x
City of Waverly	x	x		x										x		x		
Franklin County	x	x		x		x								x				
City of Lane				x														
City of Ottawa	x	x		x		x		4	3		x	x	x	x		x		x
City of Pomona	x	x		x					5		x			x				x
City of Princeton				x										x				
City of Rantoul																		

Jurisdiction	Zoning/Land Use Restrictions	Codes Building Site/Design	Hazard Awareness Program	National Flood Insurance Program	Community Rating System program under the National Flood Insurance Program	National Weather Service Storm Ready Certification	Firewise Community Certification	Building Code Effectiveness Grading	ISO Fire Rating	Economic Development Program	Land Use Program	Public Education/ Awareness	Property Acquisition	Planning/Zoning Boards	Stream Maintenance Program	Tree Trimming Program	Engineering Studies for Streams	Mutual Aid Agreements
City of Richmond	x	x	x															
City of Wellsville	x	x		x				10		x	x		x	x				x
City of Williamsburg	x	x							9									x
Linn County	x		x	x					5	x	x	x	x	x				x
City of Blue Mound									5			x	x			x		x
City of LaCygne	x	x		x					7		x	x		x				x
City of Linn Valley	x	x							9			x						
City of Mound City	x			x					6			x						
City of Parker	x	x		x					5		x			x				x
City of Pleasanton				x					6									
City of Prescott									5									
Miami County	x	x	x	x					8-10	x	x	x		x			x	x
City of Fontana	x	x	x	x										x				x
City of Louisburg	x	x		x					4			x		x		x		x
City of Osawatomie	x	x	x	x					4					x		x		x
City of Paola	x	x	x	x	4			x		x	x	x	x	x				

Jurisdiction	Zoning/Land Use Restrictions	Codes Building Site/Design	Hazard Awareness Program	National Flood Insurance Program	Community Rating System program under the National Flood Insurance Program	National Weather Service Storm Ready Certification	Firewise Community Certification	Building Code Effectiveness Grading	ISO Fire Rating	Economic Development Program	Land Use Program	Public Education/ Awareness	Property Acquisition	Planning/Zoning Boards	Stream Maintenance Program	Tree Trimming Program	Engineering Studies for Streams	Mutual Aid Agreements
Osage County	x			x		x				x	x			x				x
City of Burlingame	x	x		x					4				x	x			x	x
City of Carbondale	x	x												x				x
City of Lyndon	x	x												x				x
City of Melvern	x								6					x				x
City of Osage	x	x		x					4				x	x		x		x
City of Overbrook	x			x	x	x			6	x				x				x
City of Quenemo	x	x		x													x	x
City of Scranton	x	x	x			x								x		x		x
Shawnee County	x	x		x	x	x		x		x	x	x		x				x
City of Auburn	x	x		x										x				
City of Rossville	x	x	x	x						x	x	x	x	x			x	x
City of Silver Lake				x								x						
City of Topeka	x	x	x	x		x	x			x		x		x	x	x	x	x

4.5.4 AVAILABLE STUDIES, REPORTS AND MAPS

Mitigation planning can be informed by existing information for a jurisdiction, including studies, reports and maps. The following is a brief description of the types of usable studies, reports or maps that may be available to a jurisdiction.

Hazard Analysis/Risk Assessment

A hazard analysis is the identification of different type of hazards that may affect a jurisdiction. A risk assessment is the determination of quantitative or qualitative value of risk related to a situation and a recognized hazard.

Evacuation Route Map

A map detailing the evacuation routes for a jurisdiction, often incorporating road, services, and travel time information.

Critical Facilities Inventory

A list of all critical facilities within a jurisdiction, which may include fire stations, police stations, hospitals, schools, day care centers, senior care facilities, major roads and bridges, critical utility sites, and hazardous material storage areas.

Vulnerable Population Inventory

A vulnerable population inventory may include members of the jurisdictions population who are elderly, limited in functional capacity, homeless, or have limited financial means. These populations may be poorly equipped with the resources and capabilities necessary to prepare for, and respond to, disasters without additional assistance.

Land Use Map

A jurisdictional map detailing current land uses.

The table below summarizes relevant local studies, reports and maps.

Available Jurisdictional Studies, Reports and Maps

Jurisdiction	Hazard Analysis/Risk Assessment (City)	Hazard Analysis/Risk Assessment (County)	Evacuation Route Map	Critical Facilities Inventory	Vulnerable Population Inventory	Land Use Map
Anderson County		x	x	x	x	x
City of Colony						
City of Garnett	x		x	x	x	x
City of Greeley					x	
City of Kincaid					x	
City of Westphalia		x	x	x		
Coffey County		x	x		x	
City of Burlington			x	x		
City of Gridley						
City of Lebo						
City of Leroy						
City of New Strawn						
City of Waverly						x
Franklin County		x	x	x		x
City of Lane						
City of Ottawa	x	x		x		x
City of Pomona		x				x
City of Princeton		x				
City of Rantoul						
City of Richmond	x					x
City of Wellsville		x				x
City of Williamsburg						
Linn County		x	x	x		x
City of Blue Mound						
City of LaCygne			x	x		x
City of Linn Valley						

Jurisdiction	Hazard Analysis/Risk Assessment (City)	Hazard Analysis/Risk Assessment (County)	Evacuation Route Map	Critical Facilities Inventory	Vulnerable Population Inventory	Land Use Map
City of Mound City						x
City of Parker						x
City of Pleasanton						
City of Prescott						
Miami County		x		x		x
City of Fontana						
City of Louisburg		x		x		x
City of Osawatomie	x	x	x	x	x	x
City of Paola						x
Osage County		x	x	x		x
City of Burlingame				x		x
City of Carbondale						
City of Lyndon						
City of Melvern						
City of Osage		x		x	x	x
City of Overbrook		x		x		
City of Quenemo	x	x				
City of Scranton						x
Shawnee County	x	x	x	x	x	x
City of Auburn						x
City of Rossville	x	x	x		x	x
City of Silver Lake						
City of Topeka	x		x	x	x	

4.5.5 STAFFING AND DEPARTMENTAL CAPABILITIES

A comprehensive mitigation program relies on many skilled professionals. These professionals include:

- Planners
- Engineers
- Inspectors
- Emergency managers
- Floodplain managers
- GIS personnel

While exact responsibilities differ from jurisdiction to jurisdiction, the general duties of applicable departments are described below.

Building Code Official

Building officials are generally the jurisdictional administrator of building and construction codes, engineering calculation supervision, permits, facilities management, and accepted construction procedures.

Building Inspector

A building inspector is an official who inspects structures to ensure compliance with the plans and to check workmanship as well as code compliance.

GIS Mapping Specialist

A geographic information system (GIS) is a system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. A GIS mapping specialist uses this data to create county maps, including flood plain, fire hazard, drought and other mitigation maps.

Engineer

An engineer may be responsible for the oversight, management and development of jurisdictions' road and infrastructure network.

Development Planner

A development planner may be responsible for guiding a jurisdictions worth and development through the application of codes, ordinances, building regulations and public input.

Public Works Official

Public works officials usually provide management and oversight of infrastructure projects such as public buildings (municipal buildings, schools, hospitals), transport infrastructure (roads, railroads, bridges, pipelines, airports), public spaces (public squares, parks), public services (water supply, sewage, electrical grid, dams), and other physical assets and facilities.

Emergency Management Coordinator

The Emergency Management office is responsible for the mitigation, preparedness, response and recovery operations that deal with both natural and man-made disaster events. The formation of an emergency management department in each county is mandated under Kansas General Statutes.

NFIP Floodplain Administrator

The NFIP floodplain administrator ensures a jurisdiction is meeting the minimum requirements of participation in the NFIP, and often is tasked with applying for funding or grants.

Bomb or Arson Squad

A bomb or arson squad is used to respond to, and investigate the cause of, fire and bomb events.

Emergency Response Team

An emergency response team is used to respond to emergency events.

Hazardous Materials Expert

A hazardous materials expert provides response and recovery information for hazardous material events.

Local Emergency Planning Committee

Local Emergency Planning Committees are generally housed at the county or municipal level. They do not function in actual emergency situations, but attempt to identify and catalogue potential hazards, identify available resources, mitigate hazards when feasible, and write emergency plans. The role of the LEPC is to anticipate and plan the initial response for foreseeable disasters in their jurisdiction.

Sanitation Department

Sanitation Departments are generally the agency responsible for garbage collection and recycling collection. Sanitation departments may also be tasked with street cleaning and snow removal.

Transportation Department

In general, transportation departments are responsible for roa d and bridge maintenance and transportation planning. Transportation departments may also be tasked with snow removal.

Economic Development Department

The economic development department is generally responsible for guiding a jurisdictions economic policies, fostering business development, and nurturing existing business'.

Housing Department

Duties of a housing department may include enforcing fair housing laws, assisting low income citizens with finding housing, and managing jurisdictional housing properties.

Historic Preservation

A historic preservation department or society may provide expertise on environmental impacts to cultural resources, administer historic preservation grants, encourage h istoric preservation through local governments, and provide technical assistance for historic rehabilitation.

The table below summarizes relevant local staffing and departmental capabilities.

Staffing and Departmental Capabilities

Jurisdiction	Building Code Official	Building Inspector	Mapping Specialist (GIS)	Engineer	Development Planner	Public Works Official	Emergency Management Coordinator	NFIP Floodplain Administrator	Bomb and/or Arson Squad	Emergency Response Team	Hazardous Materials Expert	Local Emergency Planning Committee	County Emergency Management Commission	Sanitation Department	Transportation Department	Economic Development Department	Housing Department	Historic Preservation
Anderson County					x	x	x	x		x		x				x		x
City of Colony		x		x						x				x				
City of Garnett	x	x	x		x	x	x	x		x	x	x		x		x	x	x
City of Greeley						x												
City of Kincaid																		
City of Westphalia										x								
Coffey County			x	x		x	x			x		x		x	x	x	x	
City of Burlington								x					x					
City of Gridley																		
City of Lebo						x												
City of LeRoy						x						x	x					
City of New Strawn	x	x				x												
City of Waverly						x										x		
Franklin County	x	x	x	x	x	x	x	x				x						
City of Lane						x	x	x					x	x				
City of Ottawa	x	x	x		x	x		x	x	x		x						
City of Pomona	x	x				x						x						
City of Princeton													x					

Jurisdiction	Building Code Official	Building Inspector	Mapping Specialist (GIS)	Engineer	Development Planner	Public Works Official	Emergency Management Coordinator	NFIP Floodplain Administrator	Bomb and/or Arson Squad	Emergency Response Team	Hazardous Materials Expert	Local Emergency Planning Committee	County Emergency Management Commission	Sanitation Department	Transportation Department	Economic Development Department	Housing Department	Historic Preservation
City of Rantoul																		
City of Richmond																		
City of Wellsville	x	x	x	x	x	x		x				x	x			x		
City of Williamsburg	x	x		x		x						x						
Linn County			x		x	x	x	x				x	x	x	x	x		
City of Blue Mound		x				x								x	x			
City of LaCygne	x					x	x	x		x		x	x				x	x
City of Linn Valley		x		x			x					x						
City of Mound City	x	x		x		x	x	x				x						
City of Parker						x								x	x			
City of Pleasanton	x	x		x		x	x	x				x						
City of Prescott						x	x											
Miami County	x	x	x		x	x	x	x	x			x		x	x	x		
City of Fontana			x	x					x	x				x		x		
City of Louisburg	x	x		x	x	x		x				x				x		x
City of Osawatomie	x	x					x		x			x		x				
City of Paola	x	x	x		x	x		x	x						x	x	x	

Jurisdiction	Building Code Official	Building Inspector	Mapping Specialist (GIS)	Engineer	Development Planner	Public Works Official	Emergency Management Coordinator	NFIP Floodplain Administrator	Bomb and/or Arson Squad	Emergency Response Team	Hazardous Materials Expert	Local Emergency Planning Committee	County Emergency Management Commission	Sanitation Department	Transportation Department	Economic Development Department	Housing Department	Historic Preservation
Osage County			x	x		x	x	x				x		x		x		x
City of Burlingame	x	x				x		x		x								
City of Carbondale	x						x	x		x		x						
City of Lyndon	x					x												
City of Melvern		x																
City of Osage	x	x		x		x		x	x	x				x				
City of Overbrook	x	x				x	x						x			x		
City of Quenemo								x						x				
City of Scranton	x	x				x												
Shawnee County	x		x			x	x	x	x	x	x	x	x	x	x	x		x
City of Auburn	x	x				x												
City of Rossville	x	x			x	x	x	x	x	x	x	x	x	x				
City of Silver Lake						x						x						
City of Topeka	x	x	x	x	x	x	x		x	x	x	x		x	x		x	x

4.5.6 NON-GOVERNMENTAL ORGANIZATIONS CAPABILITIES

NGOs are legally constituted corporations that operate independently from any form of government and are not conventional for-profit businesses. In the cases in which NGOs are funded totally or partially by a government agency, the NGO maintains its non-governmental status by excluding government representatives from membership in the organization.

There are many types of NGOs, including:

- **Charitable**: Generally directed toward meeting the needs of the poor or those impacted by disasters.
- **Service**: Generally directed toward providing health, family planning or education services.
- **Participatory**: Generally directed toward self-help and/or community development projects.

NGOs can further be divided into community, local or national organizations. The following is a brief discussion of NGOs operating within east-central Kansas.

American Red Cross

The American Red Cross is a humanitarian organization that provides emergency assistance, disaster relief and education. In addition to domestic disaster relief, the American Red Cross offers services in five other areas: community services that help the needy; communications services and comfort for military members and their family members; the collection, processing and distribution of blood and blood products; educational programs on preparedness, health, and safety; and international relief and development programs.

Salvation Army

The Salvation Army is a Christian denomination and international charitable organization with a worldwide membership of over 1.5 million. In addition to being among the first to arrive with help after natural or man-made disasters, the Salvation Army runs charity shops and operates shelters for the homeless.

Veterans Groups

Generally veteran groups are local chapters of national groups that provide aid to active and retired soldiers and provide charitable support to target communities.

Local Environmental Organizations

An environmental organization may seek to protect, analyze or monitor the environment against misuse or degradation.

Homeowners Associations

Homeowner associations are residents of a community who form a board to monitor, control and oversee many aspects of a building, area or development. An association may have elected leaders and often has mandatory dues.

Neighborhood Associations

Neighborhood associations are groups of residents or property owners who advocate for or organize activities within a neighborhood. An association may have elected leaders and voluntary dues.

Chamber of Commerce

A chamber of commerce is generally a group of local businesses whose goal is to further the interests of businesses. Business owners in towns and cities form these local societies to advocate on behalf of the business community. Local businesses are members, and they elect a board of directors or executive council to set policy for the chamber. The board or council then hires a President, CEO or Executive Director, plus staffing appropriate to size, to run the organization.

Community Organizations

Generally community organizations are local chapters of national groups, such as the Elks, Shriners, or Kiwanis, that provide charitable support to citizens in need.

The table below summarizes the presence of relevant local NGOs.

Jurisdictional NGOs

Jurisdiction	American Red Cross	Salvation Army	Veterans Groups	Local Environmental Organization	Homeowner Associations	Neighborhood Associations	Chamber of Commerce	Community Organizations (Lions, Kiwanis)
Anderson County	x		x				x	x
City of Colony								x
City of Garnett			x		x	x	x	x
City of Greeley								
City of Kincaid								
City of Westphalia	x							x
Coffey County			x				x	x
City of Burlington	x		x				x	x
City of Gridley			x					
City of Lebo			x					x
City of LeRoy								
City of New Strawn							x	x
City of Waverly			x					
Franklin County			x		x	x	x	x
City of Lane	x	x	x					x
City of Ottawa	x		x		x		x	x
City of Pomona								
City of Princeton								
City of Rantoul								
City of Richmond								x
City of Wellsville							x	x
City of Williamsburg								
Linn County	x		x		x		x	x
City of Blue Mound			x					
City of LaCygne			x				x	x
City of Linn Valley								
City of Mound City							x	x
City of Parker								x
City of Pleasanton							x	
City of Prescott							x	x

Jurisdiction	American Red Cross	Salvation Army	Veterans Groups	Local Environmental Organization	Homeowner Associations	Neighborhood Associations	Chamber of Commerce	Community Organizations (Lions, Kiwanis)
Miami County	x	x	x		x		x	x
City of Fontana			x					
City of Louisburg			x		x	x	x	x
City of Osawatomie			x				x	x
City of Paola		x	x		x		x	x
Osage County			x		x	x	x	x
City of Burlingame	x	x					x	x
City of Carbondale								x
City of Lyndon			x					
City of Melvern			x					
City of Osage	x	x	x				x	x
City of Overbrook			x					x
City of Quenemo								x
City of Scranton			x					
Shawnee County	x	x	x	x	x	x	x	x
City of Auburn								x
City of Rossville			x					
City of Silver Lake								x
City of Topeka	x	x	x	x	x	x	x	x

4.5.7 FISCAL CAPABILITIES

In general, the jurisdictions of east-central Kansas receive the majority of their revenue through state and local sales tax and federal and state pass through dollars. Based on available revenue information, and given that both the state and counties are experiencing budget deficits, funding for mitigation programs and disaster response is at a premium. Adding to the budget crunch is the increased reliance on local accountability by the federal government.

The following provide brief definitions of applicable fiscal programs.

Community Development Block Grant

The Community Development Block Grant (CDBG) is a U.S. Department of Housing and Urban Development program that funds local community development activities such as affordable housing, anti-poverty programs, and infrastructure development. CDBG, like other block grant programs, differ from categorical grants, made for specific purposes, in that they are subject to less federal oversight and are largely used at the discretion of the state and local governments and their sub-grantees.

Capital Improvement Funding

A Capital Improvement Plan is generally a short-range plan, usually four to ten years, which identifies capital projects and equipment purchases, provides a planning schedule and identifies options for financing the plan. Essentially, the plan provides a link between a municipality, school district, parks and recreation department and/or other local government entity and a comprehensive and strategic plans and the entity's annual budget. Funding may be drawn from this plan, if funding has been set aside as part of the planning process, and if the action works with the overall planning objectives and goals.

Authority to Levy Taxes

The authority to levy taxes would allow the jurisdiction to tax it's population base.

Impact Fees for New Developments

Impact fees for new developments allow a jurisdiction to charge fees to developers to mitigate against any impact that development may have.

Incur Debt through General Obligation Bonds

General obligation bonds are issued with the belief that a municipality will be able to repay its debt obligation through taxation or revenue from projects. No assets are used as collateral.

Incur Debt through Special Tax Bonds

A government bond where repayment is guaranteed by a tax that the issuer levies specifically for that purpose.

Incur Debt through General Private Activities

In general, these tend to be tax-exempt bonds issued by or on behalf of local or state government for the purpose of providing special financing benefits for qualified projects. The financing is most often for projects of a private user, and the government generally does not pledge its credit.

Withhold Spending in Hazard Prone Areas

The ability of a jurisdiction to not provide funding for activities or actions in an area that is known to be prone to specific hazards.

The following table highlights each jurisdiction's fiscal capabilities.

Jurisdictional Fiscal Capabilities

Jurisdiction	Apply for Community Development Block Grants	Fund projects thru Capital Improvements funding	Authority to levy taxes for specific purposes	Fees for water, sewer, gas, or electric services	Impact fees for new development	Incur debt through general obligation bonds	Incur debt through special tax bonds	Incur debt through private activities	Withhold spending in hazard prone areas
Anderson County	x		x	x		x	x		x
City of Colony	x	x	x	x		x	x		
City of Garnett	x	x	x	x	x	x	x	x	x
City of Greeley	x	x		x					
City of Kincaid	x								
City of Westphalia	x	x	x	x		x	x		
Coffey County	x	x	x		x	x	x	x	x
City of Burlington	x	x		x					
City of Gridley	x								
City of Lebo		x	x	x		x	x		
City of LeRoy	x		x	x		x	x		
City of New Strawn		x	x	x		x	x		
City of Waverly		x	x	x		x	x	x	x
Franklin County	x	x	x			x	x		
City of Lane	x	x	x	x		x	x	x	
City of Ottawa	x	x	x	x	x	x	x		x
City of Pomona	x	x	x	x	x	x	x		x
City of Princeton	x	x		x		x			
City of Rantoul	x	x	x	x		x	x		
City of Richmond	x			x		x	x		
City of Wellsville	x	x	x	x	x	x	x		
City of Williamsburg	x	x	x	x		x	x		
Linn County	x	x	x		x	x	x		
City of Blue Mound	x	x	x	x		x	x		
City of LaCygne	x	x	x	x		x	x		
City of Linn Valley	x	x	x	x		x			
City of Mound City	x	x	x	x		x	x	x	

Jurisdiction	Apply for Community Development Block Grants	Fund projects thru Capital Improvements funding	Authority to levy taxes for specific purposes	Fees for water, sewer, gas, or electric services	Impact fees for new development	Incur debt through general obligation bonds	Incur debt through special tax bonds	Incur debt through private activities	Withhold spending in hazard prone areas
City of Parker	x	x	x	x	x	x			
City of Pleasanton	x	x	x			x	x		
City of Prescott	x		x	x	x	x	x		
Miami County	x		x	x		x	x	x	
City of Fontana	x	x	x	x	x	x	x		x
City of Louisburg	x	x	x	x	x	x	x		
City of Osawatomie	x	x	x	x	x	x			
City of Paola	x	x	x	x	x	x	x		x
Osage County		x	x			x			
City of Burlingame	x	x	x	x		x	x		
City of Carbondale	x	x	x	x		x	x		
City of Lyndon	x	x	x	x		x	x		
City of Melvern	x	x	x	x		x			
City of Osage	x	x	x	x		x	x		
City of Overbrook	x	x	x	x		x			
City of Quenemo	x	x	x	x	x	x	x	x	
City of Scranton	x	x	x	x					
Shawnee County	x	x	x	x		x	x	x	x
City of Auburn		x		x		x	x		
City of Rossville	x	x	x	x	x	x			x
City of Silver Lake	x	x	x	x			x	x	
City of Topeka	x	x	x	x	x	x	x		x

4.5.8 SCHOOL, COLLEGE OR UNIVERSITY CAPABILITY ASSESSMENT

Participating schools, colleges and universities were provided with a different set of questions that participating governmental jurisdictions. These questions were asked to ascertain the level of preparedness of the institution.

The following provides brief definitions of terms used in the capability assessment of schools, colleges and universities.

Grant Writer

A grant writer writes applications for grant funding from an institution such as a government department, corporation, foundation or trust.

Public Information Officer

Public Information Officers (PIOs) are the communications coordinators or spokespersons. The primary responsibility of a PIO is to provide information to the media and public as required by law and according to the standards of their profession.

General Obligation Bond

A general obligation bond is a common type of municipal bond that is secured by a state or local government's pledge to use legally available resources, including tax revenues, to repay bond holders.

Special Tax Bond

A type of bond that is repaid by revenues derived from taxation of a particular activity or asset. These bonds are repaid with either excise taxes or special assessment taxes.

Information as to the current capacity of participating schools, colleges and universities is summarized in the following table.

School, College or University	Master Plan	Capital Improvement Plan	School Emergency Plan, Shelter in Place Protocols, Evacuation Protocols	Weapons Policy	Full-time building official (i.e. Principal)	Emergency Manager	Grant Writer	Public Information Officer	Capital improvements project funding	Local funds	General obligation bonds	Special tax bonds	Private activities/donations	State and federal funds
Anderson County														
USD #365 - Garnett	x	x	x	x	x				x	x	x		x	x
USD #479 - Crest			x	x	x									
Coffey County														
USD #243 - Lebo / Waverly			x	x	x				x	x	x		x	x
USD #244 - Burlington		x	x	x	x				x	x	x		x	x
USD #245 - LeRoy / Gridley			x	x					x	x	x		x	x
Franklin County														
USD #287 - West Franklin			x	x	x								x	x
USD # 288 - Central Heights	x	x	x	x	x	x		x	x	x			x	x
USD #289 - Wellsville	x	x	x	x	x	x		x	x	x	x		x	x
USD #290 - Ottawa	x	x	x	x	x	x		x					x	x
Linn County														
USD #344 - Pleasanton	x	x	x	x	x			x	x	x			x	x
USD #346 - Mound City	x	x	x	x	x			x	x	x	x	x	x	x
USD #362 - Prairie View	x	x	x	x	x			x	x	x	x	x	x	x
Miami County														
USD #367 - Osawatomie	x	x	x	x	x		x	x	x	x			x	
USD #368 - Paola			x	x	x	x		x	x		x			
USD #416 - Louisburg		x	x	x	x				x	x	x			x
Osage County														
USD #420 - Osage City	x		x	x	x				x	x			x	x
USD #421 - Lyndon	x		x	x	x				x	x			x	x
USD #434 - Santa Fe Trail		x	x	x	x				x	x				x
USD #454 - Burlingame		x	x	x	x				x	x				x
USD #456 - Marais des Cygnes Valley	x		x	x	x				x	x			x	x
Three Lakes Educational Cooperative			x	x	x					x				

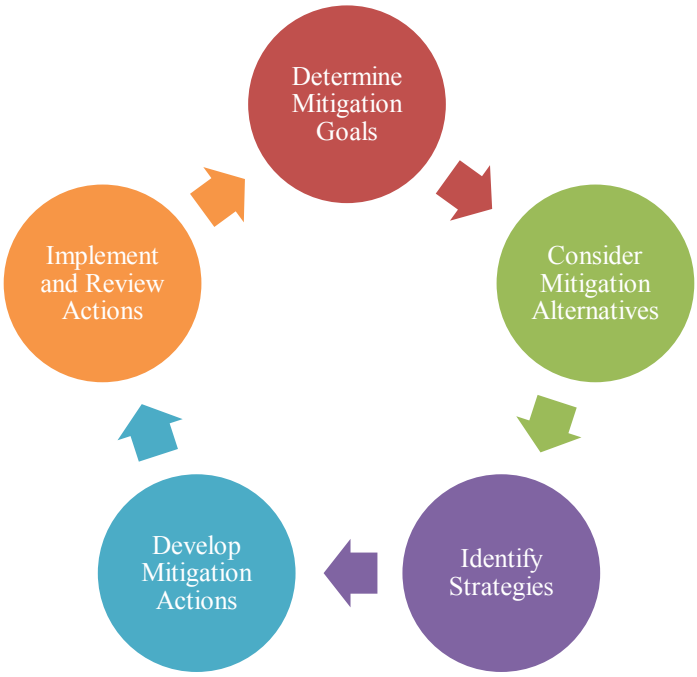
School, College or University	Master Plan	Capital Improvement Plan	School Emergency Plan, Shelter in Place Protocols, Evacuation Protocols	Weapons Policy	Full-time building official (i.e. Principal)	Emergency Manager	Grant Writer	Public Information Officer	Capital improvements project funding	Local funds	General obligation bonds	Special tax bonds	Private activities/donations	State and federal funds
Shawnee County														
USD #321 - Kaw Valley	x	x	x	x	x	x		x	x	x				x
USD #345 - Seaman	x	x	x	x	x	x		x	x	x	x	x	x	x
USD #372 - Silver Lake	x		x	x	x	x		x		x				x
USD #437 - Auburn / Washburn	x	x	x	x	x	x		x	x	x			x	x
USD #450 - Shawnee Heights	x	x	x	x	x	x		x	x	x	x		x	x
USD #501 - Topeka	x	x	x	x	x	x		x	x	x	x		x	x
Washburn University	x	x	x	x	x	x	x	x	x	x			x	x

5.0 MITIGATION ACTIONS

5.1 INTRODUCTION

44 CFR 201.6 (c)(3) requires "A mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tool."

This section of the Plan describes development of a mitigation strategy for each participating jurisdiction, and the region as a whole. In general, developing a comprehensive strategy consists of:



To ensure that a comprehensive mitigation strategy was developed, a thorough review of potential regional and local hazards and current policies, procedures and regulations was conducted to help participating jurisdictions identify and achieve their goals. Additionally, this review assists participating jurisdictions in linking relevant policies, procedures, regulations, ordinances and planning documents to help establish priorities and meet desired implementation deadlines.

For the 2014 regional combination and update, historical goals, objectives, and strategies were re-examined, and where applicable combined, and new goals and strategies were identified and included.

5.2 IDENTIFICATION OF GOALS AND OBJECTIVES

44 CFR 201.6 (c)(3)(i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

The HMPC developed goals and objectives to provide direction for reducing hazard-related losses both locally and regionally. The following definitions of goals and objectives were provided by FEMA in publication 386-3, *Developing a Mitigation Plan* (2002):

- **Goal:** General guidelines that explain what you want to achieve. Goals are defined before considering how to accomplish them so that they are not dependent on the means of achievement. They are usually long-term, broad, policy-type statements.

Identified goals were based on known hazards and a review of goals and objectives from previously approved county mitigation plans and the 2007 Kansas Hazard Mitigation Plan. This review was conducted to ensure that this region's goals were both obtainable and practical.

Through a group discussion at their second meeting, the HMPC identified and refined four primary, cross-jurisdictional goals. The identified goals are as follows:

- **Goal 1:** Reduce and/or eliminate the risk to the people and property of east-central Kansas from the identified hazards in this plan.
- **Goal 2:** Strive to protect all of the vulnerable populations, structures, and critical facilities in east-central Kansas from the impacts of the identified hazards.
- **Goal 3:** Improve public outreach initiatives to include education, awareness and partnerships with all willing entities in order to enhance understanding of the risks east-central Kansas faces due to the impacts of the identified hazards.
- **Goal 4:** Enhance communication and coordination among all agencies and between agencies and the public.

5.3 IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIONS

44 CFR 201.6 (c)(3)(ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on NEW and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

For this plan update and regional combination participating jurisdictions were provided with a complete list of their previous mitigation actions and asked to review them to determine if they had been achieved, are in process or on hold, or had been cancelled. Additionally, participating jurisdictions were provided with forms to identify and incorporate newly identified actions. Participating jurisdictions priorities were developed based on past damages, existing exposure to

risk, other community goals, and weaknesses identified by the local government capability assessments.

In preparing the region's mitigation strategy all reasonable and obtainable mitigation actions were considered to help achieve the general regional goals. A dditionally, each participating jurisdiction was invited to identify relevant actions.

In identifying and reviewing mitigation actions, the following activities recommended by the EMAP were considered:

- The use of applicable building construction standards
- Hazard avoidance through appropriate land-use practices
- Relocation, retrofitting, or removal of structures at risk
- Removal or elimination of the hazard
- Reduction or limitation of the amount or size of the hazard
- Segregation of the hazard from that which is to be protected
- Modification of the basic characteristics of the hazard
- Control of the rate of release of the hazard
- Provision of protective systems or equipment for both cyber or physical risks
- Establishment of hazard warning and communication procedures
- Redundancy or duplication of essential personnel, critical systems, equipment, and information materials.

In addition, participating jurisdictions were provided with information on types of mitigation actions. A handout was provided at the first meeting, and upon request, with types of mitigation actions which originated from the National Flood Insurance Program's Community Rating System. The follow provides a brief explanation of each action.

Prevention: Administrative or regulatory actions or processes that influence the way land and buildings are developed and built, including:

- Planning and zoning
- Building codes
- Open space preservation
- Floodplain regulations
- Stormwater management regulations
- Drainage system maintenance
- Capital improvements programming
- Shoreline and riverine setbacks

Property protection: Actions that involve the modification of existing buildings or structures to protect them from a hazard or remove them from the hazard area, including:

- Acquisition

- Relocation
- Building elevation
- Critical facilities protection
- Retrofitting
- Safe room and shatter-resistant glass
- Insurance

Structural: Actions that involve the construction of structures to reduce the impact of hazard, including:

- Reservoirs
- Dams and levees
- Diversion, detention and/ or retention
- Channel modification
- Storm sewers

Natural resource protection: Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems, including

- Floodplain protection
- Watershed management
- Riparian buffers
- Forest/ vegetation management
- Erosion and sediment control
- Wetland preservation and restoration
- Habitat preservation
- Slope stabilization

Emergency services: Although not typically considered a "mitigation" technique, theses are actions that protect people and property during and immediately after a disaster or hazard event, including:

- Warning systems
- Evacuation planning and management
- Emergency response training and exercises
- Sandbagging for flood protection
- Installing temporary shutters for wind protection

Public education and awareness: Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them, including:

- Outreach projects

- Speaker and/ or demonstration events
- Hazard map information
- Real estate disclosure
- Library materials
- School children educational programs

5.4 PRIORITIZING MITIGATION ACTIONS

44 CFR 201.6 (c)(3) (iii) An action plan describing how the actions identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

In formulating a regional mitigation strategy, a wide range of activities was considered to help achieve identified goals and to lessen the vulnerability of the region to the effects of identified hazards.

Through a series of jurisdictional meetings, phone discussions, electronic communications and self analysis participating jurisdictions were asked to review the previously determined regional and local mitigation actions to determine if they had been completed, were On- Going, or had been cancelled. In addition, jurisdictions were asked to review the initial STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) analysis to see if the ranking were still applicable. Participating jurisdictions were asked to submit any NEW mitigation actions with an analysis while newly participating jurisdictions were required, as per FEMA, to submit NEW mitigation actions.

A self analysis method was used for reviewing and prioritizing mitigation action alternatives. This methodology takes all local considerations into account to ensure that, based on a jurisdictions' capabilities, funding, public wishes, political climate, and legal framework and context reasonable actions are determined. The following provides a brief description of each consideration:

- Are all people within the jurisdiction being treated equally and fairly?
- Will the action disrupt the social fabric of the jurisdiction?
- Does the proposed action work and is it technically feasible?
- Does the action offer a long term solution to the problem?
- Does the jurisdiction have adequate staffing
- Is there someone to coordinate and lead the effort?
- Is there sufficient funding available?
- Are there ongoing administrative requirements that need to be met?
- Does the action have political and public support?
- Does the jurisdiction have the legal authority to implement the action?
- Will the jurisdiction be liable for the action or for any inaction?
- Could the action face any legal challenges?

- What are the costs and benefits of this action?
- Do the benefits exceed the costs?
- Has funding for the action been identified?

Identified actions were prioritized by the participating jurisdiction and were given one of the following rankings:

- **High:** Actions that should be implemented as soon as possible
- **Medium:** Actions that should be implemented in the long-term
- **Low:** Actions that should be implemented if and when funding becomes available

Of major concern to all participating jurisdictions was the potential or identified cost of each action. In general, identified actions were proposed to reduce future damages. As such, it is critical that selected and implemented actions provide a greater saving over the life of the action than the initial cost.

For structural and property protection actions cost effectiveness is primarily assessed on:

- Likelihood of damages occurring
- Severity of the damages
- Potential effectiveness

For all other type of actions, including legislative actions, codes and ordinances, maintenance and education, cost effectiveness is primarily assessed on likely future benefits as these actions may not easily result in a quantifiable reduction in damage.

Although detailed analysis was not conducted during the mitigation action development process, these factors were of primary concern when selecting measures.

Each participating jurisdiction's mitigation actions, including newly identified actions and reviewed actions, can be found in the following sections listed by county.

Where a strategy's status is blank, either updates were not received from the jurisdiction, or the jurisdiction has elected not to participate in this process.

5.5 FUNDING SOURCES

It is generally recognized that mitigation actions help communities realize long term savings by preventing future losses due to hazard events. However, many mitigation actions are beyond the budgetary capabilities of a single jurisdiction. This section provides a general description of some of the avenues available to jurisdictions to defray the cost of implementing mitigation actions The following are potential available funding streams:

- Hazard Mitigation Grant Program (HMGP): The HMGP assists in implementing long-term hazard mitigation measures following Presidential disaster declarations. Funding is available to implement projects in accordance with State, Tribal, and local priorities.

- Pre-Disaster Mitigation (PDM): The PDM program provides funds on an annual basis for hazard mitigation planning and the implementation of mitigation projects prior to a disaster. The goal of the PDM program is to reduce overall risk to the population and structures, while at the same time, also reducing reliance on Federal funding from actual disaster declarations.

- Flood Mitigation Assistance (FMA): FMA provides funds on an annual basis so that measures can be taken to reduce or eliminate risk of flood damage to buildings insured under the NFIP.

- Public Assistance (PA) Grant Program: The mission of FEMA's PA program is to provide assistance to State, Tribal and local governments, and certain types of Private Nonprofit organizations so that communities can quickly respond to and recover from major disasters or emergencies declared by the President. Through the PA program, FEMA provides supplemental Federal disaster grant assistance for debris removal, emergency protective measures, and the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain private non-profit organizations. The PA Program also encourages protection of these damaged facilities from future events by providing assistance for hazard mitigation measures during the recovery process. The Federal share of assistance is not less than 75% of the eligible cost for emergency measures and permanent restoration. The grantee (usually the State) determines how the non-Federal share (up to 25%) is split with the eligible applicants.

- Small Business Administration (SBA) Disaster Loans: The SBA provides low-interest disaster loans to homeowners, renters, businesses of all sizes, and most private nonprofit organizations. SBA disaster loans can be used to repair or replace the following items damaged or destroyed in a declared disaster: real estate, personal property, machinery and equipment, and inventory and business assets.

- The Housing and Urban Development Agency provides flexible grants to help cities, counties, and States recover from Presidentially declared disasters, especially in low-income areas, subject to availability of supplemental appropriations.

- Community Development Block Grant Program - The Community Development Block Grant (CDBG) program is a flexible program that provides communities with resources to address a wide range of unique community development needs. Beginning in 1974, the CDBG program is one of the longest Continuously run programs at the Housing and Urban Development Agency. The CDBG program provides annual grants on a formula basis to 1209 general units of local government and States. HUD provides flexible grants to help cities, counties, and States recover from Presidentially declared disasters, especially in low-income areas, subject to availability of supplemental appropriations.

- Individual & Households, Other Needs Assistance (ONA) Program: The ONA program provides financial assistance to individuals or households who sustain damage or develop serious needs because of a natural or man-made disaster. The funding share is 75% federal funds and 25% state funds. The ONA program provides grants for necessary expenses and serious needs that cannot be provided for by insurance, another federal program, or other source of assistance. The current maximum allowable amount for any one disaster to individuals or families is $25,000. The program gives funds for disaster-related necessary expenses and serious needs, including the following categories:

    - Personal property
    - Transportation
    - Medical and dental
    - Funeral
    - Essential tools
    - Flood insurance
    - Moving and storage

- Wildland Urban Interface (WUI) Grants: The 10-Year Comprehensive Strategy focuses on assisting people and communities in the WUI to moderate the threat of catastrophic fire through the four broad goals of improving prevention and suppression, reducing hazardous fuels, restoring fire-adapted ecosystems, and promoting community assistance. The WUI Grant may be used to apply for financial assistance towards hazardous fuels and educational projects within the four goals of: improved prevention, reduction of hazardous fuels, restoration of fire-adapted ecosystems and promotion of community assistance.

5.6 JURISDICTIONAL MITIGATION ACTIONS

(iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Information as to the identified mitigation actions for participating jurisdictions is summarized in the following sections and tables. All mitigation action information was provided by jurisdictional officials through the outreach from the HMPC. For each action presented the current status is provided. Actions listed as on-going are carried over from the previous plan and are awaiting funding or opportunity to start. Actions that are listed as completed have been finished. Actions listed as deleted have been removed from consideration. New actions are actions that have been added for this plan and are identified as such. Any information listed with a "-" is either no longer relevant or unavailable. Finally, some actions have been reassigned and are noted as such. In these cases not all information is provided under the original listing, rather the newly assigned responsible entity has been given the opportunity to detail the requested information.

5.6.1 ANDERSON COUNTY

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even if a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	Director of Emergency Management	High	1,2,3,4	Staff Time	Local, State	Continuous	On-going, Continuous
Anderson County-2	Advertise and promote the availability of flood insurance to property owners by direct mail annually. Anderson County participates in the NFIP. There are currently 10 policies in effect, with a total coverage amount of $728,600. Since 1978, there have been 4 claims paid for a total loss paid amount of $205,554. NFIP flood insurance policies protect property owners by offering affordable rates for protecting both structures and contents.	Flood	Director of Emergency Management	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Anderson County-3	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	Director of Emergency Management	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-4	Annually host a public "hazards workshop" in combination with local festivals, fairs, or other community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs , FEMA publications, tornado information, safety tips, etc.	All Hazards	Director of Emergency Management	High	3,4	$250.00 per workshop	Local, State, Federal	Continuous	On-going, Continuous
Anderson County-5	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	Director of Emergency Management	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Anderson County-6	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide informational brochures and pamphlets on safe driving measures at no cost.	Winter Storm	Director of Emergency Management	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-7	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional, state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	Director of Emergency Management	High	3,4	$500.00 per year	Local, State, Federal	Continuous	On-going, Continuous
Anderson County-8	Coordinate county and local government mitigation efforts with RECs , encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	Director of Emergency Management	High	3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-9	Anderson County is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	Director of Emergency Management	High	1,2,3,4	Staff Time	State, FEMA	Continuous	On-going, Continuous
Anderson County-10	Develop a program to acquire and preserve parcels of land subject to repetitive flooding from willing and voluntary property owners. Land acquisition is an effective mitigation technique to permanently eliminate the potential for damages from future flood events. Anderson County can apply for grant funding to acquire flood-prone parcels of land from voluntary and willing property owners.	Flood	Director of Emergency Management	High	1,2,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Anderson County-11	Contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	Director of Emergency Management	High	1,2,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-12	Identify flash-flood prone areas to consider flood reduction measures to county planners. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Flood	Director of Emergency Management	High	1,2,4	Staff Time	Local	12/31/2019	On-going
Anderson County-13	Research and design an appropriate stream buffer ordinance to further protect the jurisdiction's water resources and to limit future flood damages adjacent to major waterways. Riparian buffers serve as natural boundaries between local waterways and existing development and help protect resources by filtering pollutants, providing flood control, alleviating streambank erosion, mitigating stream warming, and providing room for lateral movement of the stream channel. Buffer widths can vary greatly depending upon stream channel size and the intended purpose of the buffer, but 50-100 feet is generally considered to be sufficient for purposes of bank stabilization and sediment control. Many communities require 200 feet for flood control purposes. Special consideration should be given to exempting Anderson County's agricultural operations from buffer regulations.	Flood	Director of Emergency Management	High	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-14	Regularly calculate and document the amount of flood prone property that is preserved as open space to reduce flood insurance burden to the county. CRS credit is given for areas that are permanently preserved as open space. Although credit is not given for federal lands, the jurisdiction maintains and continues to expand floodplain areas preserved as open space through land acquisition projects (i.e., HMGP), which protect parcels from development through deed restrictions. The jurisdiction also has floodplain land within state parks or otherwise preserved as wildlife and natural preserves, which does qualify for additional CRS credit.	Flood	Director of Emergency Management	High	1,2,3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Anderson County-15	Incorporate the inspection and management of trees that may pose a threat to the county and incorporated cities routine maintenance system process. A significant amount of property damage during weather events results from tree failure. Trees that fall into utility lines have additional serious consequences such as causing power outages, surges, fires and other damage. Anderson County's ability to recognize and prevent hazardous tree conditions (through inspection, pruning or removal) is the best defense against problems and costly damages resulting from tree failure. Specifically, trees located on County or critical facilities property, which pose immediate threats to property and utility lines, should be addressed.	All Hazards	Director of Emergency Management	Medium	1,2	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-16	Examine the current agreements within the county and assess the need to expand or update cooperative agreements for firefighting resources. Include agreements with local, state and federal agencies. Cooperative agreements provide the support needed in times of emergency, and are an important element of planning, with the long-range goal of reducing damage to structures and systems within the jurisdiction.	Wildfire	Director of Emergency Management	High	1,2,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Anderson County-17	Evaluate the firefighting water supply resources within the County, including both fixed and mobile supply issues. Lack of sufficient water supply makes it difficult for firefighters to suppress fires. Whenever possible, increasing access to water along water service delivery lines (wet and dry hydrants) would provide additional resources for emergency responders.	Wildfire	Director of Emergency Management	Medium	1,2	Staff Time	Local	12/31/2019	On-going, Continuous
Anderson County-18	Develop and implement a wildfire prevention/education program. In addition to providing education to the general public, the program should also target children, fire and equipment users, builders and developers, and homeowners. The jurisdiction has burn-ban resolutions which require special permission to conduct open burning operations. In periods of drought or extreme weather conditions a burn ban may be declared. When a ban is declared all radio stations, TV stations, and newspapers in the area are notified as well as City Managers, fire chiefs, etc. To better educate the public at large, the jurisdiction should expand the existing fire protection program to include wildfire workshops to all age groups and commercial operations.	Wildfire	Director of Emergency Management	Medium	3,4	$1200 per year	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-19	Conduct inventory/survey for the county emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to ensure the county's current emergency services are adequate to protect public health and safety from anticipated hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations for emergency service enhancements.	All Hazards	Director of Emergency Management	Medium	1,2,4	Staff Time	Local, State	12/31/2019	On-going
Anderson County-20	Identify the most at-risk vital / critical facilities, and evaluate the potential mitigation techniques for protecting each facility in a cost effective manner. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	Director of Emergency Management	Medium	1,2,4	Staff Time	Local, State	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-21	Contact owners of high hazard dams in the county and inform them of their responsibility to provide and update Emergency Action Plans to Anderson County Emergency Management as prescribed by the KDA-DWR, Chief Engineer. Anderson County has 69 dams in the county that are regulated by the Kansas Department of Agriculture, Water Resources Department. One of these dams, the Cedar Creek Reservoir, is classified as a "High Hazard Class C" structure, and is owned and operated by the City of Garnett. This structure has an Emergency Action Plan on file with emergency management for the protection of life and property downstream of the structure. An individual dam or levee hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing for a potential emergency is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Dam and Levee Failure	Director of Emergency Management	High	1,2,3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-22	Develop an annex to the LEOP for dam failure response and evacuation plans for the high hazard dam located in Anderson County. Anderson County has 69 dams in the county that are regulated by the KDA-DWR. One of these dams, the Cedar Creek Reservoir, is classified as a "High Hazard Class C" structure, and is owned and operated by the City of Garnett. The State evaluation of the dam is based on location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe. An individual dam's hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing for a potential emergency is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Dam and Levee Failure	Director of Emergency Management	High	1,2,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-23	Research, develop and recommend a resolution to the existing Anderson County Zoning Regulations to require installation of tornado shelters for any new major manufactured and/or mobile home parks with more than 10 mobile home spaces. Mobile homes are particularly vulnerable to damage from high winds. Tornado shelters should be constructed in major mobile home parks to ensure a safe place for residents to go during a tornado event. The shelter structure, which should be designed to withstand a minimum of 120mph winds, could easily serve an alternate purpose such as a community center, laundry facility, etc.	Tornado, Windstorm	Director of Emergency Management	High	1,2,4	Staff Time	Local	12/31/2019	On-going
Anderson County-24	Research and recommend appropriate building codes for the County that include wind-resistant design techniques for new construction. Incorporated and unincorporated areas of the county should consider the adoption and enforcement of codes that require certain minimum building practices and contractor licensing for wind loss reduction. Techniques include adding protection for windows (i.e., shutters), anchoring door frames with multiple hinges, stiffening garage doors with additional bracing, reinforcing masonry chimneys with vertical steel, and strengthening connections between walls and the roof with hurricane straps and ties. These techniques should be promoted to building contractors and homebuyers by the county for all new residential construction, to the maximum extent possible during the building permit process.	Tornado, Windstorm	Director of Emergency Management	High	1,2,3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-25	Seek funding to retain an engineer to design a community tornado shelter for the Township of Welda and apply for grant funding for construction. A lack of tornado shelters pose a serious risk to the safety of a community. Anderson County (UnInc.) has identified a need for a community storm shelter for the Township of Welda.	Tornado	Director of Emergency Management	Medium	1,2	$40,000	Local, State, Federal	12/31/2019	On-going
Anderson County-26	Lyon-Coffey Electric Cooperative, Inc. will continue to coordinate mitigation efforts with county and local governments, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	Director of Emergency Management	Medium	4	Staff Time	Local, State, Federal	12/31/2019	On-going
Anderson County-27	The Deer Creek Watershed Joint District No. 55 will continue to construct, operate, monitor, and maintain watershed-related structures and easements within their district. The Deer Creek Watershed Joint District No. 55 will evaluate the need for further construction, operation, and maintenance projects, and additional efforts will be made to seek alternative funding sources as they become available.	Dam and Levee Failure	Director of Emergency Management	Medium	1,2,4	Unknown	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Anderson County-28	The Pottawatomie Creek Watershed Joint District No. 90 will research funding options to repair damaged emergency spillway outlets and the possible construction of a new flood control dam. The district will evaluate the need for further construction, operation, and maintenance projects, and additional efforts will be made to seek alternative funding sources as they become available.	Dam and Levee Failure	Director of Emergency Management	Medium	1,2,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Colony-1	Coordinate county and local mitigation efforts with RECs and utilities, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies.	Utility/ Infrastructure Failure	City Manager	High	1,2	Staff Time	Local, State	Continuous	New
Colony-2	Conduct a study to determine the efficacy of the existing generators located within Critical Facility structures and consider funding options for any Critical Facilities that may require generators and/or transfer switches to maintain power in the event of severe weather events.	All Hazards	City Manager	High	1,2	Staff Time	Local, State	Continuous	New
Garnett-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State	Continuous	On-going, Continuous
Garnett-2	Advertise and promote the availability of flood insurance to property owners by direct mail annually.	Flood	City Manager	High	3,4	$500 per year	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Garnett-3	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Garnett-4	Annually host a public "hazards workshop" in combination with local festivals, fairs, or other community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local, State, Federal	Continuous	On-going, Continuous
Garnett-5	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Garnett-6	Educate residents about driving in winter storms and handling winter-related health effects. US Department of Transportation (USDOT), KDOT, and other agencies provide informational brochures and pamphlets on safe driving measures at no cost to local governments.	Winter Storm	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Garnett-7	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional, state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	High	3,4	$250.00 per year	Local, State, Federal	Continuous	On-going, Continuous
Garnett-8	Coordinate county and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Garnett-9	The City of Garnett is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA	Continuous	On-going, Continuous
Garnett-10	Assess flood prone areas and recommend flood reduction measures to city officials. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	High	1,2,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Garnett-11	Seek funding sources to develop a storm drainage improvement, inspection, and cleaning program for the City of Garnett, including the cleaning of catch-basins, sewers, ditches, and siphons at flood-prone areas. The City of Garnett has identified a need for a program that would include debris-blocking catch basins and ditches to alleviate flooding issues due to lack of storm water drainage.	Flood	City Manager	Medium	1,2,4	Unknown	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Garnett-12	Incorporate a vegetation management program, including the inspection and management of trees that may pose a threat to the city's routine maintenance system process, to ensure that the city infrastructure and population are secure during and after a natural hazard event. A significant amount of property damage during weather events results from tree failure. Trees that fall into utility lines have additional serious consequences such as causing power outages, surges, fires and other damage. The City of Garnett's ability to recognize and prevent hazardous tree conditions (through inspection, pruning or removal) is the best defense against problems and costly damages resulting from tree failure. Specifically, trees and/or limbs in the city easements should be addressed.	All Hazards	City Manager	Medium	1,2	$8,000 per year	Local, State	12/31/2019	On-going
Garnett-13	Update the existing building code requirements for the City of Garnett that include wind-resistant design techniques for new construction and remodeling. Educate the public and contractors on code requirements through newsletters and city meetings. The City of Garnett has identified a need to adopt and enforce codes that require certain minimum building practices and contractor licensing for wind loss reduction. Techniques include adding protection for windows (i.e., shutters), anchoring door frames with multiple hinges, stiffening garage doors with additional bracing, reinforcing masonry chimneys with vertical steel, and strengthening connections between walls and the roof with hurricane straps and ties.	All Hazards	City Manager	High	1,2,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Garnett-14	Research funding options and consider completion of the city's long-range water supply plan by installing a water line from the Cedar Creek Reservoir to the City of Garnett Water Plant. The City of Garnett has identified a need to install a direct water line from the Cedar Creek Reservoir to the City of Garnett Water Plant. Currently, water is pumped from North Lake and the Reservoir into Crystal Lake prior to the water plant. A direct line will also alleviate water evaporation in the system.	Utility/ Infrastructure Failure	City Manager	Medium	1,2,4	Unknown	Local, State, Federal	12/31/2019	On-going
Garnett-15	Promote the construction of safe rooms in new construction and remodels though annual construction meetings and city newsletters. The City of Garnett has identified a need to promote the construction of safe rooms in new construction and remodels.	Tornado, Windstorm	City Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous
Garnett-16	Research and develop a vegetation management control program for the Cedar Creek dam to prevent erosion and downstream flooding.	Flood	City Manager	Medium	1,2,4	$5,000	Local, State	12/31/2019	On-going
Garnett-17	Monitor, evaluate, and repair drainage systems in the areas of Garnett which have experienced repetitive flooding. The City of Garnett has identified a need to evaluate the drainage systems in areas of the City of Garnett which have experienced repetitive flooding events.	Flood	City Manager	Medium	1,2	$20,000	Local	12/31/2019	On-going
Garnett-18	Research and recommend that developers perform a storm water analysis prior to new development in an effort to minimize storm water runoff.	Flood	City Manager	High	1,2,4	Staff Time	Local	12/31/2019	On-going
Garnett-19	Research and recommend and complete the enlargement of culvert and drain lines in areas of flooding to increase storm water capacity.	Flood	City Manager	Medium	1,2,4	$40,000	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Garnett-20	Research and recommend amendments to current ordinances for installation of backflow prevention devices for all new construction in an effort to alleviate damage due to storm water backup.	Flood	City Manager	High	1,2,4	Staff Time	Local	12/31/2019	On-going
Garnett-21	Provide public education on hazardous weather situations, including lightning strikes, for residents to protect themselves, their property, and the community.	All Hazards	City Manager	High	3,4	Staff Time	Local	12/31/2019	On-going
Garnett-22	Research, develop and implement a special needs program for emergency notification and individual preparedness instructions for special needs citizens, including emergency evacuations plans for special needs residents.	All Hazards	City Manager	High	1,2,4	Staff Time	Local	12/31/2019	On-going
Garnett-23	Provide advanced warning systems for hazardous weather events to allow construction sites and citizens to take mitigating steps prior to the onset of hazardous weather.	All Hazards	City Manager	Medium	1,2	$30,000	Local	12/31/2019	On-going
Garnett-24	Research, develop and implement a plan for education and outreach to the public, including mailings, media outreach, and strategic partnerships, regarding pipeline safety risks.	All Hazards	City Manager	High	3,4	Staff Time	Local	12/31/2019	On-going
Garnett-25	Research, develop and implement a plan for public education and personal responsibility for planning the evacuation of pets in the case of an emergency.	All Hazards	City Manager	High	3,4	Staff Time	Local	12/31/2019	On-going
Garnett-26	Conduct a study to determine the efficacy of the existing warning siren system within the City of Garnett, and research funding options to maintain existing sirens or install new sirens as necessary to ensure future area coverage. Reduce the possibility of damages and loss of life to the citizens by upgrading the existing early warning system and maintaining coverage areas for the City of Garnett.	Tornado, Windstorm	City Manager	Medium	1,2,4	$25,000	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Greeley-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State	Continuous	On-going, Continuous
Greeley-2	Advertise and promote the availability of flood insurance to property owners by direct mail annually.	Flood	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Greeley-3	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	$500	Local	Continuous	On-going, Continuous
Greeley-4	Annually host a public "hazards workshop" in combination with local festivals, fairs, or other community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Greeley-5	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Greeley-6	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT, and other agencies provide informational brochures and pamphlets on safe driving measures at no cost to local governments.	Winter Storm	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Greeley-7	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional, state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	High	3,4	$250 per year	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Greeley-8	Coordinate county and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	3,4	Staff Time	Local	12/31/2019	On-going
Greeley-9	Consider developing an application package for participation in the NFIP. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program. The jurisdiction must submit an application package that includes the following: an application for participation in the NFIP (FEMA Form 81-64); an adopted Resolution of Intent, which indicates an explicit desire to participate in the NFIP and a commitment to recognize flood hazards and carry out the objectives of the program; adopted Floodplain Management Regulations that exceed the minimum flood plain management requirements of the NFIP (44 CFR section 60.3); and a statement that the floodplain management regulations are legally enforceable. The city is flood mapped, but does not participate in the NFIP. Review of the FIRM for the City of Greeley (Initial Identification 1974; Flood Hazard Boundary Map Revision 1979; FIRM Effective Date 1984) indicates SFHAs located throughout the northern and southern portions of the city, due to the presence of the South Fork of the Pottawatomie Creek. The SFHAs appear to encompass both residential and commercial developments throughout the city.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Greeley-10	Research funding options and consider the purchase of emergency generators and/or transfer switches to provide backup power for Critical Facilities. Winter storms generally create the greatest risk of power loss to critical facilities, although other hazards can also create outages. Heavy snow and ice accumulation often result in downed trees and power lines. Backup generators ensure that Critical Facilities located within the City of Greeley maintain power during severe weather events.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going
Kincaid-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State	Continuous	On-going, Continuous
Kincaid-2	Advertise and promote the availability of flood insurance to property owners by direct mail annually.	Flood	City Manager	High	3,4	$250	Local	Continuous	On-going, Continuous
Kincaid-3	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Kincaid-4	Annually host a public "hazards workshop" in combination with local festivals, fairs, or other community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local, State, Federal	Continuous	On-going, Continuous
Kincaid-5	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Utility/ Infrastructure Failure	City Manager	High	1,2	$500,000	Local, State, Federal	Continuous	On-going, Continuous
Kincaid-6	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT, and other agencies provide informational brochures and pamphlets on safe driving measures at no cost to local governments.	Winter Storm	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Kincaid-7	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional, state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	High	3,4	$250	Local, State, Federal	Continuous	On-going, Continuous
Kincaid-8	Coordinate county and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Kincaid-9	Research funding options and consider the purchase of emergency generators and/or transfer switches to provide backup power for Critical Facilities. Winter storms generally create the greatest risk of power loss to critical facilities, although other hazards can also create outages. Heavy snow and ice accumulation often result in downed trees and power lines. Backup generators ensure that Critical Facilities located within the City of Kincaid maintain power during severe weather events.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	$40,000	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Kincaid-10	Consider developing an application package for participation in the NFIP. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program. The jurisdiction must submit an application package that includes the following: an application for participation in the NFIP (FEMA Form 81-64); an adopted Resolution of Intent, which indicates an explicit desire to participate in the NFIP and a commitment to recognize flood hazards and carry out the objectives of the program; adopted Floodplain Management Regulations that exceed the minimum flood plain management requirements of the NFIP (44 CFR section 60.3); and a statement that the floodplain management regulations are legally enforceable. The city of Kincaid is flood mapped, but does not participate in the NFIP. Review of the Flood Hazard Boundary Map for the city of Kincaid (Effective Date November 1974) indicates SFHAs trending north-south on the west side of the city, due to the presence of an unnamed tributary of the North Fork of the Little Osage River in the area. It appears these areas include some populated residential areas of the city.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Westphalia-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State	Continuous	On-going, Continuous
Westphalia-2	Advertise and promote the availability of flood insurance to property owners by direct mail annually.	Flood	City Manager	High	3,4	$500	Local	Continuous	On-going, Continuous
Westphalia-3	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Westphalia-4	Annually host a public "hazards workshop" in combination with local festivals, fairs, or other community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Westphalia-5	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	$500,000	Local, State, Federal	Continuous	On-going, Continuous
Westphalia-6	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT, and other agencies provide informational brochures and pamphlets on safe driving measures at no cost to local governments.	Winter Storm	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Westphalia-7	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional, state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	High	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Westphalia-8	Coordinate county and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Westphalia-9	Consider developing an application package for participation in the NFIP. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program. The jurisdiction must submit an application package that includes the following: an application for participation in the NFIP (FEMA Form 81-64); an adopted Resolution of Intent, which indicates an explicit desire to participate in the NFIP and a commitment to recognize flood hazards and carry out the objectives of the program; adopted Floodplain Management Regulations that exceed the minimum flood plain management requirements of the NFIP (44 CFR section 60.3); and a statement that the floodplain management regulations are legally enforceable. The city of Westphalia is flood mapped, but does not participate in the NFIP. Review of the Flood Hazard Boundary Map for the city of Westphalia (Effective Date December 1974) indicates SFHAs trending east-west in the northern and southern portions of the city, due to the presence of tributaries of Thomas Creek located in these areas. It appears these SFHA areas include some populated residential areas of the city.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Westphalia-10	Research funding options and consider the purchase of emergency generators and/or transfer switches to provide backup power for Critical Facilities. Winter storms generally create the greatest risk of power loss to critical facilities, although other hazards can also create outages. Heavy snow and ice accumulation often result in downed trees and power lines. Backup generators ensure that Critical Facilities located within the City of Westphalia maintain power during severe weather events.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	$40,000	Local, State, Federal	12/31/2019	On-going
USD365-1	Develop and fund mitigation projects for the construction of tornado safe rooms for Unified School District 365 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendant	Low	1,2	$1,500,000	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD365-2	Seek funding to retain a professional school safety and security firm to review and update the school's Security Plan for domestic acts of terrorism, building security, and contagious disease response. As domestic acts of terrorism are becoming more of reality, many officials believe that the next wave of terrorists acts may be aimed at public school systems. Although these events are impossible to predict with great accuracy, updating building security, school security plans, and USD emergency plans can prepare school districts such as USD 365 for these events. Companies such as the National School Safety and Security Services provide the expertise in this field to help review and upgrade plans for the district.	Terrorism/ Agri-Terrorism, Civil Disorder	Superintendant	Low	1,2	$40,000	Local, State, Federal	12/31/2019	On-going
USD365-3	Seek funding options for the purchase and installation of backup power generators for the schools of USD 365. USD 365 has identified a need to quickly restore power in all of its schools in the event of a weather event and the subsequent loss of power.	Utility/ Infrastructure Failure	Superintendant	Medium	1,2	$40,000	Local, State, Federal	12/31/2019	On-going
USD479-1	Develop and fund mitigation projects for the construction of tornado safe rooms for Unified School District 479 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendant	Low	1,2	$1,000,000	Local, State, Federal	12/31/2019	On-going

5.6.2 COFFEY COUNTY

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Coffey County-1	The cities of Burlington, Gridley, New Strawn, Lebo, LeRoy, and Waverly are committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	-	-	-	-	-	-	-	Deleted
Coffey County-2	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited public offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost to local governments.	All Hazards	Emergency Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Coffey County-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	All Hazards	Emergency Manager	High	3,4	$500 per workshop	Local	Continuous	On-going, Continuous
Coffey County-4	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	Emergency Manager	Low	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going
Coffey County-5	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	Emergency Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Coffey County-6	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. Coffey County is basically an agricultural community. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the Local Emergency Operations Plan, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	Emergency Manager	Medium	3,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Coffey County-7	Coordinate County and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	Emergency Manager	High	4	Staff Time	Local, State, Federal	12/31/2019	On-going
Coffey County-8	Research, develop, and submit a FEMA application package for admittance to the NFIP to make flood insurance available to residents of Coffey County.	Flood	-	-	-	-	-	-	Deleted

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Coffey County-9	Research, develop, and recommend a Comprehensive Land Use Plan for Coffey County. A Land Use Plan is a policy document that describes the official vision of the physical form and appearance desired for the county as it continues to grow over the coming years. That is, the Land Use Plan attempts to answer the question "what do we want the county to be like ten or twenty years from now?" Thus, the Plan provides a long-range vision (guide) for growth management.	Flood	Emergency Manager	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going
Coffey County-10	Identify the County's most at-risk critical facilities, and evaluate potential mitigation techniques for protecting each facility to the maximum extent possible. A thorough evaluation of potential mitigation opportunities for Coffey County's critical facilities must still be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	Emergency Manager	High	1,2,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Coffey County-11	Develop an annex to the LEOP for dam failure response and evacuation plan for high hazard dams in Coffey County. Coffey County has 98 dams in the county that are regulated by the KDA-DWR. Two (2) of these structures are classified as "High Hazard Class C" structures. The Wolf Creek Unit -1 Cooling Lake Dam is owned by the Wolf Creek Nuclear Operating Corporation. The John Redmond Lake Dam is on the Grand Neosho River and is owned and operated by the Corps of Engineers. The State evaluation of the dams is based on location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe, as defined by the State of Kansas. An individual dam's hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing for a potential emergency is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Dam and Levee Failure	Emergency Manager	Medium	1,2,3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Coffey County-12	Research and recommend appropriate building codes for the county that include wind-resistant design techniques for new construction. Incorporated and unincorporated areas of the county should adopt and enforce codes that require certain minimum building practices and contractor licensing for wind loss reduction. Techniques include adding protection for windows (i.e., shutters), anchoring door frames with multiple hinges, stiffening garage doors with additional bracing, reinforcing masonry chimneys with vertical steel, and strengthening connections between walls and the roof with hurricane straps and ties. These techniques should be promoted to building contractors and homebuyers by the county for all new residential construction, to the maximum extent possible during the building permit process.	Tornado, Windstorm	Emergency Manager	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going
Coffey County-13	Conduct an inventory/survey for the emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to verify the county's current emergency services are adequate to protect public health and safety from most probable hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations to the County Commission for emergency service enhancements.	All Hazards	Emergency Manager	Medium	1,2,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Coffey County-14	Public Wholesale Supply District 12 will continue to assess the impact of natural hazards on water distribution lines, systems, and equipment. The Water District will also seek funding sources to mitigate damage to critical infrastructure, and seek funding for various water main improvement projects. Public Wholesale Supply District 12 provides potable water to their customers in Coffey County. Maintaining an adequate, quality water supply to their customers is the district's top priority.	All Hazards	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going, Continuous
Coffey County-15	Osage County RWD No. 4 will continue to assess the impact of natural hazards on water distribution lines, systems, and equipment. The Water District will also seek funding sources to mitigate damage to critical infrastructure, and seek funding for various water main improvement projects. The Osage County RWD No. 4 provides potable water to their customers in Coffey County. Maintaining an adequate, quality water supply to their customers is the district's top priority.	All Hazards	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going, Continuous
Coffey County-16	Anderson County RWD No. 4 will continue to assess the impact of natural hazards on water distribution lines, systems, and equipment. The Water District will also seek funding sources to mitigate damage to critical infrastructure, and seek funding for various water main improvement projects. The Anderson County RWD No. 4 provides potable water to their customers in Coffey County. Maintaining an adequate, quality water supply to their customers is the district's top priority.	All Hazards	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Coffey County-17	Anderson County RWD No. 5 will continue to assess the impact of natural hazards on water distribution lines, systems, and equipment. The Water District will also seek funding sources to mitigate damage to critical infrastructure, and seek funding for various water main improvement projects. The Anderson County RWD No. 5 provides potable water to their customers in Coffey County. Maintaining an adequate, quality water supply to their customers is the district's top priority.	All Hazards	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going, Continuous
Coffey County-18	Coffey County RWD No. 2 will continue to assess the impact of natural hazards on water distribution lines, systems, and equipment. The Water District will also seek funding sources to mitigate damage to critical infrastructure, and seek funding for various water main improvement projects. The Coffey County RWD No. 2 provides potable water to their customers in Coffey County. Maintaining an adequate, quality water supply to their customers is the district's top priority.	All Hazards	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going, Continuous
Coffey County-19	Coffey County RWD No. 3 will continue to assess the impact of natural hazards on water distribution lines, systems, and equipment. The Water District will also seek funding sources to mitigate damage to critical infrastructure, and seek funding for various water main improvement projects. The Coffey County RWD No. 3 provides potable water to their customers in Coffey County. Maintaining an adequate, quality water supply to their customers is the district's top priority.	All Hazards	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Coffey County-20	Wilson County RWD No. 9 will continue to assess the impact of natural hazards on water distribution lines, systems, and equipment. The Water District will also seek funding sources to mitigate damage to critical infrastructure, and seek funding for various water main improvement projects. The Wilson County RWD No. 9 provides potable water to their customers in Coffey County. Maintaining an adequate, quality water supply to their customers is the district's top priority.	All Hazards	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going, Continuous
Burlington-1	Burlington is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Burlington-2	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited public offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Burlington-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local	Continuous	On-going, Continuous
Burlington-4	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	Low	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going
Burlington-5	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Burlington-6	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	M	3,4	$500	Local, State, Federal	12/31/2019	On-going
Burlington-7	Coordinate County and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Local, State, Federal	12/31/2019	On-going
Burlington-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	Medium	1,2,3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Burlington-9	Review the current floodplain regulations and update as necessary. Category: Prevention The City of Burlington is currently in the process of updating their Comprehensive Land Use Plan. Once the Plan update is approved the city will need to review existing ordinances to assure they are in agreement with revised planning standards.	Flood	City Manager	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going
Gridley-1	Gridely is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Gridley-2	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited public offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost to local governments.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Gridley-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Gridley-4	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	Low	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going
Gridley-5	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Gridley-6	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	M	3,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Gridley-7	Coordinate County and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Local, State, Federal	12/31/2019	On-going
Gridley-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	Medium	1,2,3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lebo-1	Lebo is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Lebo-2	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited public offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Lebo-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lebo-4	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	Low	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going
Lebo-5	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost to local governments.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Lebo-6	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	M	3,4	$250	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lebo-7	Coordinate County and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Local, State, Federal	12/31/2019	On-going
Lebo-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	Medium	1,2,3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
`LeRoy-1	LeRoy is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
LeRoy-2	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited public offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
LeRoy-3	Annually host a public “hazards exhibition” in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LeRoy-4	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	Low	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going
LeRoy-5	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost to local governments.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
LeRoy-6	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	M	3,4	Staff Time	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LeRoy-7	Coordinate County and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Local, State, Federal	12/31/2019	On-going
LeRoy-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	Medium	1,2,3,4	Staff Time	Local	12/31/2019	On-going
LeRoy-9	Seek funding for the construction of a community tornado shelter for LeRoy's citizens. Many homes do not have basements or other areas for refuge from storms. Tornado shelters strategically positioned throughout the city would be beneficial in protecting people. Establishment of shelters near densely populated areas such as group housing, mobile home parks, and senior citizens complexes should be considered.	Tornado	City Manager	Medium	1,2	$350,000	Local,, State, FEMA	Completed 2013	Completed with USDA, CDBG & private grant funds.

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
New Strawn-1	New Strawn is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
New Strawn-2	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited public offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
New Strawn-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
New Strawn-4	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	Low	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going
New Strawn-5	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
New Strawn-6	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	M	3,4	Staff Time	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
New Strawn-7	Coordinate County and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Local, State, Federal	12/31/2019	On-going
New Strawn-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	Medium	1,2,3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Waverly-1	Waverly is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Waverly-2	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited public offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost to local governments.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Waverly-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local	Continuous	On-going, Continuous
Waverly-4	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	Low	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going
Waverly-5	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Waverly-6	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	M	3,4	$250	Local, State, Federal	12/31/2019	On-going
Waverly-7	Coordinate County and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Local, State, Federal	12/31/2019	On-going
Waverly-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	Medium	1,2,3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Waverly-9	Complete the city's zoning regulations update. Waverly has already begun to update their zoning regulations first adopted in 1975. The city should incorporate mitigation strategies in the updated zoning regulations considering natural hazard vulnerabilities and the city's comprehensive land plan.	All Hazards	City Manager	High	1,2,4	Staff Time	Local, State, Federal	Completed 2011	Completed
USD243-1	Develop and fund mitigation projects for the construction of tornado safe rooms for USD 243 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado, Windstorm	Superintendent	Medium	1,2	$1,000,000	FEMA	12/31/2019	On-going
USD244-1	Develop and fund mitigation projects for the construction of tornado safe rooms for USD 244 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado, Windstorm	Superintendent	Medium	1,2	$1,000,000	FEMA	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD245-1	Develop and fund mitigation projects for the construction of tornado safe rooms for USD 245 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado, Windstorm	Superintendent	Medium	1,2	$1,000,000	FEMA	12/31/2019	On-going

5.6.3 FRANKLIN COUNTY

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franklin County-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	County Planner	High	1,2,3,4	Staff Time	Local, State	Continuous	On-going, Continuous
Franklin County-2	Franklin County is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	Emergency Manager	High	1,2,3,4	Staff Time	State, FEMA	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franklin County-3	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Franklin County, a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado, Windstorm	Emergency Manager	Medium	1,2,4	Staff Time	Local, State	12/31/2019	On-going
Franklin County-4	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	Emergency Manager	High	3,4	$500	Local	Continuous	On-going, Continuous
Franklin County-5	Coordinate county and local government mitigation efforts with RECs and Utilities, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	Emergency Manager	High	4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franklin County-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	Emergency Manager	Medium	3,4	$1,000 per workshop	Local, State, Federal	Continuous	On-going, Continuous
Franklin County-7	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	Emergency Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Franklin County-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide informational brochures and pamphlets on safe driving measures at no cost.	Winter Storm	Emergency Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franklin County-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	Emergency Manager	High	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Franklin County-10	Identify the most at-risk vital / critical facilities, and evaluate the potential mitigation techniques for protecting each facility in a cost effective manner. Also seek funding sources options for generators and/or transfer switches to maintain power in the event of severe weather events. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	Terrorism/ Agri-Terrorism, Civil Disorder	Emergency Manager	Medium	1,2,4	Staff Time	Local, State	Partially completed.	On-going, Critical facilities portion has been identified
Franklin County-11	Conduct inventory/survey for the county and incorporated cities emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources.	All Hazards	-	-	-	-	-	-	Deleted

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franklin County-12	Develop cross-departmental information collection capabilities, and incorporate cadastral (building/parcel) data utilizing a GIS for purposes of conducting more detailed hazard risk assessments and for tracking permitting / land use patterns, buildings and infrastructure replacement costs, and overall structural accounting for the jurisdiction. A comprehensive catalog of data can greatly enhance the jurisdiction's technical capability to manage, analyze and display spatially referenced data. Most jurisdictions have basic GIS capabilities. Further development of this capability for functional use across all city and county departments will enhance the overall capabilities to document building/structure cost data, and further hazard mitigation goals in developing cadastral data for the cities and county.	All Hazards	Emergency Manager	Medium	4	Staff Time	State	12/31/2019	On-going
Franklin County-13	Develop a program to acquire and preserve parcels of land subject to repetitive flooding from willing and voluntary property owners. Land acquisition is an effective mitigation technique to permanently eliminate the potential for damages from future flood events. Franklin County will apply for grant funding to acquire flood-prone parcels of land as acquisition data becomes available.	Flood	Emergency Manager	High	1,2	Staff Time	Local, KDEM, FEMA	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franklin County-14	Contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	Emergency Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Franklin County-15	Advertise and promote the availability of flood insurance to county property owners. Franklin County, including the cities of Lane, Ottawa, Rantoul, and Wellsville, participate in the NFIP. There are currently 31 policies in effect, with a total coverage amount of $3,137,200. Since the jurisdiction joined the program, there have been 2 claims paid for a total loss paid amount of $1,558. (Source: FEMA, 2004). NFIP flood insurance policies protect property owners by offering affordable rates for protecting both structures and contents.	Flood	Emergency Manager	High	3,4	$500	Local	Continuous	On-going, Continuous
Franklin County-16	Regularly calculate and document the amount of flood prone property that is preserved as open space to reduce flood insurance burden to the county. CRS credit is given for areas that are permanently preserved as open space. Although credit is not given for federal lands, The jurisdiction maintains floodplain areas preserved as open space through land acquisition projects (i.e., HMGP), which protect parcels from development through deed restrictions.	Flood	County Planner	High	1,2,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franklin County-17	Identify flash-flood prone areas to consider flood reduction measures to city/county planners. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Flood	County Planner	High	1,2,4	Staff Time	Local	12/31/2019	On-going
Franklin County-18	Research, design, and recommend an appropriate stream buffer ordinance to protect water resources and to limit future flood damages. Riparian buffers serve as boundaries between waterways and existing development and help protect resources by filtering pollutants, providing flood control, alleviating streambank erosion, mitigating stream warming, and providing room for lateral movement of the stream channel. Buffer widths can vary greatly depending upon stream channel size and the intended purpose, but 50-100 feet is generally considered to be sufficient for bank stabilization and sediment control and 200 feet for flood control. Special consideration should be given to exempting agricultural operations from buffer regulations.	Flood	County Planner	High	1,2	$20,000	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franklin County-19	Research and develop an ordinance/resolution to require the jurisdiction's Manufactured Housing and Travel Trailer Park Ordinance to install tornado shelters for major manufactured and/or mobile home parks. Mobile homes are particularly vulnerable to damage from high winds. Residents, even those who live in mobile homes with tie-downs, should seek safe shelter when a tornado threatens. Tornado shelters should be constructed in major mobile home parks to ensure a safe place for residents to go during a tornado event. The shelter structure, which should be designed to withstand a minimum of 120mph winds, could easily serve an alternate purpose such as a community center, laundry facility, etc.	Tornado, Windstorm	County Planner	High	1,2	Staff Time	Local	12/31/2019	On-going
Franklin County-20	Develop and implement a wildfire prevention/education program. In addition to providing education to the general public, the program should also target children, fire and equipment users, builders and developers, and homeowners. The jurisdiction has burn-ban resolutions which require special permission to conduct open burning operations. In periods of drought or extreme weather conditions a burn ban may be declared. When a ban is declared all radio stations, TV stations, and newspapers in the area are notified as well as City Managers, fire chiefs, etc. To better educate the public at large, The jurisdiction should expand the existing fire protection program to include wildfire workshops to all age groups and commercial operations.	Wildfire	Emergency Manager	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franklin County-21	Examine the current agreements within the county and assess the need to expand or update cooperative agreements for firefighting resources. Include agreements with local, state and federal agencies. Cooperative agreements provide the support needed in times of emergency, and are an important element of planning, with the long-range goal of reducing damage to structures and systems within the jurisdiction.	Wildfire	Emergency Manager	High	4	Staff Time	Local	12/31/2019	On-going, 2013 the MOUs were updated.
Franklin County-22	Evaluate the firefighting water supply resources within the County. This should include both fixed and mobile supply issues. Lack of sufficient water supply makes it difficult for firefighters to suppress fires. Whenever possible, increasing access to water along water service delivery lines (wet and dry hydrants) would provide additional resources for emergency responders.	Wildfire	Emergency Manager	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going, fire department received training on hauling and providing water supply.

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franklin County-23	Distribute assessment report examples provided by the Kansas Forest Service to applicable parties to develop an understanding of the Community Wildfire Protection Plan (CWPP). Recommend joining the program and completing an assessment report for approval. The probability of Wild/Rangeland fire in Franklin County is relatively high. Based on statistical data, the likelihood of future events is estimated to remain the same as currently calculated. Franklin County can expect an average of 6.86 significant wildfires per year that damage or destroy a total of 3,592 acres. The average burned is approximately 599 acres, with an average dollar loss of $2,768. The Kansas Forest Service staff would provide assistance to interested communities in the form of a Community Wildfire Hazard Assessment Report and some mitigation action items.	Wildfire	Emergency Manager	High	1,2,3,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Franklin County-24	Appoint a rural fire committee to schedule meetings with the Kansas Forest Service to map suspected hazardous wildfire areas in the county for potential participation in the CWPP. In order for a community to take advantage of the Community-based Healthy Forests Restoration Act (HFRA), 2003, a community must develop a CWPP. To develop qualifications the community must identify and map potential hazard areas as an initial step towards participation in the program.	Wildfire	Emergency Manager	Medium	4	Staff Time	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franlin-25	Incorporate wildfire maps, develop actions and projects for wildfire prevention, and complete an assessment report to meet CWPP requirements for submittal to the Kansas Forest Service. The minimum requirements participation in the CWPP as described in the HFRA are: (1) Collaboration: A CWPP must be collaboratively developed by local and state government representatives, in consultation with federal agencies and other interested parties. (2) Prioritized Fuel Reduction: A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure. (3) Treatment of Structural Ignitability: A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.	Wildfire	Emergency Manager	Medium	1,2,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Franklin County-26	In cooperation with the City of Ottawa, implement a study to determine the residual flood risk in levee-protected areas. Levee owners or communities have the responsibility to provide documentation that a levee meets the requirements of Title 44 of the CFR, Section 65.10 of the NFIP regulations (44CFR Section 65.10), as part of a study/mapping project. Without the required documentation necessary to comply with 44 CFR Section 65.10, the area behind the levee will be re-delineated and mapped as SFHA on the DFIRM. Procedure Memorandum No. 34 allows for the issuance of a deadline to the community for submitting the required documents.	Flood	Floodplain Manager	Medium	1,2,3,4	Staff Time	Local	12/31/2019	On-going, scheduled to be completed by spring 2014.

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Franklin-27	The Franklin County RWD No. 6 will continue to assess the impact of natural hazards on water distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure. Also seek funding sources options for generators and/or transfer switches to maintain power in the event of severe weather events. The Franklin County RWD No. 6 provides potable water to their customers located in the cities of Rantoul and Lane. Maintaining distribution capabilities of potable water is the jurisdiction's top priority.	All Hazards	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going, Continuous
Franklin-28	The Franklin County RWD No. 2 will seek funding sources to mitigate damage to critical infrastructure, including water line enhancements and the replacement of water pumps. Also seek funding sources options for generators and/or transfer switches to maintain power in the event of severe weather events. The Franklin County RWD No. 2 provides potable water to its assigned area southeast of the City of Ottawa. Maintaining distribution capabilities of potable water is the jurisdiction's top priority.	All Hazards	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going, Continuous
Lane-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	County Planner	High	1,2,3,4	Staff Time	Local, State	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lane-2	The city of Lane is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA	Continuous	On-going, Continuous
Lane-3	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Franklin County, a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado, Windstorm	City Manager	Medium	1,2,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lane-4	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff time	Local	Continuous	On-going, Continuous
Lane-5	Coordinate county and local government mitigation efforts with RECs and Utilities, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Local	12/31/2019	On-going
Lane-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$750 per workshop	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lane-7	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Lane-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide informational brochures and pamphlets on safe driving measures at no cost.	Winter Storm	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Lane-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	High	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lane-10	Identify the most at-risk vital / critical facilities, and evaluate the potential mitigation techniques for protecting each facility in a cost effective manner. Also seek funding sources options for generators and/or transfer switches to maintain power in the event of severe weather events. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	$40,000	Local, State	12/31/2019	On-going
Lane-11	Conduct inventory/survey for the county and incorporated cities emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to ensure the counties and cities current emergency services are adequate to protect public health and safety from anticipated hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations for emergency service enhancements.	All Hazards	City Manager	Medium	4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lane-12	Develop cross-departmental information collection capabilities, and incorporate cadastral data utilizing a GIS for purposes of conducting more detailed hazard risk assessments and for tracking permitting / land use patterns, buildings and infrastructure replacement costs, and overall structural accounting for the jurisdiction. A comprehensive catalog of data can greatly enhance the technical capability to manage, analyze and display spatially referenced data. Most jurisdictions have basic GIS capabilities. Further development of this capability for functional use across all city and county departments will enhance the overall capabilities to document building/structure cost data, and further hazard mitigation goals in developing cadastral data for the cities and county.	All Hazards	City Manager	Medium	4	Staff Time	State	12/31/2019	On-going
Lane-13	Appoint a planning committee to assess flood prone areas and recommend flood reduction measures to city officials. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	High	1,2,4	Staff Time	Local	12/31/2019	On-going
Lane-14	Investigate alternative methods of reducing flood impact to the generator located at the City of Lane sewage lift station, or conduct a study to assess the possible relocation of the lift station due to flooding issues. The City of Lane lift station has historically experienced loss of power due to the on-site generator being impacted by flooding at the sewage lift station.	Flood	City Manager	Medium	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lane-15	Conduct a study to determine the efficacy of the existing warning siren system within the City of Lane, and maintain existing sirens or install new sirens as necessary to ensure area coverage. Reduce the possibility of damages and loss of life to the citizens by upgrading the existing early warning system and maintaining coverage areas for the City of Lane.	All Hazards	City Manager	Medium	1,2	$25,000	Local	12/31/2019	On-going
Lane-16	Conduct a study to determine the efficacy of the existing generators located within Critical Facility structures and consider funding options for any Critical Facilities that may require generators and/or transfer switches to maintain power in the event of severe weather events. Ensure that Critical Facilities located within the City of Lane maintain power during severe weather events.	Utility/ Infrastructure Failure	City Manager	Medium	1,2,4	$40,000	Local, State, Federal	12/31/2019	On-going
Ottawa-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	City Planner/Flood Plain Manager	High	1,2,3,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Ottawa-2	The city of Ottawa is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Planner/Flood plain Manager	High	1,2,3,4	Staff Time	State, FEMA	Continuous	On-going, Continuous
Ottawa-3	Prepare and adopt an Outdoor Warning Sirens Plan for the city, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Franklin County, a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado, Windstorm	City Director of Utilities	Medium	1,2,4	$65,000	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Ottawa-4	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Ottawa-5	Coordinate local government mitigation efforts to encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Director of Utilities	High	4	Staff Time	Local	12/31/2019	On-going
Ottawa-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Fire Police and Planning Departments	Medium	3,4	$500 per workshop	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Ottawa-7	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Building Inspector	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Ottawa-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide informational brochures and pamphlets on safe driving measures at no cost.	Winter Storm	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Ottawa-9	Promote and educate the public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues.	Terrorism/ Agri-Terrorism, Civil Disorder	-	-	-	-	-	-	Deleted
Ottawa-10	Identify the most at-risk vital / critical facilities, and evaluate the potential mitigation techniques for protecting each facility in a cost effective manner. Also seek funding sources options for generators and/or transfer switches to maintain power in the event of severe weather events. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must be completed. An inventory/ database on critical facilities should be created and maintained by the county and shared with the KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Fire Department	Medium	1,2,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Ottawa-11	Conduct inventory/survey for the county and incorporated cities emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to ensure the counties and cities current emergency services are adequate to protect public health and safety from anticipated hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations for emergency service enhancements.	All Hazards	Emergency Operations Manager	Medium	4	Staff Time	Local, State	12/31/2019	On-going
Ottawa-12	Develop cross-departmental information collection capabilities, and incorporate cadastral (building/parcel) data utilizing a GIS for purposes of conducting more detailed hazard risk assessments and for tracking permitting / land use patterns, buildings and infrastructure replacement costs, and overall structural accounting for the jurisdiction. A comprehensive catalog of data can greatly enhance the jurisdiction's technical capability to manage, analyze and display spatially referenced data. Most jurisdictions have basic GIS capabilities. Further development of this capability for functional use across all city and county departments will enhance the overall capabilities to document building/structure cost data, and further hazard mitigation goals in developing cadastral data for the cities and county.	All Hazards	City Manager	Medium	4	Staff Time	State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Ottawa-13	Determine the residual flood risk in levee-protected areas. Levee owners or communities have the responsibility to provide documentation that a levee meets the requirements of Title 44 of the CFR, Section 65.10 of the NFIP regulations (44CFR Section 65.10), as part of a study/mapping project. Without the required documentation necessary to comply with 44 CFR Section 65.10, the area behind the levee will be re-delineated and mapped as SFHA on the DFIRM. Procedure Memorandum No. 34 allows for the issuance of a deadline to the community for submitting the required documents.	Flood	Floodplain Manager	High	1,2,3,4	Staff Time	Local	12/31/2019	On-going
Ottawa-14	Develop a levee failure evacuation plan for the City of Ottawa, work closely with Franklin County Emergency Management to incorporate the emergency plan into the Franklin County LEOP when complete. The City of Ottawa has a levee system that was constructed by the USACE to protect the city from flood waters along the Marais des Cygnes river, and is currently owned by the City of Ottawa, which should be included in emergency response planning.	Dam and Levee Failure	City Planner/Flood plain Manager	High	1,2,3,4	Staff Time	Local	12/31/2019	Completed
Ottawa-15	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Planner	High	1,2	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Ottawa-16	The City of Ottawa will continue to operate and maintain their levee system in accordance with the provisional PM 43 certification requirements as approved by FEMA. A levee system is located in the City of Ottawa, due to the presence of the Marais des Cygnes River that runs east-west through the city. The levee is owned by the City of Ottawa, and was built by the City of Ottawa and the Corps of Engineers in 1960. The levee is inspected annually, is identified on FEMA Flood Insurance Rate Maps, and is currently provisionally accredited by FEMA. Review of the FIRM map for the City of Ottawa, dated 1984, indicates that the areas of the City of Ottawa that are located behind the levee system are designated as being located in Zone X-500, which is defined as "an area inundated by 500-year flooding; an area inundated by 100-year flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile; or an area protected by levees from 100-year flooding".	Dam and Levee Failure	Public Works	High	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going
Ottawa-17	Minimize flood damage to existing development by maximizing the effectiveness of the storm sewer infrastructure. Implement a routine maintenance schedule for community storm sewers, drainage channels, and detention facilities.	Flood	Public Works	Medium	1	Unknown	Local	Continuous	On-going, Continuous
Ottawa-18	Seek funding to retain an engineer to design a community tornado shelter and apply for grant funding for construction.	Tornado	-	-	-	-	-	-	Deleted

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Ottawa-19	Conduct a study to determine the efficacy of the existing warning siren system within the City of Ottawa, and maintain existing sirens or install new sirens as necessary to ensure area coverage.	Tornado, Windstorm	-	-	-	-	-	-	Deleted
Ottawa-20	Conduct a study to determine the efficacy of the existing generators located within Critical Facility structures and consider funding options for any Critical Facilities that may require generators and/or transfer switches to maintain power in the event of severe weather events. Ensure that Critical Facilities located within the City of Ottawa maintain power during severe weather events.	Utility / Infrastructure Failure	City Utility and Public Works Departments	Medium	1,2,4	$30,000	Local, State, Federal	12/31/2019	On-going
Ottawa-21	Review and update existing zoning and subdivision regulations and other storm sewer ordinances to ensure regulations and standards effectively channel runoff to the floodway. Regulate the location of proposed development using zoning and permitting ordinances, as well as storm water management plans, to ensure that new construction and development does not contribute to increased flood levels.	Flood	City Planner	High	1,2,4	Staff Time	Local	On-going	Completed

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Ottawa-22	Incorporate the inspection and management of trees that may pose a threat to the city's routine maintenance system process. A significant amount of property damage during weather events results from tree failure. Trees that fall into utility lines have additional serious consequences such as causing power outages, surges, fires and other damage. The City of Ottawa's ability to recognize and prevent hazardous tree conditions (through inspection, pruning or removal) is the best defense against problems and costly damages resulting from tree failure. Specifically, trees located on City property, which pose immediate threats to property, utility lines and other critical facilities should be addressed.	Utility / Infrastructure Failure	City Utility Department	Medium	1,2	$8,000	Local	Continuous	On-going, Continuous
Ottawa-23	Acquisition of flood prone properties along Rock Creek. Acquisition and conservation of flood prone areas along creek will protect existing homes and development.	Flood	City Planner/Flood plain Manager	Medium	1,2,4	75,000	Unknown	10 years	New
Pomona-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	County Planner	High	1,2,3,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pomona-2	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Franklin County, a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado, Windstorm	City Manager	Medium	1,2,4	$75,000	Local	12/31/2019	On-going
Pomona-3	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Pomona-4	Coordinate county and local government mitigation efforts with RECs and Utilities, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that reduce exposure to loss of electrical power are beneficial to all within the jurisdiction. Power loss during extreme temperatures increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pomona-5	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local, State, Federal	Continuous	On-going, Continuous
Pomona-6	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Pomona-7	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide informational brochures and pamphlets on safe driving measures at no cost..	Winter Storm	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pomona-8	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	High	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Pomona-9	Identify the most at-risk vital / critical facilities, and evaluate the potential mitigation techniques for protecting each facility in a cost effective manner. Also seek funding sources options for generators and/or transfer switches to maintain power in the event of severe weather events. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	$30,000	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pomona-10	Conduct inventory/survey for the county and incorporated cities emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to ensure the counties and cities current emergency services are adequate to protect public health and safety from anticipated hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations for emergency service enhancements.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local, State	12/31/2019	On-going
Pomona-11	Develop cross-departmental information collection capabilities, and incorporate cadastral (building/parcel) data utilizing a GIS for purposes of conducting more detailed hazard risk assessments and for tracking permitting / land use patterns, buildings and infrastructure replacement costs, and overall structural accounting for the jurisdiction. A comprehensive catalog of data can greatly enhance the jurisdiction's technical capability to manage, analyze and display spatially referenced data. Most jurisdictions have basic GIS capabilities. Further development of this capability for functional use across all city and county departments will enhance the overall capabilities to document building/structure cost data, and further hazard mitigation goals in developing cadastral data for the cities and county.	All Hazards	City Manager	Medium	4	Staff Time	State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pomona-12	Incorporate the inspection and management of trees that may pose a threat to the county's routine maintenance system process. A significant amount of property damage during weather events results from tree failure. Trees that fall into utility lines have additional serious consequences such as causing power outages, surges, fires and other damage. The City of Pomona's ability to recognize and prevent hazardous tree conditions (through inspection, pruning or removal) is the best defense against problems and costly damages resulting from tree failure. Specifically, trees located on City property, which pose immediate threats to property, utility lines and other critical facilities should be addressed.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	$8,000	Local	Continuous	On-going, Continuous
Pomona-13	Conduct a study to determine the efficacy of the existing generators located within Critical Facility structures and consider funding options for any Critical Facilities that may require generators and/or transfer switches to maintain power in the event of severe weather events. Ensure that Critical Facilities located within the City of Pomona maintain power during severe weather events.	Utility/ Infrastructure Failure	City Manager	Medium	1,2,4	$40,000	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pomona-14	Promote the use of NOAA All Hazards Weather Radio for the entire community of Pomona. Seek funding to subsidize purchase and distribution of weather radios. The NOAA All Hazards Weather Radio with S.A.M.E. technology is a nationwide network that broadcasts Weather Service Warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Promoting the use of the system in Pomona provides the opportunity to receive advanced warning and take measures to avoid or decrease the impact from various weather related hazards.	All Hazards	City Manager	Medium	1,2,3,4	$15,000	Local, State, Federal	Continuous	On-going, Continuous
Pomona-15	Conduct a study to determine the efficacy of the existing warning siren system within the City of Pomona, and maintain existing sirens or install new sirens as necessary to ensure area coverage. Reduce the possibility of damages and loss of life to the citizens by upgrading the existing early warning system and maintaining coverage areas for the City of Pomona.	Tornado, Windstorm	City Manager	Medium	1,2,4	$30,000	Local	12/31/2019	On-going
Pomona-16	The City of Pomona will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed or cancelled for repeat losses.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pomona-17	Seek funding to complete a stormwater drainage study/plan for the City of Pomona that will lead to a stormwater management ordinance. The City of Pomona has identified a need for a stormwater drainage study/plan that will identify drainage problems and address solutions through detention, retention, and drainage system maintenance, among other specific mitigation measures.	Flood	City Manager	Medium	1,2	Unknown	Local, State, Federal	12/31/2019	On-going
Pomona-18	Research, develop, and recommend an ordinance/resolution to require installation of tornado shelters for major manufactured and/or mobile home parks with more than 10 mobile home spaces. Mobile homes are particularly vulnerable to damage from high winds. Residents, even those who live in mobile homes with tie-downs, should seek safe shelter when a tornado threatens. Tornado shelters should be constructed in major mobile home parks to ensure a safe place for residents to go during a tornado event. The shelter structure, which should be designed to withstand a minimum of 120mph winds, could easily serve an alternate purpose such as a community center, laundry facility, etc.	Tornado, Windstorm	City Manager	High	1,2,4	$500,000	Local	12/31/2019	On-going
Pomona-19	Seek funding to retain an engineer to design a safe room within the Pomona City Hall and apply for grant funding for construction. A lack of tornado shelters poses a serious risk to the community, including City of Pomona employees. The City of Pomona has identified a need for a safe room within the existing Pomona City Hall.	Tornado	City Manager	Medium	1,2	$25,000	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Princeton-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	County Planner	High	1,2,3,4	Staff Time	Local, State	12/31/2019	On-going
Princeton-2	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Franklin County, a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado, Windstorm	City Manager	Medium	1,2,4	$45,000	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Princeton-3	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Princeton-4	Coordinate county and local government mitigation efforts with RECs and Utilities, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Local	12/31/2019	On-going
Princeton-5	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Princeton-6	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Princeton-7	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide informational brochures and pamphlets on safe driving measures at no cost.	Winter Storm	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Princeton-8	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	High	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Princeton-9	Create additional acceptable community storm shelters for residents. We have trailer park and some homes without basements. Would like to construct a new City Hall with a storm shelter/safe room.	Tornado, Windstorm	City Clerk	High	1,2	$1,000,000	Unknown	year 2018	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Princeton-10	Provide educational materials about natural hazards and risks in city utility bills. This will keep city residents informed and educated. Have fliers printed and put in utility bills – possible schedule educational meet up for city residents.	All Hazards	City Clerk	High	3,4	Staff Time	Unknown	2015	New
Princeton-11	Identify the most at-risk vital / critical facilities, and evaluate the potential mitigation techniques for protecting each facility in a cost effective manner. Also seek funding sources options for generators and/or transfer switches to maintain power in the event of severe weather events. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	Unknown	Local, State	12/31/2019	On-going
Princeton-12	Conduct inventory/survey for the county and incorporated cities emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to ensure the counties and cities current emergency services are adequate to protect public health and safety from anticipated hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations for emergency service enhancements.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Princeton-13	Develop cross-departmental information collection capabilities, and incorporate cadastral (building/parcel) data utilizing a GIS for purposes of conducting more detailed hazard risk assessments and for tracking permitting / land use patterns, buildings and infrastructure replacement costs, and overall structural accounting for the jurisdiction. A comprehensive catalog of data can greatly enhance the jurisdiction's technical capability to manage, analyze and display spatially referenced data. Most jurisdictions have basic GIS capabilities. Further development of this capability for functional use across all city and county departments will enhance the overall capabilities to document building/structure cost data, and further hazard mitigation goals in developing cadastral data for the cities and county.	All Hazards	City Manager	Medium	4	Staff Time	State	12/31/2019	On-going
Princeton-14	Conduct a study to determine the efficiency of the existing warning siren system within the City of Princeton, and maintain existing sirens or install new sirens as necessary to ensure area coverage. Reduce the possibility of damages and loss of life to the citizens by upgrading the existing early warning system and maintaining coverage areas for the City of Princeton.	Tornado, Windstorm	City Manager	Medium	1,2,4	$30,000	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Princeton-15	Conduct a study to determine the efficacy of the existing generators located within Critical Facility structures and consider funding options for any Critical Facilities that may require generators and/or transfer switches to maintain power in the event of severe weather events. Ensure that Critical Facilities located within the City maintain power during severe weather events.	Utility/ Infrastructure Failure	City Manager	Medium	1,2,4	$15,000	Local, State, Federal	12/31/2019	On-going
Princeton-16	Conduct a study to assess the periodic flooding of the City of Princeton sewage lagoons, which are located outside of the city limits in unincorporated Franklin County. Franklin County reported that the City of Princeton sewage lagoons, which are located in unincorporated Franklin County, have periodically experienced flooding events.	Flood	City Manager	Medium	1,2,3,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Rantoul-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	County Planner	High	1,2,3,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Rantoul-2	The city of Rantoul is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA	Continuous	On-going, Continuous
Rantoul-3	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Franklin County, a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado, Windstorm	City Manager	Medium	1,2,4	$45,000	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Rantoul-4	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Rantoul-5	Coordinate county and local government mitigation efforts with RECs and Utilities, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Local	12/31/2019	On-going
Rantoul-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Rantoul-7	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Rantoul-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide informational brochures and pamphlets on safe driving measures at no cost.	Winter Storm	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Rantoul-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	High	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Rantoul-10	Identify the most at-risk vital / critical facilities, and evaluate the potential mitigation techniques for protecting each facility in a cost effective manner. Also seek funding sources options for generators and/or transfer switches to maintain power in the event of severe weather events. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	$35,000	Local, State	12/31/2019	**Delete**
Rantoul-11	Conduct inventory/survey for the county and incorporated cities emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to ensure the counties and cities current emergency services are adequate to protect public health and safety from anticipated hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations for emergency service enhancements.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Rantoul-12	Develop cross-departmental information collection capabilities, and incorporate cadastral (building/parcel) data utilizing a GIS for purposes of conducting more detailed hazard risk assessments and for tracking permitting / land use patterns, buildings and infrastructure replacement costs, and overall structural accounting for the jurisdiction. A comprehensive catalog of data can greatly enhance the jurisdiction's technical capability to manage, analyze and display spatially referenced data. Most jurisdictions have basic GIS capabilities. Further development of this capability for functional use across all city and county departments will enhance the overall capabilities to document building/structure cost data, and further hazard mitigation goals in developing cadastral data for the cities and county.	All Hazards	City Manager	Medium	4	Staff Time	State	12/31/2019	On-going
Rantoul-13	Assess flood prone areas and recommend flood reduction measures to city officials. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Rantoul-14	Conduct a study to determine the efficacy of the existing warning siren system within the City of Rantoul, and maintain existing sirens or install new sirens as necessary to ensure area coverage. Reduce the possibility of damages and loss of life to the citizens by upgrading the existing early warning system and maintaining coverage areas for the City.	Tornado, Windstorm	City Manager	Medium	1,2,4	$30,000	Local	12/31/2019	On-going
Rantoul-15	Conduct a study to determine the efficacy of the existing generators located within Critical Facility structures and consider funding options for any Critical Facilities that may require generators and/or transfer switches to maintain power in the event of severe weather events. Ensure that Critical Facilities located within the City of Rantoul maintain power during severe weather events.	Utility/ Infrastructure Failure	City Manager	Medium	1,2,4	$30,000	Local, State, Federal	12/31/2019	On-going
Richmond-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	County Planner	High	1,2,3,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Richmond-2	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Franklin County, a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado, Windstorm	City Manager	Medium	1,2,4	$45,000	Local	12/31/2019	On-going
Richmond-3	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Richmond-4	Coordinate county and local government mitigation efforts with RECs and Utilities, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Richmond-5	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local, State, Federal	Continuous	On-going, Continuous
Richmond-6	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Richmond-7	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide informational brochures and pamphlets on safe driving measures at no cost.	Winter Storm	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Richmond-8	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/Agri-terrorism, Civil Disorder	City Manager	High	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Richmond-9	Identify the most at-risk vital / critical facilities, and evaluate the potential mitigation techniques for protecting each facility in a cost effective manner. Also seek funding sources options for generators and/or transfer switches to maintain power in the event of severe weather events. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	$30,000	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Richmond-10	Conduct inventory/survey for the county and incorporated cities emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to ensure the counties and cities current emergency services are adequate to protect public health and safety from anticipated hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations for emergency service enhancements.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local, State	12/31/2019	On-going
Richmond-11	Develop cross-departmental information collection capabilities, and incorporate cadastral data utilizing a GIS for purposes of conducting more detailed hazard risk assessments and for tracking permitting / land use patterns, buildings and infrastructure replacement costs, and overall structural accounting for the jurisdiction. Further development of this capability for functional use across all city and county departments will enhance the overall capabilities to document building/structure cost data, and further hazard mitigation goals in developing cadastral data for the cities and county.	All Hazards	City Manager	Medium	4	Staff Time	State	12/31/2019	On-going
Richmond-12	Conduct a study to determine the efficacy of the existing warning siren system within the City of Richmond, and maintain existing sirens or install new sirens as necessary to ensure area coverage. Reduce the possibility of damages and loss of life to the citizens by upgrading the existing early warning system and maintaining coverage areas for the City.	Tornado, Windstorm	City Manager	Medium	1,2,4	$45,000	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Richmond-13	Conduct a study to determine the efficacy of the existing generators located within Critical Facility structures and consider funding options for any Critical Facilities that may require generators and/or transfer switches to maintain power in the event of severe weather events. Ensure that Critical Facilities located within the City of Richmond maintain power during severe weather events.	Utility/Infra-structure Failure	City Manager	Medium	1,2,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Wellsville-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	County Planner	High	1,2,3,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Wellsville-2	The city of Wellsville is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA	Continuous	On-going, Continuous
Wellsville-3	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Franklin County, a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado, Windstorm	City Manager	Medium	1,2,4	$65,000	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Wellsville-4	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Wellsville-5	Coordinate county and local government mitigation efforts with RECs and Utilities, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/Infra-structure Failure	City Manager	High	4	Staff Time	Local	12/31/2019	On-going
Wellsville-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Wellsville-7	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Wellsville-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide informational brochures and pamphlets on safe driving measures at no cost.	Winter Storm	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Wellsville-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	High	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Wellsville-10	Identify the most at-risk vital / critical facilities, and evaluate the potential mitigation techniques for protecting each facility in a cost effective manner. Also seek funding sources options for generators and/or transfer switches to maintain power in the event of severe weather events. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local, State	12/31/2019	On-going
Wellsville-11	Conduct inventory/survey for the county and incorporated cities emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to ensure the counties and cities current emergency services are adequate to protect public health and safety from anticipated hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations for emergency service enhancements.	All Hazards	City Manager	Medium	1,2,4	Staff time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Wellsville-12	Develop cross-departmental information collection capabilities, and incorporate cadastral (building/parcel) data utilizing a GIS for purposes of conducting more detailed hazard risk assessments and for tracking permitting / land use patterns, buildings and infrastructure replacement costs, and overall structural accounting for the jurisdiction. A comprehensive catalog of data can greatly enhance the jurisdiction's technical capability to manage, analyze and display spatially referenced data. Most jurisdictions have basic GIS capabilities. Further development of this capability for functional use across all city and county departments will enhance the overall capabilities to document building/structure cost data, and further hazard mitigation goals in developing cadastral data for the cities and county.	All Hazards	City Manager	Medium	4	Staff Time	State	12/31/2019	On-going
Wellsville-13	Evaluate, and seek funding for the construction of community storm shelters for the city.	Tornado, Windstorm	City Manager	High	1,2	$500 - $5,000,000	State, FEMA, Federal	3 - 5 years	New
Williamsburg-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Flood	County Planner	High	1,2,3,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Williamsburg-2	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Franklin County, a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado, Windstorm	City Manager	Medium	1,2,4	$30,000	Local	12/31/2019	On-going
Williamsburg-3	Collect educational materials on individual and family preparedness / mitigation measures for property owners, and display at both the library and routinely visited jurisdiction offices. FEMA, KDEM , the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Williamsburg-4	Coordinate county and local government mitigation efforts with RECs and Utilities, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Williamsburg-5	Encourage the construction of safe rooms and storm shelters in mobile home parks and public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Williamsburg-6	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	High	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Williamsburg-7	Identify the most at-risk vital / critical facilities, and evaluate the potential mitigation techniques for protecting each facility in a cost effective manner. Also seek funding sources options for generators and/or transfer switches to maintain power in the event of severe weather events. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local, State	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD287-1	Develop and fund mitigation projects for the construction of tornado safe rooms for Unified School District 287 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendent	Medium	1,2	$1,000,000	Local, State, Federal	12/31/2019	On-going
USD287-2	Obtain funding for the purchase and installation of backup power generators and/or transfer switches for the schools of USD 287. USD 287 has identified a need to quickly restore power in all of its schools in the event of a weather event and the subsequent loss of power.	Utility/ Infrastructure Failure	Superintendent	Medium	1,2	$45,000	Local, State, Federal	12/31/2019	On-going
USD288-1	Develop and fund mitigation projects for the construction of tornado safe rooms for Unified School District 288 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits. We will: 1. Review existing structures for compliance 2. Or, develop plan to upgrade existing bldgs. New rooms. 3. Research funding options 4. Execute plan	Tornado	District Emergency Coordinator	Medium	1,2	$45,000	Local, State, Federal	12/31/2020	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD288-2	Obtain funding for the purchase and installation of backup power generators and/or transfer switches for the schools of USD 288. USD 288 has identified a need to quickly restore power in all of its schools in the event of a weather event and the subsequent loss of power. We will: 1. Develop a list of required areas to receive backup power 2. Coordinate with electric company to determine size and cost 3. Develop funding 4. Execute plan	Utility/ Infrastructure Failure	District Emergency Coordinator	Medium	1,2	$45,000	Local, State, Federal	12/31/2018	On-going
USD288-3	School teachers frequently use the outdoor areas for additional instruction or athletic events. There is no outside communicator available. We will 1. Research outdoor warnings 2. Develop funding 3. Execute project	Tornado, Lightning, Windstorm	District Emergency Coordinator	Medium	1,2	$20,000	Unknown	year 2015	New
USD289-1	Backflow valves. Work with contractor to fix issues.	Utility/Infra-structure Failure	Head of Maintenance	High	1,2	$10,000	Unknown	8 months	New
USD289-2	Develop and fund mitigation projects for the construction of tornado safe rooms for Unified School District 289 schools.	-	-	-	-	-	-	-	Deleted
USD289-3	Obtain funding for the purchase and installation of backup power generators and/or transfer switches for the schools of USD 289.	-	-	-	-	-	-	-	Deleted
USD289-4	Evaluate buildings for safe areas. Determine if action is needed to keep our students safe. Get different experts to look at buildings and get ideas of what to do.	All Hazards	Superintendent	Medium	1,2,4	Staff time	Unknown	3 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD290-1	Develop and fund mitigation projects for the construction of tornado safe rooms for Unified School District 290 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendent	Medium	1,2	$1,000,000	Local, State, Federal	12/31/2019	On-going
USD290-2	Obtain funding for the purchase and installation of backup power generators and/or transfer switches for the schools of USD 290. USD 290 has identified a need to quickly restore power in all of its schools in the event of a weather event and the subsequent loss of power.	Utility/ Infrastructure Failure	Superintendent	Medium	1,2	$25,000	Local, State, Federal	12/31/2019	On-going
RWD6-1	RWD#6 in Franklin County provides potable water to their customers located in the cities of Rantoul and Lane. Maintaining distribution capabilities of potable water is the jurisdictions top priority. To be able to get funding to purchase generators and/or transfer switches to maintain power in the event of severe weather events.	Utility/ Infrastructure Failure	Manager	High	1,2	Unknown	Unknown	Continuous	New

5.6.4 LINN COUNTY

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-1	Linn County is committed to continued voluntary participation and compliance with the National Flood Insurance Program (NFIP). A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	Public Works Administrator	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
Linn County-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	Public Works Administrator	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year. Linn County, including the cities of Blue Mound, La Cygne, Mound City, Parker, and Pleasanton, participate in the NFIP. There are currently thirteen policies in effect, with a total coverage amount of $1,282,900. Since the jurisdiction joined the program, there have not been any claims paid for. (Source: FEMA, 2008). NFIP flood insurance policies protect property owners by offering affordable rates for protecting both structures and contents.	Flood	Public Works Administrator	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Linn County-4	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Linn county a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado	Emergency Management Coordinator	High	1,2,4	$45,000	Local, State, Federal	2018	On-going
Linn County-5	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited jurisdictional offices. FEMA, KDEM, NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	Emergency Management Coordinator	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-6	Identify the jurisdiction's most at-risk critical facilities, and evaluate potential mitigation techniques for protecting each facility to the maximum extent possible. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must still be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	Emergency Management Coordinator	Medium	1,2,4	Staff Time	Local	Continuous	On-going, Continuous
Linn County-7	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	Emergency Management Coordinator	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-8	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers, and senior care facilities and senior centers and communities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	Emergency Management Coordinator	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going
Linn County-9	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	Emergency Management Coordinator	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Linn County-10	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. An intentional introduction of a foreign animal disease would be devastating to the local economy as well as the rest of the state and country. The County formed a FAD Committee to address these concerns. Specific education programs should be developed in coordination with the Kansas Animal Health Department (KAH) to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat animal disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	Emergency Management Coordinator	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-11	Form a planning committee to develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams/levees in the jurisdiction. The county has 145 dams that are regulated by the KDA-DWR. Ten of these structures are classified as "High Hazard Class C" structures, and are owned and operated as follows: Pleasanton City Lake Dam/ The City of Pleasanton Williams Dam/ Gerald Williams (privately owned) LaCygne Lake Dam / Kansas City Power and Light Company Lake Estates Dam No. 2 / Lake Estates Inc. Dam No. 1 / Sugar Valley Property Owners Association Dam No. 2 / Sugar Valley Property Owners Association Dam No. 3 / Sugar Valley Property Owners Association Dam No. 4 / Linn Valley Lakes Critzer Dam and Reservoir / Marais Des Cygnes PWWSD No.13 Critzer Dam / Marais Des Cygnes PWWSD No. 13 Three Federal Reservoirs located in other counties can also can impact Linn County, and include Melvern, Pomona, and Hillsdale Reservoirs. The State evaluation of the dams is based on location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe, A dam's hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing for a potential emergency is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Dam and Levee Failure	Emergency Management Coordinator	High	1,2,4	Staff Time	Local	12/31/2018	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-12	Coordinate mitigation efforts with RECs; encourage the identification of hazards and vulnerabilities potentially affecting their infrastructure as well as viable mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	Emergency Management Coordinator	High	1,2,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-13	Heartland Rural Electric Cooperative requires upgrade and enhancement of existing power lines to protect infrastructure and future exposure to natural hazards. The majority of these lines were built 40 plus years ago. Most of the conductor is small in size with long spans between poles. This type of line design struggles with ice and wind. Now the age of the line, the storms the lines have endured, the remote areas they transverse and the need for reliable electricity. Collectively these issues will not allow us to supply electricity to the people of Linn County to today's needs. Replacement of (10) miles of #4HDC three-phase line between the Weber and Linn sub stations. This three-phase tie interconnects these two sub stations and also directly serves several critical loads in the area. This line does not have adequate capacity for back feed purposes in the event of emergencies. The aged #4HDC construction has sustained much damage over the years and is not built to current and acceptable standards. This line directly provides power to a large public wholesale water district main plant, which in turn supplies water to (11) other public water districts and municipalities in the region. This line also serves as the sole tie to the area's consolidated school district campus. In addition; the two sub stations provide power to (23) communications sites (incl. cell towers, state and local communications links, fiber-optics cites, phone equipment, etc.). The Weber substation provides power to (380) meters. The Linn substation provides power to (1390) meters which includes several lake residence communities that sponsor their own public buildings and services. Replacement of this line would significantly mitigate losses to damages and greatly enhance reliability in the surrounding area.	Utility/ Infrastructure Failure	Emergency Management Coordinator	High	1,2,4	520,000	FEMA	12/31/2012	Completed

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-14	Heartland Rural Electric Cooperative requires upgrade and enhancement of existing power lines to protect infrastructure and future exposure to natural hazards. Replacement of (3) miles of #6CWC single-phase line on the east feeder (P2-31) of the Linn substation. This portion of line directly feeds (40) meters which includes mainly residences, (2) cell towers and (1) water district service. This line traverses a river and timbered area of poor access. The aged #6CWC construction has sustained much damage over the years and was not built to current and acceptable standards. Replacement of this line would significantly mitigate losses to damage and greatly enhance reliability in the surrounding area.	Utility/ Infrastructure Failure	Emergency Management Coordinator / REC Director	High	1,2	$70,000	FEMA	Completed	Completed
Linn County-15	Heartland Rural Electric Cooperative requires upgrade and enhancement of existing power lines to protect infrastructure and future exposure to natural hazards. Replacement of (33) miles of CWC single-phase line of enhanced design. The (33) miles selected met several points of prioritization and evaluation and represent a small percentage of total CWC miles in the Heartland distribution system. Replacing the (33) miles would significantly mitigate losses due to damages and greatly enhance reliability in the surrounding areas. The aged CWC construction has sustained much damage over the years and was not built to current and acceptable standards. Nearly all of HREC's membership in the county would directly if not indirectly benefit from improved safety and improved reliability of such replacements.	Utility/ Infrastructure Failure	Emergency Management Coordinator / REC Director	High	1,2	$627,000	FEMA	2018	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-16	Heartland Rural Electric Cooperative requires upgrade and enhancement of existing power lines to protect infrastructure and future exposure to natural hazards. Replacement of (3) miles of three-phase line on the north feeder of the Linn substation with a three-phase line of enhanced design. This portion of line traverses a large river and timbered areas of poor access and has sustained much damage over the years.	Utility/ Infrastructure Failure	REC Director	High	1,2	200000	FEMA	Completed	Completed
Linn County-17	Develop a program to acquire and preserve parcels of land subject to repetitive flooding from willing and voluntary property owners. Land acquisition is an effective mitigation technique to permanently eliminate the potential for damages from future flood events. The County can apply for grant funding to acquire flood-prone parcels of land from voluntary and willing property owners.	Flood	Public Works Administrator	High	1,2	Unknown	Local, State, Federal	Continuous	On-going, Continuous
Linn County-18	Initiate a planning committee to identify flash-flood prone areas to consider flood reduction measures to planners. Detailed flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	Public Works Administrator	Medium	1,2,4	Staff time	Local	2018	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-19	Conduct an inventory/survey for the county's emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to verify the county's current emergency services are adequate to protect public health and safety from most probable hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations for emergency service enhancements.	All Hazards	Emergency Management Coordinator	Medium	1,2,4	Staff Time	Local, State	Continuous	On-going, Continuous
Linn County-20	Research and recommend an ordinance/resolution to require installation of tornado shelters for new major manufactured and/or mobile home parks with more than 30 mobile home spaces. Mobile homes are particularly vulnerable to damage from high winds. Residents, even those who live in mobile homes with tie-downs, should seek safe shelter when a tornado threatens. Tornado shelters should be constructed in major mobile home parks to ensure a safe place for residents to go during a tornado event. The shelter structure, which should be designed to withstand a minimum of 120mph winds, could easily serve an alternate purpose such as a community center, laundry facility, etc.	Tornado, Windstorm	Emergency Management Coordinator	Medium	1,2,4	Staff Time	Local, State, Federal	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-21	Develop cross-departmental information collection capabilities, and incorporate cadastral data utilizing a GIS for purposes of conducting more detailed hazard risk assessments and for tracking permitting / land use patterns, buildings and infrastructure replacement costs, and overall structural accounting for the county. A comprehensive catalog of data can greatly enhance the jurisdiction's technical capability to manage, analyze and display spatially referenced data. The jurisdiction has basic GIS capabilities available through the GIS / Mapping Department. Further development of this capability for functional use across all departments will enhance the jurisdiction's overall capabilities to document building/structure cost data, and further hazard mitigation goals in developing cadastral data for the county.	All Hazards	GIS Director	High	4	Staff Time	Local, State, Grants	Continuous	On-going, Continuous
Linn County-22	Develop and implement a wildfire prevention/education program. In addition to providing education to the general public, the program should also target children, fire and equipment users, builders and developers, and homeowners. The jurisdiction has a resolution that requires citizens to call and notify the Sherriff's Office before and after burning activities. To better educate the public at large, the jurisdiction should expand their existing fire protection program to include wildfire workshops to all age groups and commercial operations.	Wildfire	Emergency Management Coordinator	Medium	3,4	$500 per year	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-23	Examine the current agreements within the county and assess the need to expand or update cooperative agreements for firefighting resources, including existing auto aid agreements. Include agreements with local, state and federal agencies. Cooperative agreements provide the support needed in times of emergency, and are an important element of planning. Linn County's auto aid agreement between the municipal fire departments in the county will contribute to the long-range goal of reducing damage to structures and systems within the jurisdiction.	Wildfire	Emergency Management Coordinator	Medium	4	Staff Time	Local	Continuous	On-going, Continuous
Linn County-24	Create a working group to evaluate the firefighting water supply resources within the jurisdiction, including both fixed and mobile supply issues. Lack of sufficient water supply makes it difficult to suppress fires. Increasing access to water along water service delivery lines (wet and dry hydrants) would provide additional resources for emergency responders.	Wildfire	Emergency Management Coordinator	Medium	1,2,4	Staff Time	Local	12/31/2018	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Linn County-25	Linn County has many areas containing expansive soils that cause significant damage to facilities and infrastructure during times of excessive moisture or drought conditions. The solution to this problem is to conduct a study to determine what County structures are or may be damaged due to these expansive soils, determine (engineer) solutions or abatements for the damage and implement designed solutions to prevent future or further damage to County owned facilities and infrastructure.	Expansive Soils	Emergency Management Coordinator	Low	1,2	Staff Time	Unknown	Continuous	New
BlueMound-1	Blue Mound is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff time	State, FEMA, Grants	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
BlueMound-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
BlueMound-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
BlueMound-4	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Linn county a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado	City Manager	High	1,2,4	$60,000	Local, State, Federal	Completed	Completed
BlueMound-5	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited jurisdictional offices. FEMA, KDEM, NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
BlueMound-6	Identify the jurisdiction's most at-risk critical facilities, and evaluate potential mitigation techniques for protecting each facility to the maximum extent possible. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must still be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	Public Works Directo	Medium	1,2,4	Staff Time	Local	Continuous	On-going, Continuous
BlueMound-7	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
BlueMound-8	Encourage the construction of safe rooms and tornado shelters in critical facilities that are accessible to the community. Seek outside funding sources to implement the program. When severe weather threatens, individuals and families need protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado areas need structurally sound shelters and early alert systems. Blue Mound has targeted certain Church basements as possible locations for a city safe shelter.	Tornado	City Manager	High	1,2	$250,000	Local, State, FEMA	12/31/2019	On-going
BlueMound-9	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
BlueMound-10	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. An intentional introduction of a foreign animal disease would be devastating to the local economy as well as the rest of the state and country. The County formed a FAD Committee to address these concerns. Specific education programs should be developed in coordination with the Kansas Animal Health Department (KAH) to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat animal disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
BlueMound-11	Assist county in forming a planning committee to develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams/levees in the jurisdiction.	Dam and Levee Failure	City Manager	High	1,2,4	Staff Time	Local	12/31/2018	On-going
BlueMound-12	Incorporate the inspection and management of trees that may threaten infrastructure into the city's routine maintenance process. The jurisdiction's ability to recognize and prevent hazardous tree conditions through inspection, pruning or removal is the best defense against costly damages resulting from tree failure. Specifically, trees located on city property, which pose immediate threats to property, utility lines and critical facilities should be addressed.	All Hazards	City Manager	Medium	1,2	$8,000	Local	12/31/2019	On-going, Partially completed - on an as needed basis
BlueMound-13	Appoint a planning committee to assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
BlueMound-14	Periodically conduct inventory / survey for the city's emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment, or required resources, and also create a list of private resources in the event of an emergency. Seek funding for shortfalls after the completion of inventory analysis. Special attention should be given to updating the services and inventory with the most current technological innovations that are economically justifiable. Any identified needs or shortfalls should become documented and result in specific recommendations to the City Council for emergency service enhancements.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local	12/31/2018	On-going
BlueMound-15	Develop and fund mitigation projects for the installation of backup generators at the Senior Center to prevent loss of electrical power and services from severe weather events. Heavy snow and ice accumulation during winter storms, and torrential winds during thunderstorms often results in broken tree limbs that can tear down overhead power lines.	Utility/ Infrastructure Failure	City Manager	High	1,2	$30,000	Local, State, Federal	12/31/2019	On-going
BlueMound-16	Electric Power Lines. This is needed because the system is aging, and becoming susceptible to Ice storms and high wind events during storms. By updating the system with bigger and better equipment will help us withstand more weather events and will help cut down on some repairs.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	$500,00	Local, State, Federal	5 years	New
BlueMound-17	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment, as well as the possibility of enclosures (fencing, buildings, etc.) for distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	Unknown	Local, State, Federal	2019	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LaCynge-1	La Cygne is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
LaCynge-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
LaCynge-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
LaCynge-4	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited jurisdictional offices. FEMA, KDEM, NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost to local governments.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LaCynge-5	Identify the jurisdiction's most at-risk critical facilities, and evaluate potential mitigation techniques for protecting each facility to the maximum extent possible. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must still be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the Kansas Division of Emergency Management. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local	Continuous	On-going, Continuous
LaCynge-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LaCynge-7	Seek funding to conduct a study for the location, design, and construction of a community tornado shelter for La Cygne citizens. Many homes do not have basements or other areas for refuge from storms. Tornado shelters strategically positioned throughout the city would be beneficial in protecting people. Establishment of shelters near densely populated areas such as group housing, mobile home parks, and senior citizens complexes should be considered.	Tornado	Emergency Management Chair	Medium	1,2,4	900000	Local, State, Federal	2018	On-going
LaCynge-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
LaCynge-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. An intentional introduction of a foreign animal disease would be devastating to the local economy as well as the rest of the state and country. The County formed a FAD Committee to address these concerns. Specific education programs should be developed in coordination with the KAH to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat animal disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
LaCynge-10	Form a planning committee to develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams/levees in the jurisdiction.	Dam and Levee Failure	City Manager	High	1,2,4	Staff Time	Local	2018	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LaCynge-11	Promote the use of weather radios in commercial, city and residential buildings. Hail, high winds, and tornadoes can occur erratically and advanced warning to populations can allow for individuals and families to find shelter and seek safety before severe weather occurs. Weather radios can also help prevent property damage by advanced warning.	Tornado	Emergency Management Chair	High	1,2	15000	FEMA	2 years	On-going
LaCynge-12	Appoint a committee to conduct a security assessment survey for La Cygne's gas and water service supply system to evaluate potential terrorist and bio-terrorism exposure, and develop a plan to secure and protect the water supply. Seek funding to implement study results. Due to the size of the population served (estimated 5,000 individuals) La Cygne should survey and develop a security protection program for the gas and water supply and seek funding for hardening and protecting water resources for the county.	Terrorism/ Agri-Terrorism, Civil Disorder	Emergency Management Chair	Medium	1,2,4	5000	Local, State, Federal	3 years	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LaCynge-13	Appoint a committee to assess flood prone areas and recommend flood reduction measures to city planners. Seek funding for retention projects to decrease exposure to flooding. La Cygne planners reported that Cell #3 (South cell) of the Sewer Lagoon System has experienced floodwater infiltration during periods of extreme flooding (July 2007), resulting in extreme erosion of Cell 33 berm, and also perimeter fence destruction. The berm needs to be raised to prevent future floodwater infiltration.	Flood	Emergency Management Chair	Medium	1,2,4	80000	Local, State, Federal	3 years	On-going
LaCynge-14	Conduct an inventory/survey for the jurisdiction's emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. The city needs to continuously monitor /inventory its existing emergency equipment, services and capabilities to ensure they are in good working order and have not become out dated or obsolete. special attention should be given to staying informed and aware of the most current technological innovations and implementing such when justified and economically feasible.	All Hazards	Emergency Management Chair	Medium	1,2,4	5000	Local, State	1 year	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LaCynge-15	In the event of an emergency requiring evacuation of the city and its residents, a plan should be developed to accomplish the evacuation. There are three (3) federal reservoirs (Hillsdale, Melvern and Pomona) located outside of Linn County that could have a negative impact on the county, and city, in the event of a breach, overtopping or failure of a dam. A breach of any of these dams could result in flood waters affecting residential, commercial and agricultural areas. Develop a plan, along with Linn County Emergency Management, to coordinate a plan of evacuation in the least amount of time possible, with the least amount of traffic congestion possible.	Dam and Levee Failure	Emergency Management Chair	Medium	1,2,4	5000	Local	2 years	On-going
LaCynge-16	Primary Electric Lines. The city experiences complete or substantial power losses during times of severe weather, wind, heavy snow and ice. A committee should be formed or appointed to conduct a study to determine feasibility and cost of replacing existing overhead primary electric lines to underground. This would require the cooperation of both the City, the County and the local power company.	Utility/ Infrastructure Failure	Emergency Management Chair	Low	1,2,4	Unknown	Local, State, Federal	3 years	New
LaCynge-17	Facilities Vulnerability. Our city-owned facilities for public works and water and gas utilities are located on the western edge of our city with little or no protection from high wind and tornadoes. They may also be vulnerable to man-made hazards as they are located on the main highway running through town. Identify critical facilities that are vulnerable to natural and man-made hazards. Determine what actions or improvements may be made to the facilities to make them less vulnerable.	Flood, Tornado, Wildfire	Emergency Management Chair	High	1,2	5000	Local	2 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LaCynge-18	Financial and technical assistance for hazard mitigation. There are numerous projects that should be undertaken to mitigate our exposure. However, funds are not available within the city budget. Identify possible funding sources for projects related to hazard mitigation. Specific plans cannot be formulated until we are able to identify and study the hazards to which we are most vulnerable.	Wildfire, Winter Storm, Windstorm, Tornado, Hail, Hazardous Material	Emergency Management Chair	High	1,2	Staff Time	Local	2 years	New
LaCynge-19	Emergency generators. In the event of a power outage by KCP&L, the City is without power supply to continue the day-to-day functions. Determine size of emergency power supply needed to operate City Hall and Public Works; purchase and install.	Utility/ Infrastructure Failure	Emergency management Chair	High	1,2	100000	Local, State, Federal	2 years	New
LaCynge-20	Protection of electrical and building systems. The City has experienced numerous electrical failure problems with the lift stations/pumps over the last 3-4 years. The probable cause has been lightning storms. Determine how we can prevent lightning strikes and/or electrical failure problems. Install whatever protective equipment necessary.	Utility/ Infrastructure Failure	Emergency Management Chair	High	1,2	Staff Time	Local, State, Federal	1 year	New
LaCynge-21	Water distribution systems. Need to assure the integrity of the water distribution systems. Study should be conducted to determine the vulnerability of critical infrastructure and lifeline utilities, including water and gas distribution systems, to identify and prioritize projects for risk reduction.	Utility/ Infrastructure Failure	Emergency Management Chair	High	1,2	$20,000	Local, State, Federal	2 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LaCynge-22	Police and fire stations. Need to assure the integrity of the facilities used to house the police and fire protection services. Study should be conducted to determine the vulnerability of critical facilities, including police and fire, to identify and prioritize projects for risk reduction.	Utility/ Infrastructure Failure	Emergency Management Chair	High	1,2	Staff Time	Local	1 year	New
LaCynge-23	Canvass the population to determine those individuals who are considered vulnerable needs to provide aid as required.	All Hazards	Emergency Management Chair	High	1,2	Staff Time	Local	6 months	New
LaCynge-24	Storm water runoff and sanitary sewers During periods of heavy rainfall, the City experiences severe drainage problems in nearly every area of the city. Drainage needs to be evaluated and a plan of remedy developed. Perform a street-by-street study/evaluation of all drainage and storm sewer systems to determine what action should be taken to minimize damage.	Flood	Emergency Management Chair	Medium	1,2	Unknown	Local	2 years	New
LaCynge-25	Flood damage prevention. Our city is a high risk for flooding. Update flood damage prevention ordinance to include new FEMA digital flood insurance rate maps.	Flood	Emergency Management Chair	Medium	1,2	5000	Local	1 year	New
LaCynge-26	We need to continually update and educate our citizens about natural hazards that may affect our area. Provide educational materials about natural hazards and risks in La Cygne to customers in utility bills. Prepare and distribute informational brochures for potential hazardous situations.	All Hazards	Emergency Management Chair	Medium	1,2	3500	Local	1 year	New
LaCynge-27	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment, as well as the possibility of enclosures (fencing, buildings, etc.) for distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	Unknown	Local, State, Federal	2019	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LinnValley-1	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
LinnValley-2	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
LinnValley-3	Seek funding to install new warning sirens in accordance with the plan recommendations.	Tornado	City Manager	High	1,2,4	$45,000	Local, State, Federal	Completed	Completed
LinnValley-4	Identify the jurisdiction's most at-risk critical facilities, and evaluate potential mitigation techniques for protecting each facility to the maximum extent possible. An inventory/database on critical facilities should be created and maintained and shared with KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	Staff time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LinnValley-5	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous
LinnValley-6	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers, and senior care facilities and senior centers and communities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	2018	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LinnValley-7	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
LinnValley-8	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. An intentional introduction of a foreign animal disease would be devastating to the local economy as well as the rest of the state and country. The County formed a FAD Committee to address these concerns. Specific education programs should be developed in coordination with the KAH to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat animal disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
LinnValley-9	Form a planning committee to develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams/levees in the jurisdiction.	Dam and Levee Failure	City Manager	High	1,2,4	Staff time	Local	2018	On-going
LinnValley-10	Continued participation in the NFIP.	Flood	City Manager	High	1,2,4	Staff Time	Local	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
LinnValley-11	Seek funding to research, design, purchase, and install an outdoor warning siren system for the community of Linn Valley. Linn Valley does not have a storm warning system to provide advanced warning to residents. Installation of a warning system could greatly reduce exposure to high wind and tornad0 events to local residents.	Tornado	City Manager	High	1,2,4	$60,000	Local, State, Federal	completed	Completed
LinnValley-12	Appoint a planning committee to develop and submit an EAP for the Linn Valley Estates Dam NO. 4, State identification number: KS07341. Approval is granted through the DWR - State Engineering Office. The EAP for the dam should be integrated into the Linn County Emergency Operation Plan when complete. The dam is required to have an EAP filed with the State and the local emergency management office. The State evaluation of the dams is based on location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe, but is based upon the potential consequences of dam failure	Dam and Levee Failure	City Manager	High	1,2,4	Staff Time	Local	2018	On-going
LinnValley-13	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment, as well as the possibility of enclosures (fencing, buildings, etc.) for distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	Staff Time	Local, State, Federal	2019	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
MoundCity-1	Mound City is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
MoundCity-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
MoundCity-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
MoundCity-4	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited jurisdictional offices. FEMA, KDEM, NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
MoundCity-5	Identify the jurisdiction's most at-risk critical facilities, and evaluate potential mitigation techniques for protecting each facility to the maximum extent possible. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must still be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the Kansas Division of Emergency Management. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
MoundCity-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous
MoundCity-7	Seek funding to design and build a Safe Room(s) for the community of Mound City. Mound City does not have a public storm shelter in the city limits and few residences have basements, making the community vulnerable to tornado and high wind events.	Tornado	City Manager	Medium	1,2	$800,000	Local, State, Federal	2018	On-going
MoundCity-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
MoundCity-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. Specific education programs should be developed in coordination with the KAH to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
MoundCity-10	Form a planning committee to develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams/levees in the jurisdiction.	Dam and Levee Failure	City Manager	High	1,2,4	Staff Time	Local	2018	On-going
MoundCity-11	Maintain and add additional outdoor warning sirens as the city grows. Mound City has one storm siren that does not cover the area needed to warn citizens. Updating of new equipment allows the jurisdiction to improve the efficacy of their warning siren and enhance the ability to avert potential casualties by more effectively covering the necessary warning areas.	Tornado, Windstorm	City Manager	Medium	1,2	$20,000	Local, State, Federal	Continuous	On-going, Continuous
MoundCity-12	Initiate a planning committee to identify flash-flood prone areas to consider flood reduction measures to jurisdiction planners. Detailed flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure.	Flood	City Manager	Medium	1,2,4	Staff Time	Local	2018	On-going
MoundCity-13	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment, as well as the possibility of enclosures (fencing, buildings, etc.) for distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	Staff Time	Local, State, Federal	2019	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Parker-1	Parker is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
Parker-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3,4	Staff time	Local	Continuous	On-going, Continuous
Parker-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Parker-4	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Linn county a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado	City Manager	High	1,2,4	$35,000	Local, State, Federal	Completed	Completed
Parker-5	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited jurisdictional offices. FEMA, KDEM, NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost to local governments.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Parker-6	Identify the jurisdiction's most at-risk critical facilities, and evaluate potential mitigation techniques for protecting each facility to the maximum extent possible. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must still be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the Kansas Division of Emergency Management. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local	Continuous	On-going, Continuous
Parker-7	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Parker-8	Seek funding to design and build Safe Rooms for the town of Parker. Parker does not have a public storm shelter in the city limits and few residences have basements, making the community vulnerable to tornado and high wind events.	Tornado	City Manager	Medium	1,2	$500,000	State, FEMA	2018	On-going
Parker-9	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Parker-10	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. Specific education programs should be developed in coordination with the KAH to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Parker-11	Form a planning committee to develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams/levees in the jurisdiction.	Dam and Levee Failure	City Manager	High	1,2,4	Staff Time	Local	2018	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Parker-12	Promote the use of weather radios in commercial, city and residential buildings. Seek funding to implement program. Hail, high winds, and tornadoes can occur erratically and advanced warning to populations can allow for individuals and families to find shelter and seek safety before severe weather occurs. Weather radios can also help prevent property damage by advanced warning.	Tornado	City Manager	High	1,2	$1000	FEMA	2018	On-going
Parker-14	Appoint a planning committee to assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	Medium	1,2,4	Staff Time	Local	2018	On-going
Parker-15	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment, as well as the possibility of enclosures (fencing, buildings, etc.) for distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	Staff Time	Local, State, Federal	2018	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pleasanton-1	Pleasanton is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
Pleasanton-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Pleasanton-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pleasanton-4	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited jurisdictional offices. FEMA, KDEM, NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost to local governments.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Pleasanton-5	Identify the jurisdiction's most at-risk critical facilities, and evaluate potential mitigation techniques for protecting each facility to the maximum extent possible. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must still be completed. An inventory/database on critical facilities should be created and maintained by the county and shared with the Kansas Division of Emergency Management. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local	Continuous	On-going, Continuous
Pleasanton-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pleasanton-7	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Pleasanton-8	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. Specific education programs should be developed in coordination with the KAH to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Pleasanton-9	Form a planning committee to develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams/levees in the jurisdiction.	Dam and Levee Failure	City Manager	High	1,2,4	Staff Time	Local	2018	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pleasanton-10	Conduct a study of the existing storm warning system and seek funding to upgrade or replace the warning sirens for the City of Pleasanton. The study should include a 'warning system policy' that includes the dissemination of information about the 'warning siren policy' to the community. Pleasanton's warning siren system is dated, and the south section of the town may not be covered adequately. To better serve the citizens of Pleasanton, a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado	City Manager	High	1,2	$25,000	Local, State, Federal	2018	On-going
Pleasanton-11	Identify specific critical facilities that could serve as tornado shelters, and seek funding to design and build safe rooms for the citizens of Pleasanton. The community of Pleasanton does not have any protection from tornado and high wind. Many residences in the community do not have basements and need a protected place for shelter of people and vital property during tornad0 and extreme wind events.	Tornado	City Manager	Medium	1,2	$500,000	State, FEMA	2018	On-going
Pleasanton-12	Initiate a planning committee to identify flash-flood prone areas to consider flood reduction measures to jurisdiction planners. Detailed flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	Medium	1,2,4	Staff Time	Local	2018	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Pleasanton-13	Appoint a planning committee to develop and submit an EAP for the Pleasanton Lake/West Upper Dam, NID: KS02498. Approval is granted through the KDA-DWR - State Engineering Office. The EAP for the dam should be integrated into the Linn County Emergency Operation Plan, and the Pleasanton Community Emergency Disaster Plan. The dam is required to have an EAP filed with the State. The State evaluation of the dams is based on location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe, but is based upon the potential consequences of dam failure	Dam and Levee Failure	City Manager	High	1,2,4	Staff Time	Local	12/31/2014	On-going
Pleasanton-14	East Pleasanton Lake Spillway Restoration Project. Construct a bridge over the spillway structure and repair/rehabilitate the spillway to stop the migration of water that is undercutting the emergency spillway.	Dam and Levee Failure, Flood	City Manager	High	1,2	$500,000	Unknown	2016	New
Pleasanton-15	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment, as well as the possibility of enclosures (fencing, buildings, etc.) for distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	Unknown	Local, State, Federal	2019	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Prescott-1	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3,4	Unknown	Local	Continuous	On-going, Continuous
Prescott-2	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Prescott-3	Prepare and adopt an Outdoor Warning Sirens Plan for the county, including consideration of the unique geographical locations, technical requirements, system types and operational procedures of each local jurisdiction. The plans should include a review of existing outdoor warning siren coverage and recommend new locations if and where there are coverage gaps. Seek funding to install new warning sirens in accordance with the plan recommendations. Some communities and rural areas of the county have older warning systems or none at all. To better serve the citizens of Linn county a study should be conducted to evaluate measures to be taken to improve overall emergency warning services.	Tornado	City Manager	High	1,2,4	$25,000	Local, State, Federal	2018	Completed
Prescott-4	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited jurisdictional offices. FEMA, KDEM, NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Prescott-5	Identify the jurisdiction's most at-risk critical facilities, and evaluate potential mitigation techniques for protecting each facility to the maximum extent possible. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must still be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the Kansas Division of Emergency Management. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	City Manager	Medium	1,2,4	Staff Time	Local	Continuous	On-going, Continuous
Prescott-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Prescott-7	Seek funding to hire an engineer to design and construct a community tornado shelter. Tornadoes are a serious risk to people who live in Kansas. A lack of a community tornado shelter in conjunction with very few residences with basements creates a hardship for Prescott.	Tornado	City Manager	High	1,2	$15,000	FEMA	2018	On-going
Prescott-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Prescott-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. Specific education programs should be developed in coordination with the KAH to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Prescott-10	Form a planning committee to develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams/levees in the jurisdiction.	Dam and Levee Failure	City Manager	High	1,2,4	Staff Time	Local	2018	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Prescott-11	Seek funding for the purchase of backup generators to provide electricity to shelters during periods of utility failure. Winter storms generally create the greatest risk of power loss to Prescott. Heavy snow and ice accumulation often results in downed trees and power lines. During this time the preservation of power to the jurisdictions potable water supplies becomes paramount in order to prevent contamination and maintain transport to the community. Also a designated place with a backup generator (Prescott City Hall, for example) can provide warm shelter for those without out power during outages.	Winter Storm	City Manager	High	1,2	$30,000	Local, State, Federal	2018	On-going
Prescott-12	Seek funding for an assessment of alternative city lighting and other safety measures that can be taken during utility failure. Seek the funding to implement findings of the assessment. Prescott does not have a law enforcement department and is quite vulnerable during utility failure, particularly at night. Any other safety financially justifiable safety strategies for Prescott during utility failure should also be considered.	Winter Storm, Utility/ Infrastructure Failure	City Manager	High	1,2	Unknown	FEMA, Grants	2018	On-going
Prescott-13	Work with the local electric providers to inspect and reposition as many utility lines as possible underground. Consider a local ordinance to require the placement of all new utility lines underground. Winter storms have caused significant damage to existing power lines and consequently have created power outages in Prescott. Repositioning of power lines is initially a more expensive action yet may provide a more efficient long term solution for the prevention of power loss during winter storms.	Winter Storm, Utility/ Infrastructure Failure	City Manager	High	1,2	Unknown	FEMA, Grants	2018	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Prescott-15	Initiate a planning committee to identify flash-flood prone areas to consider flood reduction measures to jurisdiction planners. Detailed flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Manager	Medium	1,2,4	Staff Time	Local	2018	On-going
Prescott-16	Prescott has many areas containing expansive soils that cause significant damage to facilities and infrastructure during times of excessive moisture or drought conditions. The solution to this problem is to conduct a study to determine what City structures are or may be damaged due to these expansive soils, determine (engineer) solutions or abatements for the damage and implement designed solutions to prevent future or further damage to City owned facilities and infrastructure.	Expansive Soils	City Manager	Low	1,2,4	Staff Time	Unknown	At least 5 years	New
Prescott-17	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment, as well as the possibility of enclosures (fencing, buildings, etc.) for distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	Unknown	Local, State, Federal	2019	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD344-1	Develop and fund mitigation projects for the construction of tornado safe rooms in Unified School District 344 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendent	Medium	1,2	$1,000,000	Local, State, Federal	12/31/2019	On-going
USD344-2	Assess elevations and water flow in the district to qualify the benefit of flood control projects in the district. The Pleasanton Unified School District #344 would like to analyze the potential benefits of constructing soil-based berms, and other flood control projects, around various facilities in the district to mitigate the effects from potential flooding.	Flood	Superintendent	Medium	1,2	Staff Time	Local, State, Federal	12/31/2019	On-going, Partially completed.
USD346-1	Develop and fund mitigation projects for the construction of tornado safe rooms in Unified School District 346 schools.	Tornado	Superintendent	Medium	1,2	-	Local, State, Federal	Completed	Completed on 1 Oct 2013
USD346-2	Emergency Generators. The school district has no way to power its facilities during sustained power outages resulting in the need to close school.. The solution to this problem is to conduct a study to determine what size, number and location to install emergency backup generators for the school system. A consultant would be needed to conduct, acquire and install the emergency generator systems at the school facilities.	Utility/ Infrastructure Failure, Extreme Temperatures	Superintendent	Medium	1,2	$50,000	Unknown	5 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD346-3	Lightning/Electrical Equipment Protection. The school district continues to sustain damage to electronic and computer equipment as a result of damage sustained in lightning events. Evaluate cost effective solutions to assure protection of electrical and building systems during lightning storms. The solution to this problem is to have a consultant study the schools electrical system and determine cost effective solutions to protect the schools electronic equipment from power surges and lightning storms. The district would then need to purchase and install recommended equipment..	Utility/ Infrastructure Failure, Lightning	Superintendent	High	1,2	Unknown	Unknown	5 years	New
USD346-4	Upgrade/Expand/Improve Storm Water Management Systems. The school district continues to experience drainage issues caused by storm water runoff at the High School. The District needs to hire an engineer to examine the issues, determine a corrective action plan and hire a contractor to implement the measures to eliminate or at least improve the drainage around the High School allowing water to move away from the school facilities.	Utility/ Infrastructure Failure, Flood	Superintendent	Medium	1,2	Unknown	Unknown	5 years	New
USD362-1	Develop and fund mitigation projects for the construction of tornado safe rooms in Unified School District 362 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendent	Medium	1,2	$1,000,000	Local, State, Federal	2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD362-2	Drought has caused buildings to settle, leading to cracked foundations, walls, floors and broken windows. In May 2012, the district spent $24,046 to pier the corner of one building and to make necessary repairs to the foundation, floors, walls and glass. The problem can be solved by piering the foundation to bedrock.	Drought, Expansive Soils	Superintendent	High	1,2	90000	Unknown	year 2019	New
USD362-3	Heavy snows have increased the time it takes to remove snow and to reopen schools. Besides the loss of instructional time, schools may be used as shelters during catastrophes In addition to the equipment on hand, we would need a four wheel drive tractor along with a snow thrower.	Winter Storm	Superintendent	High	1,2	$70,000	Unknown	2019	New
USD362-4	Lightning/Electrical Equipment Protection. The school district continues to sustain damage to electronic and computer equipment as a result of damage sustained in lightning events. Evaluate cost effective solutions to assure protection of electrical and building systems during lightning storms. The district would then need to purchase and install recommended equipment.	Utility/ Infrastructure Failure	Superintendent	High	1, 2	Unknown	Unknown	2019	New
USD362-5	Emergency Generator Back Up Power at Critical Facilities During power loss events it is essential to keep school facilities operating. School facilities are a critical need during disasters. Currently several facilities do not have, or have limited, backup generator power. Identify all school facilities and that lack adequate emergency generator back up power. Determine minimum needs in regards to sizing of backup generator. Establish timeline and funding to install emergency backup generators in all identified facilities.	Utility/ Infrastructure Failure	Superintendent	High	1, 2	$30,000	Local, State and Federal	2019	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
RWD1-1	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment, as well as the possibility of enclosures (fencing, buildings, etc.) for distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure. Supplying critical populations with potable water, Linn County Rural Water District #1's top priority is maintaining distribution capabilities.	Utility/ Infrastructure Failure	District Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going
RWD2-1	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment, as well as the possibility of enclosures (fencing, buildings, etc.) for distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure. With a concentrated 169 square acres that RWD No. 2 serves in Linn County, maintaining distribution capabilities are the jurisdictions top priority.	Utility/ Infrastructure Failure	District Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going
RWD3-1	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment, as well as the possibility of enclosures (fencing, buildings, etc.) for distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure. With over 56,320 square acres that RWD No. 3 serves in Linn County and portions of neighboring counties, maintaining distribution capabilities are the jurisdictions top priority.	Utility/ Infrastructure Failure	District Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
RWD3-2	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment, as well as the possibility of enclosures (fencing, buildings, etc.) for distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure. With over 16,912 total square acres (28 sections) in Linn County alone, and lines in Miami, Anderson, and Franklin counties as well, RWD 3 (Miami County) maintaining distribution capabilities are the jurisdiction's top priority.	Utility/ Infrastructure Failure	District Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going
WSD13-1	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment. Assess the demands that may be placed on Water Supply District #13's distribution lines, systems, and equipment by Linn County's growing population, and seek funding sources to mitigate any damage to critical infrastructure. Providing potable water for all of Linn County except Pleasanton and La Cygne, Water Supply District #13 maintaining distribution capabilities are the jurisdictions top priority.	Utility/ Infrastructure Failure	Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going
WSD13-2	Provide Backup Power. Loss of electrical power will cause citizens to lose potable water supply. Purchase generators for remote locations.	Utility/ Infrastructure Failure	Manager	High	1,2	200000	Unknown	2 years	New
WSD13-3	Seek Financing and technical assistance for hazard mitigation projects. System vulnerable to service interruptions. Acquire funds for study to implement plans.	Utility/ Infrastructure Failure	Manager	High	1,2	Unknown	Unknown	1 year	New
WSD13-4	Identify critical facilities vulnerable to hazards. Be proactive on future problems. Acquire knowledge to stop problems before they happen.	Utility/ Infrastructure Failure	Manager	Medium	1,2	10000	Unknown	6 months	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
WSD13-5	Conduct regular dam maintenance. Insure that the Critzer dam remains safe in the future. Funds are not available for future dam maintenance. Acquire funding for future dam maintenance program.	Dam and Levee Failure	Manager	Medium	1,2	10000	Unknown	Annually	New
WSD13-6	Evaluate cost effective solutions to assure protection of electric and building systems in lightning storms. Numerous problems in the past, due to lightning damage. Learn methods to curtail lighting damage.	Utility/ Infrastructure Failure	Manager	High	1,2	100000	Unknown	2 years	New

5.6.5 MIAMI COUNTY

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even if a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Wildfire	Louisburg Fire Chief	High	1,2,4	None	None	1 year	New
Miami County-2	The County will work with the KDA to educate and promote local jurisdictional participation in the NFIP and Community Rating System. On an annual basis, property owners identified to be in high risk flood areas will be contact and informed of the availability of flood insurance. Miami County will also work with local Cities to contact identified property owners.	Flood	CFM/Planner	High	1,2,3,4	Staff Time	Local, State, Federal	Continuous	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-3	Miami County is committed to continued voluntary participation and compliance with the NFIP. The benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	Emergency Management Coordinator	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
Miami County-4	Several areas within Miami County are prone to flash flooding causing a hazard to lives and property. Identify areas within the jurisdiction that are prone to flash flooding by using current flood zone mapping, watershed districts and past knowledge of flash flooding. Evaluate each area to determine causes and potential remediation measures to reduce or eliminate the flash flood potential. Develop long term plans to complete identified remediation measures.	Flood	Project Manager	High	1,2	$500,000 annual	Local, State, Federal	Continuous	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-5	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP and Community Rating System (CRS). The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses. The CRS program provides additional insurance premium discounts for citizens.	Flood	CFM/Planner	High	1,2,3,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Miami County-6	Flood Warning System. Currently Miami County must rely on river level reports from upstream sensors or by physically looking at the river. Current monitoring along both the Marias des Cygnes river and Potawatomie Creek are insufficient to provide early warning. Evaluate the current needs of river level monitoring and pursues funding to provide additional monitoring stations located along the Marias des Cygnes river and Potawatomie Creek, as well as any other identified rivers and creeks, to provide early warning of rising waters.	Flood	Emergency Management Coordinator	High	1,2	Unknown	Local, State, Federal	3 years	New
Miami County-7	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	County and City Planners	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-8	Properties that are subject to the potential for repetitive flooding require maintenance and repair of infrastructure to the property such as roads, drainages, utilities etc. Land acquisition is an effective mitigation technique to permanently eliminate the potential for damages from future flood events. Develop a program to acquire and preserve parcels of land subject to repetitive flooding from willing and voluntary property owners.	Flood	CFM/Planner	High	1,2	Dependent on Fair Market Value	Local, State, Federal	Continuous	New
Miami County-9	Advertise and promote the availability of flood insurance to property owners by direct mail once a year. Miami County, including the cities of Paola, Louisburg, and Osawatomie, participate in the NFIP. There are currently 79 policies in effect, with a total coverage amount of $10,402,300. Since the jurisdiction joined the program, there have been 15 claims paid for a total loss paid amount of $613,221. (Source: FEMA, 2008). NFIP flood insurance policies protect property owners by offering affordable rates for protecting both structures and contents.	Flood	County and City Planners	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Miami County-10	ISO Fire Rating. Currently much of Miami County is at a 9 or 10 ISO fire rating. This rating systems evaluates local fire services against an industry accepted evaluation program. Encourage City leaders, County leaders, Fire Service leaders and members of the public to consider developing a plan to lower the ISO rating County wide. This would require evaluating current fire protection/suppression services and identifying benefits if successful in lowering the rating.	Terrorism/ Agri-Terrorism, Civil Disorder	Fire Chief	High	1,2,3,4	Staff Time	Local, State, Federal	2 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-11	Collect educational materials on individual and family preparedness /mitigation measures for property owners, and display at both the library and routinely visited government offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost to local governments.	All Hazards	Emergency Management Coordinator	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Miami County-12	Fontana Kansas Water Supply. Currently the majority of residents in Fontana Kansas receive their drinking water from a well on private property. During the drought of 2012, the well was critically low on water and the City of Fontana as well as the Miami County Board of County Commissioners declared a local disaster. Evaluate funding options to connect all residents in Fontana Kansas to a rural water supply.	Utility/ Infrastructure Failure	Emergency Management Coordinator	High	1,2	Unknown	Local, State, Federal	5 years	New
Miami County-13	Coordinate county and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	Emergency Management Coordinator	High	4	Staff Time	Electrical Coop, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-14	Prevention - Emergency Generator Back Up Power at Critical Facilities. During power loss events it is essential to keep local government facilities and critical facilities operating. Currently several facilities do not have, or have limited, backup generator power. Identify all local government and critical facilities and that lack adequate emergency generator back up power. Determine minimum needs in regards to sizing of backup generator. Establish timeline and funding to install emergency backup generators in all identified facilities	Utility/ Infrastructure Failure	County Administrator	Medium	1,2	350000	Local, State, Federal	5 years	New
Miami County-15	Annually host a public "hazards workshop" for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Miami County, and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs , FEMA publications, safety tips, etc.	All Hazards	Emergency Management Coordinator	High	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-16	Life Safety – Storm Shelters in Public /Government Facilities. Miami County is located in an area subject to a high risk of severe weather and tornados. Public buildings should have areas of shelter for employees and the general public doing business in these facilities. Currently there are very few buildings that have approved storm/tornado shelters. Evaluate existing buildings for safe areas from severe weather and prioritize replacements and upgrades to existing facilities. Future facilities should be constructed with safe areas from severe weather.	Tornado, Windstorm	Emergency Management Coordinator	High	1,2	$2,000,000	Local, State, Federal	2 years	New
Miami County-17	Mitigation – Open Space Preservation. Property that is preserved as open space can significantly reduce the flood insurance burden on the County. Additionally, preserved open space can give credit through the CRS and can provide additional premium discounts for citizens. Encourage the regular calculation and documentation of the amount of flood prone property that is preserved as open space to reduce the flood insurance burden.	Flood	County Flood Manager/Planner	High	1,2	Staff Time	Property Owners	Continuous	New
Miami County-18	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	Emergency Management Coordinator	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-19	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	Winter Storm	Emergency Management Coordinator	High	3,4	Staff time	Local, State, Federal	Continuous	On-going, Continuous
Miami County-20	All Hazard Public Information and Awareness – Preparedness/Mitigation. Education of the public is essential to garnering support and assistance to mitigating damage and injuries/deaths prior to an event. FEMA and other government agencies provide free educational materials on property protection measures. Acquiring and providing these at local events and static sites such as County and City buildings is an effective means of distribution.	All Hazards	Emergency Management Coordinator	Medium	3,4	$2,000 per year	Private, Local, State, Federal	Continuous	New
Miami County-21	Emergency Response capabilities. As the County grows the needs for emergency response grow as well. Prepared and trained emergency responders are critical for a successful outcome of an event. Currently there is no cooperative system to evaluate current capabilities and determine the needs of all response agencies. Emergency response needs and capabilities should be assessed to identify existing needs and shortfalls in terms of personnel, equipment, specialization or required resources. Identified needs and shortfalls should be documented and result in recommendations to the governing authority for emergency response enhancements.	All Hazards	Emergency Management Coordinator	Medium	1,2,3,4	Staff Time	None	2 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-22	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. An intentional introduction of a foreign animal disease would be devastating to the local economy as well as the rest of the state and country. The County formed a FAD Committee to address these concerns. Specific education programs should be developed in coordination with the Kansas Animal Health Department (KAH) to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat animal disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	Emergency Management Coordinator	Medium	3,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Miami County-23	Life Safety – Outdoor Storm Warning Sirens. With past growth and the age of current outdoor storm warning sirens, it is necessary to decide between replacing/repairing a current siren or adding another siren at a different location. Develop procedures and a long term plan for replacement of current outdoor warning sirens based off of manufacturer's information, availability of parts, updates in technology, age etc. Consider adapting local building code/zoning to require new subdivisions to install sufficient outdoor warning sirens to cover all lots. Sirens should meet minimum requirements set by local jurisdiction.	Tornado, Windstorm	Emergency Management Coordinator	Medium	1,2	$45,000	None	3 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-24	Develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams in Miami County. Miami County has 221 dams in the county that are regulated by the Kansas Department of Agriculture, Water Resources Department. Two of these structures are classified as "High Hazard Class C" structures. The Hillsdale Dam is located 2-1/2 miles west of Hillsdale, and eight-miles north of Paola (County Seat). This structure is owned and operated by the USACE. The Heatherwood Estates Dam is owned and operated by the City of Paola. The State evaluation of the dams is based on location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe. A dam's hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing for a potential emergency is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Dam and Levee Failure	Emergency Management Coordinator	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-25	Prevention – At Risk Critical Facilities. Currently there is very little data on critical facilities within Miami County. A thorough evaluation of potential mitigation opportunities for Miami County's critical facilities should be completed. An inventory/database on these facilities should be created and maintained and shared with local jurisdictions and emergency response agencies. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available	All Hazards	Emergency Management Coordinator	Medium	1,2,4	3000	Local, State, Federal	3 years	New
Miami County-26	Regularly calculate and document the amount of flood prone property that is preserved as open space to reduce flood insurance burden to the county. CRS credit is given for areas that are permanently preserved as open space. Although credit is not given for federal lands, The jurisdiction maintains floodplain areas preserved as open space, and protects parcels from development through deed restrictions. The jurisdiction also has floodplain land within state parks or otherwise preserved as wildlife and natural wildlife preserves, which does qualify for additional CRS credit.	Flood	County Planner	Medium	1,2	Staff Time	NA	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-27	GIS and Mapping. A comprehensive catalogue of data can greatly enhance the technical capability to manage, analyze, distribute and display spatially referenced data. Technology is advancing and the need to stay up to date is essential. Currently GIS information is used at the planning level with limited availability for emergency response use during critical events. Further development of this capability for functional use across all local governments and emergency response agencies will enhance overall capabilities to document building/structure cost data and enhance emergency response to the public. Develop cross departmental and jurisdictional information collection capabilities, and incorporate utilization of GIS information for the purposes of conducting more detailed hazard risk assessments. Develop procedures and extend access to mapping and other GIS information to emergency response agencies.	All Hazards	Planning Director	Medium	1,2,4	30000	Local, State, Federal	5 years	New
Miami County-28	Identify flash-flood prone areas to consider flood reduction measures to county planners. Flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	Emergency Management Coordinator	High	1,2	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-29	Dam Failure. Miami County has over 200 dams that are regulated by the KDA-DWR Many of these dams have property downstream which could be adversely affected if a dam was to fail. Preparing for a potential emergency is an essential planning step to secure the people and property downstream from a potential breech or dam failure. Appointment of a planning committee to develop an annex to the County Emergency Operation Plan for dam failure response and evacuation is encouraged.GIS could be utilized, along with technical information, to map potential hazard areas downstream of dams. Utilization of Federal Planning resources should be pursued, however due to security reasons, they are many times reluctant to provide information.	Dam and Levee Failure	Emergency Management Coordinator	Medium	1,2,4	2000	Local, State, Federal	4 years	New
Miami County-30	Recommend a revision to the Flood Damage Prevention Ordinance to include a "no-rise (in base flood elevation)" clause for the county. Many floodplain permitting systems, including those that meet National Flood Insurance Program standards, allow projects outside the floodway to increase base flood elevations by up to one foot. While this may not represent a significant increase for just one project, the cumulative impact of a number of projects in the same floodplain can be significant. By prohibiting any rise throughout the 100-year floodplain, a "no rise" clause ensures that the cumulative impact of multiple permitted projects will not cause flood elevations to rise to unacceptable levels.	Flood	Emergency Management Coordinator	Medium	1,2	Unknown	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-31	Research and design an appropriate stream buffer ordinance to further protect the jurisdiction's water resources and to limit future flood damages adjacent to major waterways. Riparian buffers serve as natural boundaries between local waterways and existing development and help protect resources by filtering pollutants, providing flood control, alleviating streambank erosion, mitigating stream warming, and providing room for lateral movement of the stream channel. Buffer widths can vary greatly depending upon stream channel size and the intended purpose of the buffer, but 50-100 feet is generally considered to be sufficient for purposes of bank stabilization and sediment control. Many communities require 200 feet for flood control purposes. Special consideration should be given to exempting Miami County's agricultural operations from buffer regulations.	Flood	County Planner	High	1,2	Unknown	Local, State, Federal	12/31/2019	On-going
Miami County-32	Implement a study to determine the residual flood risk in levee-protected areas. Levee owners or communities have the responsibility to provide documentation that a levee meets the requirements of Title 44 of the Code of Federal Regulations, Section 65.10 of the NFIP regulations (44CFR Section 65.10), as part of a study/mapping project. Without the required documentation necessary to comply with 44 CFR Section 65.10, the area behind the levee will be re-delineated and mapped as SFHA on the DFIRM . Procedure Memorandum No. 34 allows for the issuance of a deadline to the community for submitting the required documents.	Flood	County Planner	Medium	1,2,4	Unknown	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-33	Identify the county's most at-risk critical facilities, and evaluate potential mitigation techniques for protecting each facility to the maximum extent possible. A thorough evaluation of potential mitigation opportunities for Miami County's critical facilities must still be completed. Currently, there is very little available data on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with the KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	Emergency Management Coordinator	High	1,2,4	Staff Time	Local	12/31/2019	On-going
Miami County-34	Utility Failure. Long term planning goals that will reduce exposure to loss of utilities (electric, water, natural gas/propane) are beneficial to all organizations and citizens within the jurisdiction. Loss of these utilities during extreme events increases the damage potential to people and property. Coordinate County and local mitigation efforts with major utilities including electric, water, sewer and natural gas/propane. Encourage identification of hazards potentially affecting their infrastructure. Assess vulnerabilities of infrastructure to the hazards and identify mitigation strategies.	Utility/ Infrastructure Failure	Emergency Management Coordinator	Low	1,2,4	None	None	Continuous	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-35	Heartland Rural Electric Cooperative requires upgrade and enhancement of existing power lines to protect infrastructure and future exposure to natural hazards. The majority of these lines were built 40-plus years ago. Most of the conductor is small in size with long spans between poles. This type of line design struggles with ice and wind. Problems: (1) age of the line, (2) storms the lines have endured, (3) remote areas they transverse, and (4) need for reliable electricity. Collectively these issues will not allow Heartland to supply electricity to the people of Miami County to meet today's needs. Needs: Replacement of (5½) miles of #6CWC three-phase line between the Parker and Miami sub stations. This three-phase tie interconnects the Parker and Miami substations and does not possess adequate capacity for back feed in the event of emergencies. The aged #6CWC construction has sustained much damage over the years and was not built to current and acceptable standards. This line directly provides power to (2) communications sites. In addition; the two sub stations provide power to (11) communication sites (incl. cell towers, state and local communications links, fiber-optic sites, phone equipment, etc.), (8) water district services and (2) schools (one of which is the area's consolidated school district campus). A large, newly incorporated, public wholesale water district supplying water to this region is now under construction. The main plant as well as several ancillary services will be powered by the Miami substation. This water district will supply many other public water districts and municipalities in the region. The Parker substation provides power to (545) meters. The Miami substation provides power to (490) meters. Replacement of this line would significantly mitigate losses to damages and greatly enhance reliability in the surrounding area. Benefits: Reliable power lines built to endure ice and wind load conditions with the benefits of being able to provide backup power between substations. Avoid cost accrued due to storm damaged power lines; labor and material cost, revenue lost, public losses due to lack of power.	Utility/ Infrastructure Failure	Emergency Management Coordinator	Low	1,2	Unknown	FEMA	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-36	Heartland Rural Electric Cooperative – Project #3: requires upgrade and enhancement of existing power lines to protect infrastructure and future exposure to natural hazards. The majority of these lines were built 40-plus years ago. Most of the conductor is small in size with long spans between poles. This type of line design struggles with ice and wind. Problems: (1) age of the line, (2) storms the lines have endured, (3) remote areas they transverse, and (4) need for reliable electricity. Collectively these issues will not allow Heartland to supply electricity to the people of Miami County to meet today's needs. Needs: Replacement of (2) miles of #6CWC on the east feeder (R2-7) of Linn substation. This portion of line directly feeds (92) meters which includes mostly residences (1) cell tower and (1) water district service. This line traverses a river and timbered area of poor access. The aged #6CWC construction has sustained much damage over the years and was not built to current and acceptable standards. Replacement of this line would significantly mitigate losses to damages and greatly enhance reliability in the surrounding area. Benefits: Reliable power lines built to endure ice and wind load conditions with the benefits of being able to provide backup power between substations. Avoid cost accrued due to storm damaged power lines; labor and material cost, revenue lost, public losses due to lack of power. Increased safety to the public.	Utility/ Infrastructure Failure	Emergency Management Coordinator	Medium	1,2	Unknown	FEMA	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-37	Heartland Rural Electric Cooperative requires upgrade and enhancement of existing power lines to protect infrastructure and future exposure to natural hazards. The majority of these lines were built 40-plus years ago. Most of the conductor is small in size with long spans between poles. This type of line design struggles with ice and wind. Problems: (1) age of the line, (2) storms the lines have endured, (3) remote areas they transverse, and (4) need for reliable electricity. Collectively these issues will not allow Heartland to supply electricity to the people of Miami County to meet today's needs. Needs: Replacement of (10) miles of CWC single-phase line of enhanced design. The (10) miles selected met several points of prioritization and evaluation and represent a small percentage of total CWC miles in the Heartland distribution system. Replacing the (10) miles would significantly mitigate losses due to damages and greatly enhance reliability in the surrounding areas. The aged CWC construction has sustained much damage over the years and was not built to current and acceptable standards. Nearly all of HREC's membership in the county would directly if not indirectly benefit from improved safety and improved reliability of such replacements. Benefits: Reliable power lines built to endure ice and wind load conditions with the benefits of being able to provide backup power between substations. Avoid cost accrued due to storm damaged power lines; labor and material cost, revenue lost, public losses due to lack of power. Increased safety to the public.	Utility/ Infrastructure Failure	Emergency Management Coordinator	Low	1,2	Unknown	FEMA	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-38	Conduct an inventory/survey for the county's emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to verify the county's current Emergency services are adequate to protect public health and safety from most probable hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations to the County Commission for emergency service enhancements.	All Hazards	Emergency Management Coordinator	High	1,2	Staff Time	Local, State	12/31/2019	On-going
Miami County-39	Research, develop, and recommend an amendment to county building codes that requires installation of tornado shelters for new major manufactured and/or mobile home parks with more than 10 mobile home spaces. Mobile homes are particularly vulnerable to damage from high winds. Residents, even those who live in mobile homes with tie-downs, should seek safe shelter when a tornado threatens. Tornado shelters should be constructed in major mobile home parks to ensure a safe place for residents to go during a tornado event. The shelter structure, which should be designed to withstand a minimum of 120mph winds, could easily serve an alternate purpose such as a community center, laundry facility, etc.	All Hazards	Emergency Management Coordinator	Medium	1,2	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-40	Develop cross-departmental information collection capabilities, and incorporate cadastral (building/parcel) data utilizing a GIS for purposes of conducting more detailed hazard risk assessments and for tracking permitting / land use patterns, buildings and infrastructure replacement costs, and overall structural accounting for the county. A comprehensive catalog of data can greatly enhance the county's technical capability to manage, analyze and display spatially referenced data. Miami County has basic GIS capabilities available through the Miami County GIS/Mapping Department. Further development of this capability for functional use across all departments will enhance the county's overall capabilities to document building/structure cost data, and further hazard mitigation goals in developing cadastral data for the county.	All Hazards	Emergency Management Coordinator	High	4	Staff Time	Local, KDEM, Grants	Continuous	On-going, Continuous
Miami County-41	Develop and implement a wildfire prevention/education program. The program should provide education to the general public, and target children, fire and equipment users, builders and developers, and homeowners. Miami County has a burn-ban resolution that requires permitting prior to any open burning operations. In periods of drought or extreme weather conditions a burn ban may be declared. When a ban is declared all radio stations, TV stations, and regional newspapers in the area are notified as well as City Managers, fire chiefs, etc. To better educate the public at large, Miami County should expand their existing fire protection program to include wildfire workshops to all age groups and commercial	Wildfire	Emergency Management Coordinator	Medium	3,4	$250 per workshop	Local	Continuous	On-going, Continuous

	operations.								

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Miami County-42	Examine the current agreements within the county and assess the need to expand or update cooperative agreements for firefighting resources. Include agreements with local, state and federal agencies. Cooperative agreements provide the support needed in times of emergency, and are an important element of planning, with the long-range goal of reducing damage to structures and systems within the jurisdiction.	Wildfire	Emergency Management Coordinator	High	4	Staff Time	Local	Continuous	On-going, Continuous
Miami County-43	Appoint a working group to evaluate the firefighting water supply resources within the county, including both fixed and mobile supply issues. Lack of sufficient water supply makes it difficult to suppress fires. Whenever possible, increasing access to water along water service delivery lines (wet and dry hydrants) would provide additional resources for emergency responders.	Wildfire	Emergency Management Coordinator	High	1,2,4	Staff Time	Local	12/31/2019	On-going
Miami County-44	Evaluate existing flood warning systems and needs for system upgrades and coverage. Seek grant funding to purchase and install systems. Monitoring stations along the Marias des Cygnes River and Pottawatomie Creek provide insufficient data for advance warning of potential flood levels. Additional monitoring stations should be located and installed to provide early warning of rising waters.	Flood	County Planner	High	1,2	Unknown	Local, State	6/1/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Fontana-1	The County and City will work with the KDA to educate and promote local jurisdictional participation in the NFIP and CRS. On an annual basis, property owners identified to be in high risk flood areas will be contact and informed of the availability of flood insurance. Miami County will work Cities to contact identified property owners.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Fontana-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	County and City Planners	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Fontana-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	County and City Planners	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Fontana-4	Collect educational materials on individual and family preparedness /mitigation measures for property owners, and display at both the library and routinely visited government offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Fontana-5	Coordinate county and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Electrical Coop, State, Federal	12/31/2019	On-going
Fontana-6	Annually host a public "hazards workshop" for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Miami County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs , FEMA publications, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local	Continuous	On-going, Continuous
Fontana-7	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Fontana-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	Winter Storm	City Manager	High	3,4	Staff Time	Local, State, FEMA	Continuous	On-going, Continuous
Fontana-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues.. An intentional introduction of a foreign animal disease would be devastating to the local economy as well as the rest of the state and country. The County formed a FAD Committee to address these concerns. Specific education programs should be developed in coordination with the KAH to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat animal disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, FEMA	12/31/2019	On-going
Fontana-10	Develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams in Miami County.	Dam and Levee Failure	City Manager	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going
Fontana-11	Pursue funding for the purchase and installation of emergency backup generators for protection of critical facility infrastructure. In the past thunderstorm high winds have created the greatest risk of power loss to Fontana. High winds from the storms have resulted in downed power lines. During this time preservation of power at the two lift stations is paramount in order to prevent contamination from sewage.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	$50,000	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Louisburg-1	Emergency Response Capabilities. As Louisburg grows the needs for emergency response grow as well. Prepared and trained emergency responders are critical for a successful outcome of an event. Currently there is no cooperative system to evaluate current capabilities and determine the needs of all response agencies. Emergency response needs and capabilities should be assessed to identify existing needs and shortfalls in terms of personnel, equipment, specialization or required resources. Identified needs and shortfalls should be documented and result in recommendations to the governing authority for emergency response enhancements.	All Hazards	Fire Chief	High	4	Staff Time	Local, State, Federal	Continuous	New
Louisburg-2	Life Safety - Outdoor Storm Warning Sirens. With past growth and the age of current outdoor storm warning sirens, it is necessary to decide between replacing/repairing a current siren or adding another siren at a different location. Develop procedures and a long term plan for replacement of current outdoor warning sirens based off of manufacturer's information, availability of parts, updates in technology, age etc. Consider adapting local building code/zoning to require new subdivisions to install sufficient outdoor warning sirens to cover all lots. Sirens should meet minimum requirements set by local jurisdiction.	Tornado, Windstorm	Police Chief	High	1,2	$45,000	Local, State, Federal	2 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Louisburg-3	Prevention – At Risk Critical Facilities. Currently there is very little data on critical facilities within Louisburg. A thorough evaluation of potential mitigation opportunities for Louisburg's critical facilities should be completed. An inventory /database on these facilities should be created and maintained and shared with local jurisdictions and emergency response agencies. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	Planner	High	1,2,4	Staff Time	Local, State, Federal	2 years	New
Louisburg-4	Prevention – Emergency Generator Back up Power at Critical Facilities. During power loss events it is essential to keep local government facilities and critical facilities operating. Currently several facilities do not have, or have limited, backup generator power. Identify all local government and critical facilities and that lack adequate emergency generator back up power. Determine minimum needs in regards to sizing of backup generator. Establish timeline and funding to install emergency backup generators in all identified facilities.	Utility/ Infrastructure Failure	Police Chief	High	1,2	$50,000	Local, State, Federal	1 year	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Louisburg-5	Life Safety - Storm Shelters in Public/Governmental Facilities Louisburg is located in an area subject to a high risk of severe weather and tornados. Public buildings should have areas of shelter for employees and the general public doing business in these facilities. Currently there are very few buildings that have approved storm/tornado shelters. Evaluate existing buildings for safe areas from severe weather and prioritize replacements and upgrades to existing facilities. Future facilities should be constructed with safe areas from severe weather.	Tornado, Windstorm	Planner	High	1,2	$350,000	None	2 years	New
Louisburg-6	Louisburg is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Louisburg-7	The County and City will work with the KDA to educate and promote local jurisdictional participation in the NFIP and CRS. On an annual basis, property owners identified to be in high risk flood areas will be contact and informed of the availability of flood insurance. Miami County will work Cities to contact identified property owners.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Louisburg-8	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	County and City Planners	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Louisburg-9	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	County and City Planners	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Louisburg-10	Collect educational materials on individual and family preparedness /mitigation measures for property owners, and display at both the library and routinely visited government offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Louisburg-11	Coordinate county and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Electrical Coop, State, Federal	12/31/2019	On-going
Louisburg-12	Annually host a public "hazards workshop" for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Miami County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs , FEMA publications, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local	Continuous	On-going, Continuous
Louisburg-13	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Louisburg-14	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	Utility/ Infrastructure Failure	City Manager	High	3,4	Staff Time	Local, State, FEMA	Continuous	On-going, Continuous
Louisburg-15	All Hazard Public Information and Awareness Preparedness /Mitigation Education of the public is essential to garnering support and assistance to mitigating damage prior to an event. FEMA and other government agencies provide free educational materials on property protection measures. Acquiring and providing these at local events and static sites such as County and City buildings is an effective means of distribution	All Hazards	Planner	Medium	3,4	Staff Time	None	Continuous	New
Louisburg-16	Property Protection - Utility Failure Long term planning goals that will reduce exposure to loss of utilities (electric, water, natural gas/propane) are beneficial to all organizations and citizens within the jurisdiction. Loss of these utilities during extreme events increases the damage potential to people and property. Coordinate local mitigation efforts with major utilities including electric, water, sewer and natural gas/propane. Encourage identification of hazards potentially affecting their infrastructure. Assess vulnerabilities of infrastructure to the hazards and identify mitigation strategies.	Utility/ Infrastructure Failure	Planner	Medium	1,2,4	Staff Time	Unknown	Continuous	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Louisburg-17	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues.. An intentional introduction of a foreign animal disease would be devastating to the local economy as well as the rest of the state and country. The County formed a FAD Committee to address these concerns. Specific education programs should be developed in coordination with the KAH to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat animal disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	Medium	3,4	Staff time	Local, State, FEMA	12/31/2019	On-going
Louisburg-18	Upgrades to Electrical Services. Louisburg is in an area of the Country where electrical utility infrastructure is subject to high winds and ice/snow storms. Much of this infrastructure is old and subject to failure. Evaluate all electrical infrastructure in regards to its stability and ability to withstand future weather events. Pursue funding to upgrade identified infrastructure to endure ice and wind load conditions.	Utility/ Infrastructure Failure	Planner	Medium	1,2	Unknown	Unknown	2 years	New
Louisburg-19	Develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams in Miami County.	Dam and Levee Failure	City Manager	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Louisburg-20	Appoint a planning committee to assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	City Planner	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going
Louisburg-21	Conduct a study to determine the efficacy of the existing warning siren system within the Jurisdiction, and repair and install new sirens as needed to ensure area coverage. Reduce the possibility of damages and loss of life to the citizens by maintaining and upgrading the early warning system for the City of Louisburg.	Tornado	City Manager	Medium	1,2	Staff Time	Local	12/31/2019	On-going
Osawatomie-1	Outdoor Storm Warning Sirens. With past growth and the age of current outdoor storm warning sirens, it is necessary to decide between replacing/repairing a current siren or adding another siren at a different location. Develop procedures and a long term plan for replacement of current outdoor warning sirens based off of manufacturer's information, availability of parts, updates in technology, age etc. Replace current sirens based off recent repair costs	All Hazards	City Manager	High	1,2	60000	Local, State, Federal	3 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osawatomie-2	Osawatomie is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
Osawatomie-3	The County and City will work with the KDA to educate and promote local jurisdictional participation in the NFIP and CRS. On an annual basis, property owners identified to be in high risk flood areas will be contact and informed of the availability of flood insurance. Miami County will work Cities to contact identified property owners.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State, Federal	12/31/2019	On-going
Osawatomie-4	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	County and City Planners	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osawatomie-5	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	County and City Planners	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Osawatomie-6	Collect educational materials on individual and family preparedness /mitigation measures for property owners, and display at both the library and routinely visited government offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Osawatomie-7	Coordinate county and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff Time	Electrical Coop, State, Federal	12/31/2019	On-going
Osawatomie-8	Annually host a public “hazards workshop” for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Miami County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs , FEMA publications, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osawatomie-9	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Osawatomie-10	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	Winter Storm	City Manager	High	3,4	Staff Time	Local, State, FEMA	Continuous	On-going, Continuous
Osawatomie-11	Osawatomie Levee. In 2007, flood waters overtopped the levee system in Osawatomie resulting in widespread property damage. Conduct a study to determine potential causes of the 2007 overtopping of Osawatomie Levee System. Determine steps needed to mitigate this potential in future floods. Work to certify levees surrounding the City of Osawatomie	Dam and Levee Failure	City Manager	High	1,2	Staff Time	Local, State, Federal	2 years	New
Osawatomie-12	Life Safety - Storm Shelters in Public/Governmental Facilities Osawatomie is located in an area subject to a high risk of severe weather and tornados. Public buildings should have areas of shelter for employees and the general public doing business in these facilities. Currently there are very few buildings that have approved storm/tornado shelters Evaluate existing buildings for safe areas from severe weather and prioritize replacements and upgrades to existing facilities. Future facilities should be constructed with safe areas from severe weather.	Tornado, Windstorm	City Manager	Medium	1,2	$500,000	Local, State, Federal	2 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osawatomie - 13	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues.. An intentional introduction of a foreign animal disease would be devastating to the local economy as well as the rest of the state and country. The County formed a FAD Committee to address these concerns. Specific education programs should be developed in coordination with the KAH to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat animal disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, FEMA	12/31/2019	On-going
Osawatomie-14	Prevention - Emergency Generator Back Up Power at Critical Facilities. During power loss events it is essential to keep local government facilities and critical facilities operating. Currently several facilities do not have, or have limited, backup generator power. Identify all local government and critical facilities and that lack adequate emergency generator back up power. Determine minimum needs in regards to sizing of backup generator. Establish timeline and funding to install emergency backup generators in all identified facilities.	Utility/ Infrastructure Failure	City Manager	Medium	1,2	$40,000	Local, State	4 years	New
Osawatomie-15	Develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams in Miami County.	Dam and Levee Failure	City Manager	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osawatomie-16	Property Protection - Utility Failure. Long term planning goals that will reduce exposure to loss of utilities (electric, water, natural gas/propane) are beneficial to all within the jurisdiction. Loss of these utilities during extreme events increases the damage potential to people and property. Coordinate County and local mitigation efforts with major utilities including electric, water, sewer and natural gas/propane. Encourage identification of hazards potentially affecting their infrastructure. Assess vulnerabilities of infrastructure to the hazards and identify mitigation strategies	Utility/ Infrastructure Failure	City Manager	Low	1,2	Staff Time	None	2 years	New
Osawatomie-17	Seek funding sources to fulfill the requirements provided in Title 44, Chapter 1, Part 65, Section 65.10 of the Code of Federal Regulations for levee certification. Two levees, one along the Marias des Cygne and the other along Pottawatomie Creek, were constructed to protect the city from flooding. At the time this plan was authored the levees had not achieved FEMA certification. Initially, the City of Osawatomie was unable to submit the required documentation for levee certification by the procedures outlined under Procedure Memorandum No.43 (PM No.43) set forth by FEMA. PM No.34 holds the levee owner or community responsible for providing the documentation that shows the levee system meets the requirements of Section 65.10 of the NFIP regulations. Upon meeting all specifications of these regulations the structures may be identified by FEMA as Provisionally Accredited Levees (providing 1-percent-annual-chance flood protection).	Dam and Levee Failure	City Planner	Low	1,2	Unknown	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osawatomie-18	Conduct a study to determine potential causes of the 2007 overtopping of Osawatomie Levee System. The jurisdiction has expressed concern regarding the current height of the levee after the flood of 2007 produced water levels that overtopped the levee walls.	Dam and Levee Failure	City Manager	High	1,2,4	Unknown	USACE, FEMA	12/31/2019	On-going
Osawatomie-19	Conduct a study to determine the year-built and level of protection for each local emergency facility. On completion of the study, consider seeking funding for mitigation projects for emergency facilities not currently designed for protection from flooding. Reduce the possibility of damages to emergency facilities from flooding.	Flood	City Manager	Low	1,2,4	Unknown	Local, State, FEMA	12/31/2019	On-going
Osawatomie-20	Conduct a survey of all water retention and detention areas to ensure proper depth and runoff control. Restore to design specifications as necessary. Both retention and detention basins are a type of best management practice that are used for the management of stormwater runoff in order to help prevent flooding. The basins are found adjacent to tributaries of rivers, streams, lakes or bays. While both types of basins can be used to mitigate against floods it is the detention basin that is generally designed to provide protection from a 100-year flood event.	Dam and Levee Failure	City Planner	Medium	1,2	Unknown	Local, State, FEMA	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osawatomie-21	Conduct a study to determine the best locations for flood monitoring systems along the Marais Des Cygnes River and Pottawatomie Creek. Seek funding to purchase and install the monitoring systems. Monitoring stations along the Marias des Cygnes River and Pottawatomie Creek provide insufficient data for advance warning of potential flood levels. Additional monitoring stations should be located and installed to provide early warning of rising waters.	Flood	City Planner	Low	1,2,4	Unknown	Local, State	12/31/2019	On-going
Osawatomie-22	Incorporate the inspection and management of trees into the city's routine maintenance process to remove trees that may increase the risk of power failure at critical facilities. A significant amount of property damage during high wind events results from tree failure. Trees that fall into utility lines have additional serious consequences such as causing power outages, surges, fires and other damage. The jurisdiction's ability to recognize and prevent hazardous tree conditions (through inspection, pruning or removal) is the best defense against problems and costly damages resulting from tree failure. Specifically, trees located on city property, which pose immediate threats to property, utility lines and other critical facilities should be addressed.	Utility/ Infrastructure Failure	City Manager	Low	1,2	$10,000	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Paola-1	Appointment of a planning committee to develop an annex to the County Emergency Operation Plan for dam failure response and evacuation is encouraged.GIS could be utilized, along with technical information, to map potential hazard areas downstream of dams .Utilization of Federal Planning resources should be pursued, however due to security reasons, they are many times reluctant to provide information.	Dam and Levee Failure	Planner	High	1,2,4	600000	Local, State, Federal	Continuous	New
Paola-2	Paola is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
Paola-3	The County and City will work with the KDA to educate and promote local jurisdictional participation in the NFIP and CRS. On an annual basis, property owners identified to be in high risk flood areas will be contact and informed of the availability of flood insurance. Miami County will work Cities to contact identified property owners.	Flood	City Manager	High	1,2,3,4	Staff Time	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Paola-4	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	County and City Planners	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Paola-5	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	County and City Planners	High	1,2,3,4	Staff Time	Local	Continuous	On-going, Continuous
Paola-6	Collect educational materials on individual and family preparedness /mitigation measures for property owners, and display at both the library and routinely visited government offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Paola-7	Coordinate county and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	High	4	Staff time	Electrical Coop, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Paola-8	Annually host a public "hazards workshop" for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Miami County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs , FEMA publications, safety tips, etc.	All Hazards	City Manager	High	3,4	$500 per workshop	Local	Continuous	On-going, Continuous
Paola-9	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Paola-10	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	Winter Storm	City Manager	High	3,4	Staff Time	Local, State, FEMA	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Paola-11	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues.. An intentional introduction of a foreign animal disease would be devastating to the local economy as well as the rest of the state and country. The County formed a FAD Committee to address these concerns. Specific education programs should be developed in coordination with the KAH to inform ranchers, farmers, and veterinary professionals on the methods to identify, prevent, and treat animal disease outbreaks.	Terrorism/ Agri-Terrorism, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, FEMA	12/31/2019	On-going
Paola-12	Develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams in Miami County.	Dam and Levee Failure	City Manager	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Paola-13	Appoint a committee to develop an Emergency Action Plan for the Heatherwood Estates Dam in accordance with Corps of Engineers requirements. The Heatherwood Estates dam was constructed in 2001 and according to the Kansas Department of Agriculture, Water Resources Department this dam is classified as a "High Hazard" structure, and is owned and operated by the City of Paola. The State evaluation of the dams is based on location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe, as defined by the State of Kansas. An individual dam's hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing an Emergency Action Plan in accordance with FEMA guidelines is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Dam and Levee Failure	City Manager	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going
Paola-14	Appoint a planning committee to identify flood prone areas to consider flood reduction measures to city planners. Flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	Floodplain Manager	Medium	1,2,4	Staff Time	Local	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Paola-15	Property Protection - Firefighting Water Supply. A large portion of Miami County lacks sufficient water supply for firefighting. This makes it difficult for firefighters to suppress fires. Encourage water departments and citizens to participate in programs that allow installation of wet fire hydrants. Provide information to the public in regards to options for both wet and dry fire hydrants.	Wildfire	Fire Chief	Medium	1,2,3,4	$2,2M	City	Continuous	New
Paola-16	Emergency Response Capabilities As the City grows the needs for emergency response grow as well. Prepared and trained emergency responders are critical for a successful outcome of an event. Currently there is no cooperative system to evaluate current capabilities and determine the needs of all response agencies. Emergency response needs and capabilities should be assessed to identify existing needs and shortfalls in terms of personnel, equipment, specialization or required resources. Identified needs and shortfalls should be documented and result in recommendations to the governing authority for emergency response enhancements.	All Hazards	Fire Chief	Medium	1,2,4	None	None	Continuous	New
Paola-17	Emergency Generator Back Up Power at Critical Facilities During power loss events it is essential to keep local government facilities and critical facilities operating. Currently several facilities do not have, or have limited, backup generator power. Identify all local government and critical facilities and that lack adequate emergency generator back up power. Determine minimum needs in regards to sizing of backup generator. Establish timeline and funding to install emergency backup generators in all identified facilities.	Utility/ Infrastructure Failure	Planner	Medium	1,2	30000	Local, State, Federal	2 years	New

Paola-18	Outdoor Storm Warning Sirens. With past growth and the age of current outdoor storm warning sirens, it is necessary to decide between replacing/repairing a current siren or adding another siren at a different location. Develop procedures and a long term plan for replacement of current outdoor warning sirens based off of manufacturer's information, availability of parts, updates in technology, age etc. Consider adapting local building code/zoning to require new subdivisions to install sufficient outdoor warning sirens to cover all lots. Sirens should meet minimum requirements set by local jurisdiction	All Hazards	City Planner	Medium	1,2	$45,000	None	Continuous	New
Paola-19	Property Protection - Utility Failure Long term planning goals that will reduce exposure to loss of utilities (electric, water, natural gas/propane) are beneficial to all organizations and citizens within the jurisdiction. Loss of these utilities during extreme events increases the damage potential to people and property. Coordinate County and local mitigation efforts with major utilities including electric, water, sewer and natural gas/propane. Encourage identification of hazards potentially affecting their infrastructure. Assess vulnerabilities of infrastructure to the hazards and identify mitigation strategies	Utility/ Infrastructure Failure	City Manager	Medium	1,2,4	Unknown	Local, State, Federal	Continuous	New
Paola-20	Utility Failure - Upgrades to Electrical Services. Miami County is in an area of the Country where electrical utility infrastructure is subject to high winds and ice/snow storms. Much of this infrastructure is old and subject to failure. Evaluate all electrical infrastructure in regards to its stability and ability to withstand future weather events. Pursue funding to upgrade identified infrastructure to endure ice and wind load conditions.	Utility/ Infrastructure Failure	Planner	Medium	1,2	Unknown	Local, State, Federal	Continuous	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Paola-21	Life Safety - Storm Shelters in Public/Governmental Facilities. Miami County is located in an area subject to a high risk of severe weather and tornados. Public buildings should have areas of shelter for employees and the general public doing business in these facilities. Currently there are very few buildings that have approved storm/tornado shelters. Evaluate existing buildings for safe areas from severe weather and prioritize replacements and upgrades to existing facilities. Future facilities should be constructed with safe areas from severe weather.	Tornado, Windstorm	Planner	Low	1,2	100000	Local, State, Federal	Continuous	New
Paola-22	Prevention - Flash Flood Prone Areas. Several areas within Miami County and the City's are prone to flash flooding causing a hazard to lives and property. Identify areas within the jurisdiction that are prone to flash flooding by using current flood zone mapping, watershed districts and past knowledge of flash flooding. Evaluate each area to determine causes and potential remediation measures to reduce or eliminate the flash flood potential. Develop long term plans to complete identified remediation measures.	Flood	Planner	Low	1,2	None	None	Continuous	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Paola-23	GIS and mapping. A comprehensive catalog of data can greatly enhance the technical capability to manage, analyze, distribute and display spatially referenced data. Technology is advancing and the need to stay up to date is essential. Currently GIS information is used at the planning level with limited availability for emergency response use during critical events. Further development of this capability for functional use across all local governments and emergency response agencies will enhance overall capabilities to document building/structure cost data and enhance emergency response to the public. Develop cross departmental and jurisdictional information collection capabilities, and incorporate utilization of GIS information for the purposes of conducting more detailed hazard risk assessments. Develop procedures and extend access to mapping and other GIS information to emergency response agencies.	All Hazards	Planner	Low	1,2	Staff Time	Unknown	Continuous	New
Paola-24	Property Protection - ISO Fire Rating Currently the City of Paola is a 4 ISO fire rating. This rating systems evaluates local fire services against an industry accepted evaluation program. Encourage City and Fire Service leaders and members of the public to consider developing a plan to lower the ISO rating City wide. This would require evaluating current fire protection/suppression services and identifying benefits if successful in lowering the rating.	Wildfire	Fire Chief	Low	4	100000	Local, State, Federal	5 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Paola-25	All Hazard Public Information and Awareness-Preparedness/Mitigation Education of the public is essential to garnering support and assistance to mitigating damage prior to an event. FEMA and other government agencies provide free educational materials on property protection measures. Acquiring and providing these at local events and static sites such as County and City buildings is an effective means of distribution.	All Hazards	Planner	Low	3,4	Staff Time	None	Continuous	New
USD230-1	Develop and fund mitigation projects for the construction of tornado safe rooms in Unified School District 230 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendent	Medium	1,2	$1,000,000	Local, State, Federal	12/31/2019	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD367-1	Develop and fund mitigation projects for the construction of tornado safe rooms in Unified School District 367 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits. Encourage the construction of storm shelters in all schools. Work with local building code officials to determine the feasibility of installing storm shelters within existing buildings or installing purpose built modules. Institute program to educate parents and citizens of the need for storm shelters in schools.	Tornado	Superintendent	High	1,2	$4,000,000	Local, State, Federal	3 years	On-going
USD367-2	Prevention-Emergency Generator Back Up Power at Critical Facilities. During power loss events it is essential to keep local school facilities operating. Local school facilities are critical to the response and recovery phase during a disaster. Currently several facilities do not have, or have limited, backup generator power. Identify all local government and critical facilities and that lack adequate emergency generator back up power. Determine minimum needs in regards to sizing of backup generator. Establish timeline and funding to install emergency backup generators in all identified facilities.	Utility/ Infrastructure Failure	Superintendent	Medium	1,2	$50,000	Local, State, Federal	1 year	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD367-3	Property Protection - Utility Failure. Long term planning goals that will reduce exposure to loss of utilities (electric, water, natural gas/propane) are beneficial to all organizations and citizens within the jurisdiction. Loss of these utilities during extreme events increases the damage potential to people and property. Coordinate mitigation efforts with major utilities including electric, water, sewer and natural gas/propane. Encourage identification of hazards potentially affecting their infrastructure. Assess vulnerabilities of infrastructure to the hazards and identify mitigation strategies.	Utility/ Infrastructure Failure	Superintendent	Medium	1,2,4	Unknown	Local, State, Federal	Continuous	New
USD368-1	Develop and fund mitigation projects for the construction of tornado safe rooms in Unified School District 368 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Building and Grounds Director	Medium	1,2	$4M	Local, State, Federal	3 years	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD368-2	Utility Failure. Long term planning goals that will reduce exposure to loss of utilities (electric, water, natural gas/propane) are beneficial to all organizations and citizens within the jurisdiction. Loss of these utilities during extreme events increases the damage potential to people and property. Coordinate mitigation efforts with major utilities including electric, water, sewer and natural gas/propane. Encourage identification of hazards potentially affecting their infrastructure. Assess vulnerabilities of infrastructure to the hazards and identify mitigation strategies.	Utility/ Infrastructure Failure	Building and Grounds Director	Medium	1,2,4	Unknown	Private, Local, State, Federal	Continuous	New
USD368-3	Prevention - Emergency Generator Back Up Power at Critical Facilities. During power loss events it is essential to keep local school facilities operating. Local school facilities are critical to the response and recovery phase during a disaster. Currently several facilities do not have, or have limited, backup generator power. Identify all local government and critical facilities and that lack adequate emergency generator back up power. Determine minimum needs in regards to sizing of backup generator. Establish timeline and funding to install emergency backup generators in all identified facilities.	Utility/ Infrastructure Failure	Building and Grounds Director, Superintendent	Medium	1,2	$50,000	Local, State, Federal	1 year	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD416-1	Develop and fund mitigation projects for the construction of tornado safe rooms in Unified School District 416 schools. As a public school district we work diligently to provide safe facilities for our students and staff. Our community would benefit greatly by having safe tornado safe rooms in all of our schools during times of severe weather events. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Assistant Superintendent	Medium	1,2	$4M	Local, State, Federal	3 years	On-going
USD416-2	Emergency Generator Back Up Power at Critical Facilities During power loss events it is essential to keep school facilities operating. School facilities are a critical need during disasters. Currently several facilities do not have, or have limited, backup generator power. Identify all school facilities and that lack adequate emergency generator back up power. Determine minimum needs in regards to sizing of backup generator. Establish timeline and funding to install emergency backup generators in all identified facilities.	Utility/ Infrastructure Failure	Assistant Superintendent	Medium	1,2	$50,000	Local, State, Federal	1 year	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD416-3	Long term planning goals that will reduce exposure to loss of utilities (electric, water, natural gas/propane) are beneficial to all organizations and citizens within the jurisdiction. Loss of these utilities during extreme events increases the damage potential to people and property. Coordinate efforts with major utilities including electric, water, sewer and natural gas/propane. Encourage identification of hazards potentially affecting their infrastructure. Assess vulnerabilities of infrastructure to the hazards and identify mitigation strategies.	Utility/ Infrastructure Failure	Superintendent	Medium	1,2,4	Unknown	Unknown	Continuous	New
RWD3-1	Continue to assess the impact of natural hazards on water distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure. With over 53,000 square acres that Rural Water District No. 3 serves in Miami County as well as portions of Linn, Franklin, and Anderson County maintaining distribution capabilities are the jurisdictions top priority.	Utility/ Infrastructure Failure	Superintendent	High	1,2	Unknown	Local, State, Federal	12/31/2019	On-going

5.6.6 OSAGE COUNTY

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osage County-1	Identify vulnerable needs population in Osage County and develop a program or system for supporting vulnerable populations during emergency events. At present time we do not have a funding source to complete a study to identify populations in Osage County that have vulnerable needs. We do not have a program in place for assistance to vulnerable populations. Conduct a study to identify vulnerable needs population. Create a database and GIS mapping locations for persons with special needs. Develop a plan and actions needed to protect and assist people with critical needs.	All Hazards	Emergency Management Coordinator	High	1,2,4	$10,000	Local, HMGP	2 years	New
Osage County-2	Increase radio repeaters/antenna height to expand radio coverage throughout Osage County for law enforcement, fire, and emergency medical services. Osage County emergency radio communications system has areas of little or no radio transmission coverage for law enforcement, fire, and emergency medical services. Osage County has areas of varying elevations that need additional radio signal coverage for both mobile and handheld coverage. Seek proposals from venders to solve radio signal problems in Osage County. This will include additional repeaters, installing mobile vehicle repeaters, and raising antennas at current repeater locations.	All Hazards	Emergency Management Coordinator	High	1,2,4	$100,000	Local, 911, HMGP	2 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osage County-3	Purchase and Distribute NOAA Weather Radios. There are rural areas in Osage County where residents do not have outdoor warning sirens. NOAA Weather Radios can alert residents of severe weather. Osage County Emergency Management would purchase the radios and develop a plan to distribute them and educate the public about severe weather.	Tornado, Windstorm. Winter Storm, Lightning	Emergency Management Coordinator	High	1,2	$5,000	HMGP, Local	2 years	On-going
Osage County-4	NFIP – continue compliance & adopt new floodplain ordinance. The County has been participating in the NFIP since 2005 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date. We also plan to join the Community Rating System program when it is available to Osage County.	Flood	Emergency Management Coordinator	High	1,2,3,4	Staff Time	Local, HMGP	Continuous	On-going, Continuous
Osage County-5	Buyout of flood prone property. Many habitable buildings are located in the floodplain and/or are subject to flooding. Identify habitable buildings in the floodplain and/or are subject to flooding, prioritize locations, and purchase buildings as funding becomes available.	Flood	Emergency Management Coordinator	High	1,2	Determined by market value	HMGP, CDBG	On-going	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osage County-6	Update Building code Regulations. Osage County believes in active code enforcement and follows national standards regarding all building codes. Osage County Land Use Department will review all enhancements to building codes on the national level and consider adopting those as appropriate based on the agreement of the Board of County Commissioners.	All Hazards	Emergency Management Coordinator	High	1,2,4	Staff Time	Local, Federal	On-going	On-going
Osage County-7	Acquire and install a permanently mounted emergency generator for the Osage County courthouse. The Osage County courthouse does not have backup electric power. During many types of severe weather events, power outages occur, and the County is unable to continue business operations without electric power. This loss of services can further increase the impacts of a disaster. Develop continuity of operations plans for the Osage County Courthouse and install a permanently mounted emergency generator.	Utility/ Infrastructure Failure	Emergency Management Coordinator	Medium	1,2	$25,000	Local, HMGP	2 - 3 years	New
Osage County-8	Acquire outdoor warning systems and other early warning devices for unincorporated areas such as Melvern Lake parks, Michigan Valley, & Olivet, Ks. Osage County lacks warning siren coverage in the areas of Melvern Lake parks, and unincorporated cities of Michigan Valley and Oliver, Ks. Thousands of people use the parks during tornado season. Install warning sirens and devices.	Tornado, Windstorm	Emergency Management Coordinator	Medium	1,2	$60,000	Local, HMGP	3 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osage County-9	Purchase two generators for two fire stations – one in Lyndon and one in Vassar in FD #5. Over the past several years, both fire stations and their communities (Lyndon and Vassar) have lost electric power from ice and high wind storms. The communities have been without heat from two ice storms. These two communities have a population of approximately 2500 residents. Purchase and install stand-by generators at Lyndon and Vassar Fire Stations. Then also develop a shelter plan for both stations.	Lightning, Tornado, Utility/ Infrastructure Failure, Winter Storm, Windstorm	Emergency Management Coordinator	Medium	1,2	$25,000	Local, State, Federal	1 year	On-going
Osage County-10	Education and Safety Shelters through the Osage County Health Department. The Osage County Health Department building does not have a tornado shelter. The Department will continue to educate the patrons and employees about where to go during a tornado. They would also like to continue to educate residents of Osage County about emergency plans in case of fire, flood, or tornado events. The Department will continue to distribute FEMA flyers and material at the Health Department & at the County Fair.	Terrorism/ Agri-Terrorism, Civil Disorder	Emergency Management Coordinator	Medium	1,2,3,4	$350,000	Unknown	On-going	On-going
Osage County-11	Address Scour on County bridges. Many bridges throughout the County are susceptible to scour from flooding. The risk assessment identified seven scour critical bridges. There may also be other bridges where scour is an ongoing problem. The County is responsible to maintain culverts that have a greater than 25 square foot opening on township roads.	Flood	Emergency Management Coordinator	Medium	1,2	Unknown	Local, HMGP	On-going	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Burlingame-1	Wildfire Public Education. Before peak conditions and occurrences of wildfire danger occur, homeowners living in the wildland/urban interface need to have the knowledge to prepare their homes and property to be as safe and defendable as possible. Educational workshops could be delivered for homeowners, associations and/or in rural communities to provide homeowners with property in the wildland/urban interface information on steps that they can take on their own to defend their property from wildfire. Existing programs such as the FIREWISE Communities USA program could be used to supplement local knowledge and expertise provided by the local fire departments and the Kansas Forest Service in providing the needed information at these workshops	Wildfire	City Manager	Low	3,4	$500 per workshop	KS Forest Service and Grants	Continuous	On-going, Continuous
Burlingame-2	Coordinate county and local government mitigation efforts with RECs, encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Wildfire	City Manager	Low	3,4	$30 per student per training session	KS Forest Service, State, Federal, and Grants	On-going	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Burlingame-3	Reduce hazardous fuels in prioritized wildfire risk areas. Past experience has shown that there is a threat of having wildland/urban interface (WUI) fires in the planning area. The WUI is any location where a fire can spread from vegetation (wildland fuels) to manmade (urban fuels). As part of the planning process, a wildfire hazard assessment has been conducted to begin to identify those locations that might be in need of some hazard fuel reduction work. In those areas that have been prioritized as posing a threat for wildland /urban interface fires, fuel reduction should be used to create fuel breaks between the wildland fuels and the urban environment. Methods used would consist of mechanical removal of fuel, mechanical thinning of fuel, and/or prescribed fire.	Wildfire	City Manager	Low	1,2	$85/acre	KS Forest Service, WUI Grant	On-going	On-going
Burlingame-4	Annually host a public "hazards workshop" for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Miami County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs , FEMA publications, safety tips, etc.	Flood	City Clerk	High	1,2	$500 per workshop	Local, Federal	Continuous	On-going, Continuous
Burlingame-5	Tornado Safe Rooms in future City buildings. The City has plans to review the concept of adding a tornado refuge built to FEMA standards in all new construction because of this issue.	Tornado, Windstorm	City Clerk	High	1,2	Unknown	Local, Federal	On-going	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Burlingame-6	NFIP – continue compliance. The City has been participating in the NFIP since 2003 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date.	Flood	City Clerk	High	1,2,3,4	Staff Time	None	Continuous	On-going, Continuous
Burlingame-7	Install Outdoor Warning Sirens. There are only two existing warning sirens of which are located in the SW Corner of town and near the center of town. Residents in the NW and SE sides of town have a hard time hearing the sirens. Purchase and install two new outdoor warning sirens. One on the SE side of town and one on the NW side of town.	Tornado, Windstorm	City Clerk/Building Inspector	High	1,2	$60,000	Local, HMGP	3 years upon funding availability	New
Burlingame-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	Utility/ Infrastructure Failure	City Clerk/Building Inspector	High	1,2	$40,000	Unknown	5 years	New
Burlingame-9	Bridge Replacement. The current bridge in the 300 block of N. Kansas Avenue is deteriorating and needs replaced. Rebuild a new bridge in the 300 block of N. Kansas Avenue which is within the city limits.	Utility/ Infrastructure Failure	City Clerk/Building Inspector	High	1,2	Unknown	KDA-DWR , KDEM, FEMA	2 years upon funding availability	New
Burlingame-10	Purchase new generator for lift station. We currently do not have backup for the lift station for when there is a power outage. A new gas or diesel powered generator would be installed.	Utility/ Infrastructure Failure	City Clerk/Building Inspector	High	1,2	$40,000	Unknown	5 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Burlingame-11	Support a program to replace existing overhead primary electric lines to underground. Most of our current electric lines are above ground and very susceptible to storm damage. Underground lines installed to replace existing overhead lines as funding becomes available would prevent future power outages caused by downed lines.	Utility/ Infrastructure Failure	City Clerk/Building Inspector	High	1,2	Unknown	Local, Federal	Continuous	New
Burlingame-12	Establish and maintain disaster evacuation routes. We currently do not have a designated route for evacuation. Establishing an evacuation route and then maintaining it would alleviate confusion during and after a disaster.	All Hazards	City Clerk/Building Inspector	High	1,2,3,4	Staff Time	Local, State, Federal	On-going	New
Burlingame-13	Upgrade and enhance power lines to endure ice and wind conditions. Most of our current electric lines are above ground and very susceptible to storm damage. Upgrading and enhancing the power lines as funding becomes available would prevent future power outages caused by downed lines.	Utility/ Infrastructure Failure	City Clerk/Building Inspector	High	1,2	Unknown	Local, State, Federal	On-going	New
Carbondale-1	Wildfire Public Education. Before peak wildfire conditions homeowners living in the Wildland Urban Interface (WUI) need to have the knowledge to prepare their homes and property to be safe and defendable. Educational workshops could be delivered for homeowners, associations and/or in rural communities to provide homeowners with property in the WUI information on steps that they can take on their own to defend their property from wildfire. Existing programs such as the FIREWISE Communities USA program could be used to supplement local knowledge and expertise provided by the local fire departments and the Kansas Forest Service in providing the needed information at these workshops.	Wildfire	City Administrator	Low	3,4	$500 per workshop	KS Forest Service and Grants	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Carbondale-2	Increase public and fire department training on wildland urban interface fires. Wildfires in the WUI , or any location where a fire can spread from vegetation (wildland fuels) to man-made (urban fuels) presents a unique and potentially very dangerous set of hazards to the firefighters that respond to them as well as the public that live in areas where such fires occur. Several trainings could be implemented to increase the general, tactical, and safety knowledge of anyone living in or responding to fires in the WUI. Topics from tactical decision making to assistance with pre-incident assessments of properties that may be impacted should be covered in these training sessions	Wildfire	City Administrator	Low	3,4	$30 per student per training session	KS Forest Service, State, Federal, and Grants	On-going	On-going
Carbondale-3	Reduce hazardous fuels in prioritized wildfire risk areas. Past experience has shown that there is a threat of having WUI fires in the planning area. The WUI is any location where a fire can spread from vegetation (wildland fuels) to manmade (urban fuels). As part of the planning process, a wildfire hazard assessment has been conducted to begin to identify those locations that might be in need of some hazard fuel reduction work. In those areas that have been prioritized as posing a threat for wildland /urban interface fires, fuel reduction should be used to create fuel breaks between the wildland fuels and the urban environment. Methods used would consist of mechanical removal of fuel, mechanical thinning of fuel, and/or prescribed fire.	Wildfire	City Administrator	Low	1,2	$85/acre	KS Forest Service, WUI Grant	On-going	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Carbondale-4	NFIP – continue compliance. The City has been participating in the NFIP since 2003 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date.	Flood	City Administrator	High	1,2,3,4	Staff Time	None	Continuous	On-going, Continuous
Carbondale-5	Mitigation Measures along Bury Creek. A local engineering firm has completed an assessment along Bury Creek. The Plan includes channel improvements, replacement of a culvert for the Market Street crossing which is currently a low water bridge, repair and/or replacement of Market Street bridge, and placement of guardrails on the Osage Street Bridge. These channel improvements are needed to keep the City in compliance with NFIP and not jeopardize flood rate and insurance coverage status.	Flood	City Administrator	High	1,2	103000	Local, HMGP, Grants	Within 2 years	On-going
Carbondale-6	Stormwater Management. The city has ditches and drainage to try to manage stormwater. The first two lagoon cells are filling up during excessive rain events and the City is pumping water from those lagoons over land to another lagoon to keep from overtopping. Conduct a study of the stormwater lagoons to determine the best solution. Once the best solution is identified, implement the solution. The City needs to avoid pumping rainwater over land to another lagoon.	Flood	City Administrator	High	1,2	Unknown	Local	1 year	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Carbondale-7	Public building tornado Safe Rooms The City of Carbondale currently does not have a suitable shelter for citizens to utilize in the event of severe weather. The school gym building at the high school is what is currently used. However, officials feel this shelter may not provide adequate protection. The City will consider the addition of tornado safe rooms in all future buildings built by the City. Building safe rooms in public buildings where many citizens and employees gather on a regular basis will save lives.	Tornado, Windstorm	City Administrator	High	1,2	$350,000	Local, Federal	Unknown	On-going
Carbondale-8	Install Outdoor Warning Sirens. There are only 2 existing warning sirens located in a low valley area near the center of town. Residents in the west and east sides of town cannot hear the sirens. Purchase and install 2 new outdoor warning sirens. One on the east side of town & one on the west side of town. Citizens would receive warning of imminent danger and could take shelter either in their residences or place of work.	Tornado, Windstorm	City Administrator	Medium	1,2	100000	HMGP, Grant	3 years if funding is available	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lyndon-1	Wildfire Public Education. Before peak conditions and occurrences of wildfire danger occur, homeowners living in the WUI need to have the knowledge to prepare their homes and property to be as safe and defendable as possible. Educational workshops could be delivered for homeowners, associations and/or in rural communities to provide homeowners with property in the WUI information on steps that they can take on their own to defend their property from wildfire. Existing programs such as the FIREWISE Communities USA program could be used to supplement local knowledge and expertise provided by the local fire departments and the Kansas Forest Service in providing the needed information at these workshops	Wildfire	City Manager	Low	3,4	$500 per workshop	KS Forest Service and Grants	Continuous	On-going, Continuous
Lyndon-2	Increase public and fire department training on wildland urban interface fires. Wildfires in the WUI , or any location where a fire can spread from vegetation (wildland fuels) to man-made (urban fuels) presents a unique and potentially very dangerous set of hazards to the firefighters that respond to them as well as the public that live in areas where such fires occur. Several trainings could be implemented to increase the general, tactical, and safety knowledge of anyone living in or responding to fires in the WUI. Topics from tactical decision making to assistance with pre-incident assessments of properties that may be impacted should be covered in these training sessions	Wildfire	City Manager	Low	3,4	$30 per student per training session	KS Forest Service, State, Federal, and Grants	On-going	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lyndon-3	Reduce hazardous fuels in prioritized wildfire risk areas. Past experience has shown that there is a threat of having WUI fires in the planning area. The WUI is any location where a fire can spread from vegetation (wildland fuels) to manmade (urban fuels). As part of the planning process, a wildfire hazard assessment has been conducted to begin to identify those locations that might be in need of some hazard fuel reduction work. In those areas that have been prioritized as posing a threat for wildland /urban interface fires, fuel reduction should be used to create fuel breaks between the wildland fuels and the urban environment. Methods used would consist of mechanical removal of fuel, mechanical thinning of fuel, and/or prescribed fire.	Wildfire	City Manager	Low	1,2	$85/acre	KS Forest Service, WUI Grant	On-going	On-going
Lyndon-4	Flood protection of Lyndon Community Building. The Lyndon Community Building sits in a flood zone and has flooded three times from Salt Creek expanding out of its banks. A study needs to be completed of mitigation actions for this area. Some ideas include: change the elevation of 2nd Street, divert run-off water from the open ditch, enclose the ditch, or install a flood gate. Once the best alternative is identified, apply for funding and implement solution. The City is not able to use or rent out the building when it is surrounded by floodwaters. The City would benefit from mitigating the floodwaters at this location	Flood	City Manager	High	1,2,3,4	40000	Unknown	5 years	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Lyndon-5	NFIP – Continue compliance & adopt new floodplain ordinance. The City has been participating in the NFIP since 1986 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs , which will be effective in 2009. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date. Increase residents' awareness of the floodplain and NFIP.	Flood	City Manager	High	1,2,3,4	None	None	Continuous	On-going, Continuous
Lyndon-6	Installation of generator at City Hall. City Hall and the Police Department do not have back-up power when there is an electrical outage. A gas or diesel powered generator would be installed at City Hall. City Hall and the Police Department would be able to operate during times of power outages and provide shelter to residents.	Lightning, Tornado, Utility/ Infrastructure Failure, Winter Storm, Windstorm	City Manager	Medium	1,2	9000	Local, KDEM, FEMA	5 years	On-going
Lyndon-7	Install new outdoor warning siren in Jones Park. The school district campus and residents at the east half of Lyndon do not hear the current tornado sirens. A second outdoor siren would be installed in the Jones Ball Field area. The early warning capabilities to the east side of Lyndon would affect 500 lives and would be doubled if school is in session.	Tornado, Windstorm	City Manager	Medium	1,2	1500	Local, KDEM, FEMA	5 years	Completed

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Melvern-1	Wildfire Public Education. Before peak conditions and occurrences of wildfire danger occur, homeowners living in the WUI need to have the knowledge to prepare their homes and property to be as safe and defendable as possible. Educational workshops could be delivered for homeowners, associations and/or in rural communities to provide homeowners with property in the WUI information on steps that they can take on their own to defend their property from wildfire. Existing programs such as the FIREWISE Communities USA program could be used to supplement local knowledge and expertise provided by the local fire departments and the Kansas Forest Service in providing the needed information at these workshops	Wildfire	City Manager	Low	3,4	$500 per workshop	KS Forest Service and Grants	Continuous	On-going, Continuous
Melvern-2	Increase public and fire department training on wildland urban interface fires. Wildfires in the WUI , or any location where a fire can spread from vegetation (wildland fuels) to man-made (urban fuels) presents a unique and potentially very dangerous set of hazards to the firefighters that respond to them as well as the public that live in areas where such fires occur. Several trainings could be implemented to increase the general, tactical, and safety knowledge of anyone living in or responding to fires in the WUI. Topics from tactical decision making to assistance with pre-incident assessments of properties that may be impacted should be covered in these training sessions	Wildfire	City Manager	Low	3,4	$30 per student per training session	KS Forest Service, State, Federal, and Grants	On-going	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Melvern-3	Reduce hazardous fuels in prioritized wildfire risk areas. Past experience has shown that there is a threat of having WUI fires in the planning area. The WUI is any location where a fire can spread from vegetation (wildland fuels) to manmade (urban fuels). As part of the planning process, a wildfire hazard assessment has been conducted to begin to identify those locations that might be in need of some hazard fuel reduction work. In those areas that have been prioritized as posing a threat for wildland /urban interface fires, fuel reduction should be used to create fuel breaks between the wildland fuels and the urban environment. Methods used would consist of mechanical removal of fuel, mechanical thinning of fuel, and/or prescribed fire.	Wildfire	City Manager	Low	1,2	$85/acre	KS Forest Service, WUI Grant	On-going	On-going
Melvern-4	Purchase & Install outdoor tornado warning sirens. The City has very little outdoor warning system coverage. The current warning system has gone back & only provides coverage for a small portion of the City Purchase and Install new outdoor Tornado Warning Siren. Avoid injury or loss of life by providing warning of imminent danger to residents.	Tornado, Windstorm	City Manager	High	1,2	50000	Local, State, Federal	2 years if funds are available	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Melvern-5	Purchase NOAA weather radios for citizens. In general, residents do not have enough information and warning of severe weather. Local TV and radio broadcasts are 5 miles away in Topeka do not cover the city area very well. There is a need to ensure the citizens are adequately informed of threatening weather. This action could be implemented by holding a community meeting informing citizens about severe weather procedures. If funding is available, each citizen could be provided with a NOAA weather radio. In addition, residents new to the city could be provided with a NOAA weather radio.	All Hazards	City Manager	High	1,2	$25 x 205 households	HMGP	1 year after funds are secured	On-going
Melvern-6	Construct Tornado safe rooms in new city own buildings. Kansas was the highest rated state for the number of tornadoes in 2008 at 187 which is 128 above the 1950-2008 average of 59. In addition, the area is often battered by high wind events that cause extensive damage. The City will review the concept of adding a tornado refuge built to FEMA standards in all new construction because of this issue. The City of Melvern will review all future building plans and review the ability to add a safe room for citizens and employees in buildings such as libraries, public safety buildings, general use buildings and other buildings as appropriate. They will seek federal funding to assist with the building of the safe room. Reduction in loss of life and injuries. Citizens will have the option of moving to a safe location during an event.	Tornado, Windstorm	City Manager	Medium	1,2	$250,000 per shelter	HMGP	2 - 8 years	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osage-1	Wildfire Public Education. Before peak conditions and occurrences of wildfire danger occur, homeowners living in the WUI need to have the knowledge to prepare their homes and property to be as safe and defendable as possible. Educational workshops could be delivered for homeowners, associations and/or in rural communities to provide homeowners with property in the WUI information on steps that they can take on their own to defend their property from wildfire. Existing programs such as the FIREWISE Communities USA program could be used to supplement local knowledge and expertise provided by the local fire departments and the Kansas Forest Service in providing the needed information at these workshops	Wildfire	City Manager	Low	3,4	$500 per workshop	KS Forest Service and Grants	Continuous	On-going, Continuous
Osage-2	Increase public and fire department training on wildland urban interface fires. Wildfires in the WUI , or any location where a fire can spread from vegetation (wildland fuels) to man-made (urban fuels) presents a unique and potentially very dangerous set of hazards to the firefighters that respond to them as well as the public that live in areas where such fires occur. Several trainings could be implemented to increase the general, tactical, and safety knowledge of anyone living in or responding to fires in the WUI. Topics from tactical decision making to assistance with pre-incident assessments of properties that may be impacted should be covered in these training sessions	Wildfire	City Manager	Low	3,4	$30 per student per training session	KS Forest Service, State, Federal, and Grants	On-going	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osage-3	Reduce hazardous fuels in prioritized wildfire risk areas. Past experience has shown that there is a threat of having WUI fires in the planning area. The WUI is any location where a fire can spread from vegetation (wildland fuels) to manmade (urban fuels). As part of the planning process, a wildfire hazard assessment has been conducted to begin to identify those locations that might be in need of some hazard fuel reduction work. In those areas that have been prioritized as posing a threat for wildland /urban interface fires, fuel reduction should be used to create fuel breaks between the wildland fuels and the urban environment. Methods used would consist of mechanical removal of fuel, mechanical thinning of fuel, and/or prescribed fire.	Wildfire	City Manager	Low	1,2	$85/acre	KS Forest Service, WUI Grant	On-going	On-going
Osage-4	Emergency Management Alert System. The City currently has five outdoor warning sirens but the northwest side and southwest side of town can't hear the sirens. There are no public shelters in the City. The City would like to purchase an outdoor Emergency Alert Systems. It would have voice activation capabilities to notify residents of all kinds of hazards. For example, to notify concerning a rail derailment hazard at one of the 11 railroad crossings in town. Avoid injury or loss of life by providing warning of danger to residents.	All Hazards	City Manager	High	1,2	100000	HMGP, FEMA	5 years	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osage-5	Floodgate Sign. The spillway of the Osage City Lake cannot handle heavy rain events and floodwaters cover the road below the spillway. The City would like to have a swinging gate for the road in flooding times to prevent people from walking & driving through the area. Avoid injury by having a permanent swinging gate to warn people of the floodwater danger.	Flood	City Manager	Medium	1,2	Unknown	HMGP, Other as identified	1 - 5 years	On-going
Overbrook-1	Wildfire Public Education. Before peak conditions and occurrences of wildfire danger occur, homeowners living in the WUI need to have the knowledge to prepare their homes and property to be as safe and defendable as possible. Educational workshops could be delivered for homeowners, associations and/or in rural communities to provide homeowners with property in the WUI information on steps that they can take on their own to defend their property from wildfire. Existing programs such as the FIREWISE Communities USA program could be used to supplement local knowledge and expertise provided by the local fire departments and the Kansas Forest Service in providing the needed information at these workshops	Wildfire	City Manager	Low	3,4	$500 per workshop	KS Forest Service and Grants	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Overbrook-2	Increase public and fire department training on wildland urban interface fires. Wildfires in the WUI , or any location where a fire can spread from vegetation (wildland fuels) to man-made (urban fuels) presents a unique and potentially very dangerous set of hazards to the firefighters that respond to them as well as the public that live in areas where such fires occur. Several trainings could be implemented to increase the general, tactical, and safety knowledge of anyone living in or responding to fires in the WUI. Topics from tactical decision making to assistance with pre-incident assessments of properties that may be impacted should be covered in these training sessions	Wildfire	City Manager	Low	3,4	$30 per student per training session	KS Forest Service, State, Federal, and Grants	On-going	On-going
Overbrook-3	Reduce hazardous fuels in prioritized wildfire risk areas. Past experience has shown that there is a threat of having WUI fires in the planning area. The WUI is any location where a fire can spread from vegetation (wildland fuels) to manmade (urban fuels). As part of the planning process, a wildfire hazard assessment has been conducted to begin to identify those locations that might be in need of some hazard fuel reduction work. In those areas that have been prioritized as posing a threat for wildland /urban interface fires, fuel reduction should be used to create fuel breaks between the wildland fuels and the urban environment. Methods used would consist of mechanical removal of fuel, mechanical thinning of fuel, and/or prescribed fire.	Wildfire	City Manager	Low	1,2	$85/acre	KS Forest Service, WUI Grant	On-going	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Overbrook-4	NFIP – continue compliance. The City has been participating in the NFIP since 2008 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs , which will be effective in 2009. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date. Increase residents' awareness of the floodplain and NFIP.	Flood	City Clerk	High	1,2,3,4	Staff Time	None	Continuous	On-going, Continuous
Overbrook-5	Enhance Outdoor Warning sirens. The City of Overbrook has not enhanced their outdoor warning sirens as parts of the City & County developed. Thus the residents north of Hwy56 cannot hear the current sirens. Purchase and install a new outdoor warning siren for the residents north of Hwy 56. Citizens would receive warning of imminent danger and could take shelter either in their residences, place of work, or one of the existing community shelters that are presently available.	Tornado, Windstorm	City Clerk	Medium	1,2	50000	FEMA HMGP, Grants	1 year	On-going
Overbrook-6	Create additional acceptable community storm shelters for residents at ball diamond/fairgrounds. Current shelters limited to concrete block bathrooms @ concession stand. We will integrate safe rooms when updating concession stands.	Tornado, Windstorm	City Clerk	Low	1,2	30000	Local, Grants	10 years	New
Overbrook-7	Identify and seek additional methods of financial and technical assistance for hazard mitigation projects. We have not budgeted for addressing our hazard mitigation needs. Budget consideration by council.	All Hazards	City Clerk	High	1,2,4	3000	Unknown	Continuous	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Overbrook-8	Develop and implement a local hazard training plan. We have not budgeted for hazard mitigation training. Investigate training available and find out costs.	All Hazards	City Clerk	High	1,2,3,4	800	Unknown	1 year	New
Overbrook-9	Acquire a permanent back-up generator for the city. Backup for wells and 2 lift stations.	Utility/ Infrastructure Failure	City Clerk	Medium	1,2	$15,000 - $20,000	Local, Grants	1 year	New
Overbrook-10	Create a storm shelter/saferoom at the Overbrook Attendance Center or new library. School also does not have a safe room and is a possibility. Plan location, determine requirements, involve community, and construct safe room.	Tornado, Windstorm	Superintendent of Schools	Low	1,2	200000	Local, Grants	5 years	New
Overbrook-11	Upgrade/Expand/Improve stormwater management systems. Overbrook has very little curb and gutter presence. We would like to design plan for town and implement over time.	Flood, Soil Erosion	City Clerk	High	1,2,4	$2,000 for plan	Local	20 years	New
Overbrook-12	Conduct regular dam maintenance. We have a high hazard dam near 56 hwy. We will have to hire an inspector every 3 years and take other preventative measures taken during the intervening years.	Dam and Levee Failure	City Clerk	Medium	1,2	$4,000 every 3 years	Unknown	Continuous	New
Overbrook-13	Improve coordination, planning, and investment in long-term water supplies to meet demands of ongoing growth and development. Assess vulnerability of critical infrastructure and lifeline utilities, including water distribution systems, to identify and prioritize projects for risk reduction. Our water infrastructure is aging and we have a high # of dead-end lines. Two of our wells have a higher iron content. Sewer rehab has been very successful in reduction of iron and meeting goals. We plan for major water system improvements in the next 8 years.	Utility/ Infrastructure Failure	City Clerk	High	4	Unknown	Unknown	8 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Overbrook-14	Enhance existing GIS program to improve capabilities in mitigation, preparedness, and response for all hazards. As projects are completed make sure work is added to GIS system.	Utility/ Infrastructure Failure	City Clerk	Low	1,2,4	$750 per year	Unknown	Continuous	New
Overbrook-15	Improve lighting and traffic controls at critical intersections and roadways to improve safety during events. We would also like to upgrade school crossings. Our crossings light system is outdated and we need crosswalks downtown. We would like to work with KDOT and engineer to evaluate options and come up with a solution.	Utility/ Infrastructure Failure	City Clerk	High	1,2	30000	Local, Grants	3 years	New
Overbrook-16	Continue and enhance housing rehabilitation program. We have not given our residents help in this area and while we have implemented a code compliance. We need to investigate what other communities have done and make an application for a grant to rectify this.	Utility/ Infrastructure Failure	City Clerk	Medium	1,2	25000	Grant	6 years	New
Overbrook-17	Provide educational materials about natural hazards and risks. We already send a monthly newsletter. This is a natural extension to what we are doing and will help keep our community further informed. We would like to secure up-to-date information and distribute in a timely fashion.	All Hazards	City Clerk	High	3,4	$75 per year	Local	Continuous	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Quenemo-1	Wildfire Public Education. Before peak conditions and occurrences of wildfire danger occur, homeowners living in the WUI need to have the knowledge to prepare their homes and property to be as safe and defendable as possible. Educational workshops could be delivered for homeowners, associations and/or in rural communities to provide homeowners with property in the WUI information on steps that they can take on their own to defend their property from wildfire. Existing programs such as the FIREWISE Communities USA program could be used to supplement local knowledge and expertise provided by the local fire departments and the Kansas Forest Service in providing the needed information at these workshops	Wildfire	City Clerk	Low	3,4	$500 per workshop	KS Forest Service and Grants	Continuous	On-going, Continuous
Quenemo-2	Increase public and fire department training on wildland urban interface fires. Wildfires in the WUI , or any location where a fire can spread from vegetation (wildland fuels) to man-made (urban fuels) presents a unique and potentially very dangerous set of hazards to the firefighters that respond to them as well as the public that live in areas where such fires occur. Several trainings could be implemented to increase the general, tactical, and safety knowledge of anyone living in or responding to fires in the WUI. Topics from tactical decision making to assistance with pre-incident assessments of properties that may be impacted should be covered in these training sessions	Utility/ Infrastructure Failure	City Clerk	Low	3,4	$30 per student per training session	KS Forest Service, State, Federal, and Grants	On-going	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Quenemo-3	Reduce hazardous fuels in prioritized wildfire risk areas. Past experience has shown that there is a threat of having wildland /urban interface fires fires in the planning area. As part of the planning process, a wildfire hazard assessment has been conducted to begin to identify those locations that might be in need of some hazard fuel reduction work. In those areas that have been prioritized as posing a threat for wildland /urban interface fires, fuel reduction should be used to create fuel breaks between the wildland fuels and the urban environment. Methods used would consist of mechanical removal of fuel, mechanical thinning of fuel, and/or prescribed fire.	Wildfire	City Clerk	Low	1,2	$85/acre	KS Forest Service, WUI Grant	On-going	On-going
Quenemo-4	NFIP – Continue Compliance & adopt new floodplain ordinance. The City of Quenemo has a large portion of the City in a floodplain and now the new maps include an even larger portion of the City. Approximately, 70% of Quenemo will be in a floodplain. Approximately, 70% of Quenemo will be in a floodplain. Plan for Implementation and Administration: 1. Continue to educate residents about the floodplain and NFIP, 2. Serve as a resource for residents with questions, 3. Hold Town Hall meeting to inform "new" residents that they will now be in the floodplain., 4. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date. Increase residents' awareness of the floodplain and NFIP.	Flood	City Clerk	High	1,2,3,4	Staff Time	None	Continuous	On-going, Continuous
Quenemo-5	Purchase and installation of outdoor tornado warning sirens.	Tornado	City Manager and City Council	High	1,2	$20,000	Local and HMGP	Within 1 year of funding	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Scranton-1	Wildfire Public Education. Before peak conditions and occurrences of wildfire danger occur, homeowners living in the WUI need to have the knowledge to prepare their homes and property to be as safe and defendable as possible. Educational workshops could be delivered for homeowners, associations and/or in rural communities to provide homeowners with property in the WUI information on steps that they can take on their own to defend their property from wildfire. Existing programs such as the FIREWISE Communities USA program could be used to supplement local knowledge and expertise provided by the local fire departments and the Kansas Forest Service in providing the needed information at these workshops	Wildfire	Fire Chief	Low	3,4	$500 per workshop	KS Forest Service and Grants	Continuous	On-going, Continuous
Scranton-2	Increase public and fire department training on wildland urban interface fires. Wildfires in the WUI , or any location where a fire can spread from vegetation (wildland fuels) to man-made (urban fuels) presents a unique and potentially very dangerous set of hazards to the firefighters that respond to them as well as the public that live in areas where such fires occur. Several trainings could be implemented to increase the general, tactical, and safety knowledge of anyone living in or responding to fires in the WUI. Topics from tactical decision making to assistance with pre-incident assessments of properties that may be impacted should be covered in these training sessions	Wildfire	Fire Chief	Low	3,4	$30 per student per training session	KS Forest Service, State, Federal, and Grants	On-going	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Scranton-3	Reduce hazardous fuels in prioritized wildfire risk areas. Past experience has shown that there is a threat of having WUI fires in the planning area. The WUI is any location where a fire can spread from vegetation (wildland fuels) to manmade (urban fuels). As part of the planning process, a wildfire hazard assessment has been conducted to begin to identify those locations that might be in need of some hazard fuel reduction work. In those areas that have been prioritized as posing a threat for wildland /urban interface fires, fuel reduction should be used to create fuel breaks between the wildland fuels and the urban environment. Methods used would consist of mechanical removal of fuel, mechanical thinning of fuel, and/or prescribed fire.	Wildfire	Fire Chief	Low	1,2	$85/acre	KS Forest Service, WUI Grant	On-going	On-going
Scranton-4	NFIP – continue compliance & adopt new floodplain ordinance. The City has been participating in the NFIP since 1984 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs , which will be effective in 2009. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date. Increase residents' awareness of the floodplain and NFIP.	Flood	City Manager	High	1,2,3,4	Staff Time	None	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Scranton-5	Promote NOAA Weather Radios. In general, residents do not have enough information and warning of severe weather. Local TV and radio broadcasts are 15 miles away in Topeka do not cover the city area very well. There is a need to ensure the citizens are adequately informed of threatening weather. This action could be implemented by holding a community meeting informing citizens about severe weather procedures. If funding is available, each citizen could be provided with a NOAA weather radio. In addition, residents new to the city could be provided with a NOAA weather radio.	Flood, Hail, Lightning, tornado, wildfire, Windstorm, Winter Storm	City Manager	High	1,2	8750	HMGP	1 year after funds are secured	On-going
Scranton-6	Build New Fire Station & Public Safety Building with Tornado Safe room. The Scranton Fire House is outdated and does not have the capability to hold a new fire response truck. Their only truck is a 1972 pumper truck. So they have to upgrade their Fire House before the City can invest into a newer truck. Build a new Fire House and Public Safety Building for the City and include a new tornado safe room to FEMA's construction standards. Injury and loss of life could be avoided	Extreme Temperatures , Wildfire, Tornado, Windstorm	City Manager	High	1,2	Unknown	Local, HMGP, Grants	Unknown	On-going
Scranton-7	Three or Four New Bridges are needed. In rain events the low bridges and small culverts are trapping the water and preventing the storm waters from getting out of town. Rebuild new bridges in three or four locations within the City. Prevent water standing in town.	Flood	City Manager	High	1,2	Unknown	Local, HMGP, Grants	2 years after funds are available	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Scranton-8	Purchase & install new outdoor warning siren. The City of Scranton does not have outdoor warning coverage on the east side of town. Purchase and install a new outdoor warning siren for the residents on the east side of town. Citizens would receive warning of imminent danger and could take shelter either in their residences or place of work.	Tornado, Windstorm	City Manager	Medium	1,2	50000	HMGP, Grant	1 year after funds are secured	On-going
FD#6-1	Purchase generator for fire station. Kansas was the highest rated state for tornadoes in 2008 with 168 tornadoes. In addition, the area is often battered by high winds that cause extensive damage. The city has plans to review the concept of adding a tornado safe rooms built to FEMA standards in all new construction because of this issue. A new diesel powered generator would be purchased for the fire station.	Utility/ Infrastructure Failure	Training and Safety Officer	High	1,2	25000	Local, State, Federal	5 years	New
FD#6-2	Tornado safe room in all Fire District Buildings. . Kansas was the highest rated state for tornadoes in 2008 with 168 tornadoes. In addition, the area is often battered by high winds that cause extensive damage. The city has plans to review the concept of adding a tornado safe rooms built to FEMA standards in all new construction because of this issue. The fire district will consider the addition of tornado safe rooms in all buildings and construct upon funding.	Tornado, Windstorm	Training and Safety Officer	High	1,2	Unknown	Local, State, Federal	5 years	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD420-1	Tornado safe room. USD 420 is currently undertaking a facility study of the elementary building that was built in the 1950's. This includes a community task force in cooperative with the district architect. The plan would involve working with the district architect to develop a "hardened area", wind resistance doors, and reinforced shelter in new construction and renovating existing schools for tornado shelter. Immediate cost benefit since purpose is to provide a safe shelter for students and staff.	Tornado, Windstorm	Superintendent	High	1,2	Unknown	Bond	2014	On-going
USD421-1	Tornado Safe Room and public shelter. There is insufficient and in some locations no, safe room space for students, patrons, visitors, and staff on school property or at school activities at Jones Park. The district has sought grants to fund needed improvements, but to this point we have not been successful. We are in the preliminary stages of studying a building project. If a project comes to fruition, safe rooms and a shelter at Jones Park should be part of the project.	Tornado, Windstorm	Superintendent	High	1,2	$1M minimum	HMGP and USD421 budget	Dependent upon funding	On-going
USD434-1	Tornado safe room. USD 434 Santa Fe Trail School District will consider the incorporation of tornado safe rooms when designing new school buildings and/or when adding on or remodeling existing buildings. USD 434 is among the cooperating school districts new undertaking a study of tornado safety shelters for KSDE. This action plan shows intent to follow up on this study to provide safe rooms where current shelter areas are lacking. Immediate cost benefit since purpose is to provide a safe shelter for students and staff.	Tornado, Windstorm	Superintendent	High	1,2	Unknown	HMGP and USD434 budget	Unknown	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD434-2	Supporting Vulnerable Populations during Emergency Events. With the constructing two Monolithic Domes that will qualify for FEMA approval at the high school the Santa Fe Trail, USD 434, is in position to help with Osage County emergency situations. With the construction of these FEMA approved domes, the school district can play a bigger role in planning for emergency events. The Santa Fe Trail School, USD 434, along with Osage Co. Emergency Management Coordinator will establish the use of the high school in emergency planning activities for, but not limited to, Northern Osage County. The school district will make available their building of the school district for any emergency situation that will arise.	All Hazards	Superintendent	Medium	1,2	Unknown	Unknown	Unknown	New
USD434-3	Safe Room. Santa Fe Trail, USD 434 is the process of constructing two Monolithic Domes that could qualify for FEMA approval at the high school. However there are three other buildings in the district that won't have this type of protection. Consideration of installing safe rooms will be incorporated when adding onto these school buildings. As revenue becomes available, Santa Fe Trail, USD 434 will explore the opportunity to invest in the construction of building safe rooms. Santa Fe Trail USD 434 will continue to explore options through KSDE and other state agencies in procuring funds to address additional safe rooms for its school buildings.	Tornado, Windstorm	Superintendent	Medium	1,2	Unknown	HMGP, Local	Unknown	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD454-1	Tornado safe room. Tornado shelters are a key item that would be incorporated into any new building project in the district. Also USD 454 is among the cooperating school districts new undertaking a study of tornado safety shelters for KSDE. This action plan shows intent to follow up on this study to provide safe rooms where current shelter areas are lacking. . If expansion occurs, they would work with the Community College and architects to develop a "hardened area" shelter for individuals in district owned facilities. Immediate cost benefit since purpose is to provide a safe shelter for students and staff.	Tornado, Windstorm	Superintendent of Schools	High	1,2	Unknown	HMGP, USD 454 Budget	5 years	On-going
USD454-2	Supporting Vulnerable Populations during emergency events. USD 454 has the facilities to help with any Osage Co. emergency situation. The school is able to play a role whatever way they can in emergency events. Burlingame Schools, USD 454 along with Osage Co. Emergency Management Coordinator will establish the use of the school for emergency planning activities for, but not limited to Northwestern Osage County. The district will make available their buildings for any emergency situation that may arise.	All Hazards	Superintendent of Schools	Medium	1,2,4	Unknown	Local	Continuous	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD456-1	Tornado safe room. USD 456 District will consider the incorporation of tornado safe rooms when designing new school buildings and/or when adding on or remodeling existing buildings. USD 456 is among the cooperating school districts new undertaking a study of tornado safety shelters for KSDE. This action plan shows intent to follow up on this study to provide safe rooms where current shelter areas are lacking. Immediate cost benefit since purpose is to provide a safe shelter for students and staff.	Tornado, Windstorm	Superintendent of Schools	High	1,2	Unknown	HMGP, USD456 Budget	Unknown	On-going
USD456-2	Tornado Safe Rooms. We have two attendance centers in USD 456. Marais des Cygnes Valley Elementary School is located in Quenemo and Marais des Cygnes Valley JH/HS is located in Melvern. Neither building has FEMA approved safe rooms. Consideration of installing safe rooms will be incorporated into these school buildings. As revenue becomes available, Marais des Cygnes Valley, USD 456, will explore the opportunity to invest in the construction of building safe rooms. We will continue to explore options through Kansas State Department of Education and other State agencies in obtaining funds to address the need for safe rooms in our buildings.	Tornado, Windstorm	Superintendent	Medium	1,2	Unknown	HMGP, Local	Unknown	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Three Lakes Educational Coop-1	Tornado safe room. Three Lakes Educational Cooperative will consider the incorporation of tornado safe rooms when designing new school buildings and/or when adding on or remodeling existing buildings. TLEC is among the cooperating school districts new undertaking a study of tornado safety shelters for KSDE. This action plan shows intent to follow up on this study to provide safe rooms where current shelter areas are lacking. Immediate cost benefit since purpose is to provide a safe shelter for students and staff.	Tornado, Windstorm	Director of Special Education	High	1,2	Unknown	HMGP and TLEC	Unknown	On-going
Three Lakes Educational Coop-2	Three Lakes Educational Cooperative buildings do not have safe rooms for students and staff. As revenue becomes available, Three Lakes Educational Cooperative (TLEC), interlocal 620, will explore the opportunity to invest in the construction of building safe rooms. TLEC will continue to explore options through KSDE and other state agencies in procuring funds to address additional safe rooms for its buildings. Upon funding – construct safe rooms.	Tornado, Windstorm	Director of Special Education	Medium	1,2	Unknown	HMGP, Local	Unknown	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Three Lakes Educational Coop-3	Audio Visual emergency communication and notification systems. Three Lakes Educational Cooperative buildings do not have audio and visual emergency communication and notification systems for interior and exterior of school buildings and grounds. Osage Co. is located where there is concern for a tornado or high winds. As revenue becomes available, Three Lakes Educational Cooperative interlocal 620, will explore the opportunity to acquire audio and visual emergency communication and notification systems. TLEC will continue to explore options through KSDE and other state agencies in procuring funds to address additional safe rooms for its buildings.	All Hazards	Director of Special Education	Medium	1,2	Unknown	HMGP, Local	Unknown	New
Osage Water Dist#3-1	Purchase back-up generators. Water District #3 already has purchased one large back-up generator for the water plant and is in the process of getting it installed. Another, smaller back-up generator is needed to run the intact pump at Lake Pomona when power is out. Thus both back-up generators are needed for the water operations to continue. Purchase a smaller back-up generator to run the intact pump at Lake Pomona. To keep water processing in the event of power outages.	Flood, Utility/ Infrastructure Failure	District Secretary	High	1,2	50000	KDEM, FEMA	1 year after funds are secured	On-going
Osage Water Dist#3-2	GPS Handheld Units. Osage County Water District #3 has GPS mapped their water lines and meters. But they do not have the GPS tools to find their water lines. The current employees know the location of water lines in their district, but new employees will not have that knowledge. Purchase 2 GPS Handheld Units Ability for new employees to find satellite-identified water lines and meters.	Flood, Utility/ Infrastructure Failure	District Secretary	High	1,2	3000	Unknown	1 year after funds are secured	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osage Water Dist#3-3	1.Sell current portable generator and purchase another one that is larger. Medium 2.Construct suitable pad (for above generator) at the intake structure complete with propane tank. Medium 3.Continue with the Zebra mussel project. High 4.We have removed purchasing remote read meters from our actions on the 2009 plan. 5.Have not yet purchased field radios. Low 1.The generator purchased for the intake pumps does not produce enough to safely run the pumps. 2.The above generator should be permanently mounted at the intake structure to prevent issues transporting it to the site during inclement weather. A propane tank will supply fuel needs, as opposed to hauling fuel in during inclement weather. 3.Zebra mussels were responsible for major water supply problems in area lakes. We have no other water supply available if an infestation occurs in Pomona Lake. Therefore, it is imperative we are proactive in our approach to protect our water source. Very high priority. 5. With field radios our operators could communicate in the field even when wireless devices are inoperable. 2 We will contract a professional to determine exactly what size and type of generator to purchase for the intake structure and proper installation, and how to retrofit it to use liquid propane fuel. 3.Regarding the Zebra mussel issue, we have contracted Bartlett & West Engineers to design a system that can be installed in current facilities to prevent blockage to our intake and processing systems. 5. Need to research current radios available.	Utility/ Infrastructure Failure	District Secretary	High	1,2	(2) $25,000 - $30,000 (3) $55,000 - $65,000 (5) Under $500	Unknown	2014 or later	New

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Osage Water Dist#3-4	Purchasing Radio Red Monitors. Currently, when there has been a heavy rain in the area, the monitoring wells fill up pretty quickly with water and the usage amount cannot be read. Then the Water District employee pumps the water from the well before reading the usage amount. There are 438 meter wells in the District & this is a time consuming activity. The plan is to purchase Radio Read Monitors that would be installed on each monitoring well. Then the employee would drive by, gather the data by monitoring tools and then input the data into computer software back in the office. Then they know how much to charge their customers for water usage. Ability to read meters even after heavy rains. Ability to find meters situated in brushy areas.	Flood, Winter Storm	District Secretary	Medium	1,2	$86,000 (half of need)	Unknown	2 years after funds are available	On-going
Lyon-Coffey Electric Coop - 1	Replace copper weld wire spans and poles to current National Electric Codes and Standards – Osage County. On a continuing basis Lyon-Coffey Electric Cooperative, Inc. systematically is upgrading and replacing poles and wire through the territory. During recent winter storms, the areas most adversely affected were those with the copper weld wire. In the event of damage where mitigation would be needed, a survey would be conducted to determine the service area remaining that is served by copper weld wire. The line would be evaluated by qualified engineer to determine damage. Upon evaluation then a defined work plan could be initiated. Reduction of power outages including service to homes, businesses, rural water districts and pipeline infrastructure.	Tornado, Windstorm Winter Storm	District Secretary	High	1,2	7750000	Rural Utilities Service, FEMA HMGP	36 months	On-going

5.6.7 SHAWNEE COUNTY

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-1	Shawnee County is committed to continued voluntary participation and compliance with the NFIP. TA benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	Emergency Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
Shawnee County-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	Emergency Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year. Shawnee County, including the cities of Auburn, Rossville, Silver Lake, Topeka, and Willard participate in the NFIP. There are currently 949 policies in effect, with a total coverage amount of $144,838,400. Since the jurisdictions joined the program, there have been 250 claims paid for a total loss paid amount of $2,977,231. (Source: FEMA, 2008). NFIP flood insurance policies protect property owners by offering affordable rates for protecting both structures and contents.	Flood	Emergency Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous
Shawnee County-4	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited government offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	Emergency Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Shawnee County-5	Coordinate county and local government mitigation efforts with RECs , encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	Emergency Manager	Medium	4	Staff Time	Local	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-6	Annually host a public "hazards workshop" for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Shawnee County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs, FEMA publications, safety tips, etc.	All Hazards	Emergency Manager	Medium	3,4	$1000 per workshop	Local	Continuous	On-going, Continuous
Shawnee County-7	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	Emergency Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Shawnee County-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost.	Winter Storm	Emergency Manager	Medium	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. Shawnee is an urban county, but maintains an agricultural base. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism, Civil Disorder	Emergency Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Shawnee County-10	Form a planning committee to develop an annex to the LEOP for dam/levee failure response and evacuation plans for high hazard dams/levees in Shawnee County. Shawnee County has 664 dams that are regulated by the KDA-DWR. Seven of these structures are classified as "High Hazard Class C" structures, identified as follows: Lake Shawnee; Burnett Dam; Lake Sherwood; Unnamed Dam (City of Topeka); Biddle Creek Detention Dam; Westridge Detention Dam; Dam #131. The State evaluation of the dams is based on several factors including: location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe. A dam's hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing for a potential emergency is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Terrorism/ Agri-Terrorism, Civil Disorder	Emergency Manager	High	1,2,4	Staff Time	Local	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-11	Consider forming a coordinating entity to accumulate and consolidate all types of data for levees in Shawnee County and its jurisdictions. Early in the implementation of Flood Map Modernization (Map Mod), the FEMA recognized that the role of levees in flood risk reduction would be an important part of the efforts of Map Mod. Further, it was acknowledged that the condition of levees had not been assessed since they were originally mapped as providing base (1-percent-annual-chance) flood protection. Because of this, FEMA initiated a revised process to gain a better understanding of the actual flood risks for those citizens living and working behind levees nationwide. Often, documentation regarding levee design, accreditation, and the impacts on flood hazard mapping is outdated or missing altogether. Identifying levee owners and developing initiatives for certifying levees may help reduce overall risk to life and property in the community.	Dam and Levee Failure	Emergency Manager	High	1,2,4	Staff Time	Local, State, Federal	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-12	Based on collection of consolidated data for levees, develop a plan that provides guidance for future maintenance, reconstruction, and PM 43 compliance issues for all levee systems in Shawnee County. Levee owners or communities have the responsibility to provide documentation that a levee meets the requirements of Title 44 of the CFR, Section 65.10 of the national Flood Insurance Program regulations (44CFR Section 65.10), as part of a study/mapping project. Without the required documentation necessary to comply with 44 CFR Section 65.10, the area behind the levee will be re-delineated and mapped as SFHA on the DFIRM. Procedure Memorandum No. 34 allows for the issuance of a deadline to the community for submitting the required documents.	Dam and Levee Failure	Emergency Manager	High	1,2,4	Staff Time	Local, State, Federal	12/31/2014	On-going
Shawnee County-13	Develop a program to acquire and preserve parcels of land subject to repetitive flooding from willing and voluntary property owners. Land acquisition is an effective mitigation technique to permanently eliminate the potential for damages from future flood events. Shawnee County can apply for grant funding to acquire flood-prone parcels of land from voluntary and willing property owners.	Flood	Emergency Manager	Medium	1,2	Staff Time, dependent upon fair market value	Local, State, Federal	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-14	Regularly calculate and document the amount of flood prone property that is preserved as open space to reduce flood insurance burden to the county. CRS credit is given for areas that are permanently preserved as open space. Although credit is not given for federal lands, The jurisdiction maintains and continues to expand floodplain areas preserved as open space through wetlands restoration and other projects. The jurisdiction also has floodplain land within state parks or otherwise preserved as wildlife and natural preserves, which does qualify for additional CRS credit.	Flood	Emergency Manager	High	1,2	Staff Time	NA	Continuous	On-going, Continuous
Shawnee County-15	Appoint a planning committee to identify flash-flood prone areas to recommend flood reduction measures to county planners. Flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Flood	Emergency Manager	Medium	1,2,4	Staff Time	Local	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-16	Develop and amend the Flood Damage Prevention Ordinance to include a "no-rise (in base flood elevation)" clause for the county. Many floodplain permitting systems, including those that meet National Flood Insurance Program standards, allow projects outside the floodway to increase base flood elevations by up to one foot. While this may not represent a significant increase for just one project, the cumulative impact of a number of projects in the same floodplain can be significant. By prohibiting any rise throughout the 100-year floodplain, a "no rise" clause ensures that the cumulative impact of multiple permitted projects will not cause flood elevations to rise to unacceptable levels.	Flood	Emergency Manager	Medium	1,2	Staff Time	Local	12/31/2014	On-going
Shawnee County-17	Research and design an appropriate stream buffer ordinance to further protect the jurisdiction's water resources and to limit future flood damages adjacent to major waterways. Riparian buffers serve as natural boundaries between local waterways and existing development and help protect resources by filtering pollutants, providing flood control, alleviating streambank erosion, mitigating stream warming, and providing room for lateral movement of the stream channel. Buffer widths can vary greatly depending upon stream channel size and the intended purpose of the buffer, but 50-100 feet is generally considered to be sufficient for purposes of bank stabilization and sediment control and up to 200 feet for flood control purposes. Special consideration should be given to exempting Shawnee County's agricultural operations from buffer regulations.	Flood	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-18	Conduct an inventory/survey for emergency response services to identify any existing needs or shortfalls in terms of personnel, equipment or required resources. A survey should be completed in order to verify the county's current emergency services are adequate to protect public health and safety from most probable hazard events. Any identified needs or shortfalls should become documented and result in specific recommendations to the County Commission for emergency service enhancements.	All Hazards	Emergency Manager	Medium	1,2,4	Staff Time	Local, State	12/31/2014	On-going
Shawnee County-19	Amend existing or adopt new zoning and subdivision ordinances to require installation of onsite tornado shelters for any new Manufactured Housing and Travel Trailer Parks with more than 30 mobile home spaces. Mobile homes are particularly vulnerable to damage from high winds. Residents, even those who live in mobile homes with tie-downs, should seek safe shelter when a tornado threatens. Tornado shelters should be constructed in major mobile home parks to ensure a safe place for residents to go during a tornado event. The shelter structure, which should be designed to withstand a minimum of 120mph winds, could easily serve an alternate purpose such as a community center, laundry facility, etc.	Tornado, Windstorm	Emergency Manager	Medium	1,2,4	Staff Time	Local, State	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-20	Develop cross-departmental information collection capabilities, and incorporate cadastral data utilizing a GIS for purposes of conducting more detailed hazard risk assessments and for tracking permitting / land use patterns, buildings and infrastructure replacement costs, and overall structural accounting for the county and local jurisdictions. A comprehensive catalog of data can greatly enhance technical capability to manage, analyze and display spatially referenced data. Shawnee County currently has basic GIS capabilities. Further development of this capability for functional use across all departments and jurisdictions will enhance the overall capabilities to document building/structure cost data, and further hazard mitigation goals in developing cadastral data for the county.	All Hazards	Emergency Manager	High	4	Staff Time	Local, State, Grants	12/31/2014	On-going
Shawnee County-21	Develop and implement a wildfire prevention/education program. In addition to providing education to the general public, the program should also target children, fire and equipment users, builders and developers, and homeowners. Shawnee County has burn-ban resolutions which require special permission to conduct open burning operations. In periods of drought or extreme weather conditions a burn ban may be declared. When a ban is declared all radio stations, TV stations, and regional newspapers in the area are notified as well as City Managers, fire chiefs, etc. To better educate the public at large, Shawnee County should expand their existing fire protection program to include wildfire workshops to all age groups and commercial operations.	Wildfire	Emergency Manager	Medium	1,2,3	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-22	Examine the current agreements within the county and assess the need to expand to update cooperative agreements for firefighting resources. Include agreements with local, state and federal agencies. Cooperative agreements provide the support needed in times of emergency, and are an important element of planning, with the long-range goal of reducing damage to structures and systems within the jurisdiction.	Wildfire	Emergency Manager	Medium	4	Staff Time	Local	12/31/2014	On-going
Shawnee County-23	Emergency Services. Create a working group to evaluate the firefighting water supply resources within the County, including both fixed and mobile supply issues. Lack of sufficient water supply makes it difficult to suppress fires. Whenever possible, increasing access to water along water service delivery lines (wet and dry hydrants) would provide additional resources for emergency responders.	Wildfire	Emergency Manager	Medium	4	Staff Time	Local	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-24	Distribute assessment report examples provided by the Kansas Forest Service to applicable parties to develop an understanding of the Community Wildfire Protection Plan (CWPP). Recommend joining the program and completing an assessment report for approval. The probability of grass/cropland fire in Shawnee County is relatively high. With the known history of wildfire occurrence, the likelihood of future events is estimated to remain the same as currently calculated. Shawnee County can expect an average of 31.46 significant wildfires per year that damage or destroy a total of 5,924 acres. The average area burned is approximately 987 acres, with a average dollar loss of $7,283.43. The Kansas Forest Service staff would provide assistance to interested communities in the form of a Community Wildfire Hazard Assessment Report and some mitigation action items.	Wildfire	Emergency Manager	High	3,4	Staff Time	Local, State, Federal, Grants	12/31/2014	On-going
Shawnee County-25	Appoint a rural fire committee to schedule meetings with the Kansas Forest Service to map suspected hazardous wildfire areas in the county for potential participation in the CWPP. In order for a community to take advantage of the Community based Healthy forests Restoration Act (HFRA), 2003, a community must develop a CWPP. To develop qualifications the community must identify and map potential hazard areas as an initial step towards participation in the program.	Wildfire	Emergency Manager	High	4	Staff Time	Local, State, Federal	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-26	Incorporate wildfire maps, develop actions and projects for wildfire prevention, and complete an assessment report to meet CWPP requirements for submittal to the Kansas Forest Service. The minimum requirements participation in the CWPP as described in the HFRA are: (1) Collaboration: A CWPP must be collaboratively developed by local and state government representatives, in consultation with federal agencies and other interested parties. (2) Prioritized Fuel Reduction: A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure. (3) Treatment of Structural Ignitability: A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.	Wildfire	Emergency Manager	High	1,2,4	Unknown	Local, State, Federal	12/31/2014	On-going
Shawnee County-27	Seek funding to replace the undersized culverts located across SW 40th Street to eliminate excessive erosion in the lower end of the Lake Sherwood watershed due to current and future development runoff. Due to inadequate culvert size, this watershed creek has overtopped the road numerous times and has caused extensive erosion of silk and rock being washed away and deposited in the cove of Lake Sherwood. The recommended work would include removing the two existing small culverts and replace with a larger one, with additional road work to accommodate the changes. The subject culvert is located at the south edge of the Sherwood Improvement District and outside the taxing authority of the SID, approximately 1.4 miles west of Wanamaker Road on 40th Street at the 7100 block. The estimated project cost is approximately $225,000.	Flood	Emergency Manager	Medium	1,2	225000	Local, State, FEMA	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-28	Develop and submit an Emergency Action Plan (EAP) for the Lake Sherwood High Hazard Dam to the State of Kansas and the Shawnee County Emergency Management Department. Approval is granted through the KDA-DWR - State Engineering Office. The EAP should be integrated into the Shawnee County LEOP. The dam is identified as the Lake Sherwood Dam (State ID #DSN-0165), which is owned and operated by the Sherwood Lake Club and was constructed in 1964. The dam is required to have an EAP filed with the State of Kansas. The State evaluation of high-hazard dams is based on its location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, or main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe, as defined by the State of Kansas. An individual dam's hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing for a potential emergency is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Dam and Levee Failure	Emergency Manager	High	1,2,4	Staff Time	Unknown	12/31/2011	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-29	Identify the most at-risk critical facilities and evaluate potential mitigation techniques for protecting each facility to the maximum extent possible. A thorough evaluation of potential mitigation opportunities for the jurisdiction's critical facilities must still be completed. Currently, there is limited data available on these facilities. An inventory/database on critical facilities should be created and maintained by the county and shared with KDEM. This inventory should include information on the location and risk to each facility, and should also document any cost-effective mitigation techniques to consider when funding becomes available.	All Hazards	Emergency Manager	Medium	1,2,4	Staff Time	Local	12/31/2014	On-going
Shawnee County-30	The Cross Creek Watershed will continue to construct, operate, and maintain water detention dams for flood reduction in the watershed district. The Cross Creek Watershed Joint District No. 42 contains 17,900 acres within Shawnee County, and is also located within the taxing districts of Pottawatomie County and Jackson County. The operating budget was $96,570 for 2009. The organization will evaluate the need for further construction, operation, and maintenance projects, and additional effort will be made to seek alternative funding as they become available.	Dam and Levee Failure	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-31	Develop and submit an EAP for the High Hazard Dam owned by Cross Creek Watershed Joint District No. 42. Approval is granted through the Department of Agriculture's Water Resources Division - State Engineering Office. The EAP should be integrated into the Shawnee County Local Emergency Operations Plan. The dam is identified as Dam #131 which is owned and operated by the Cross Creek Watershed Joint District No. 42. The dam is required to have an EAP filed with the State of Kansas. The State evaluation of high-hazard dams is based on its location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, or main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe, as defined by the State of Kansas. An individual dam's hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing for a potential emergency is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Dam and Levee Failure	Emergency Manager	High	1,2,4	Unknown	Local	31 April 2011	On-going
Shawnee County-32	The Kaw River Drainage District will continue to perform flood control and river bank stabilization within the Drainage District. The Kaw River Drainage District contains 5,500 acres within Shawnee County. The drainage district Board was formed in 1905, and meets monthly. The general mission of the drainage district is flood control and river bank stabilization.	Dam and Levee Failure	Emergency Manager	Medium	1,2	Staff Time	Local, State, Federal	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-33	The North Topeka Drainage District will continue to maintain and operate flood control levees, flood gate structures, and channels, allowing storm water runoff to pass through the District without causing flooding of property. The North Topeka Drainage District contains 920 acres within Shawnee County. The drainage district Board was formed in 1906, and meets monthly. The general mission of the drainage district is to pass stormwater run-off through the District without causing flooding of property through maintenance and operation of flood control levees, flood-gate structures, and channels. The organization will evaluate the need for further maintenance projects, and additional effort will be made to seek alternative funding as they become available.	Dam and Levee Failure	Emergency Manager	Medium	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Shawnee County-34	The North Topeka Drainage District will seek funding to repair Soldier Creek levees and channel damaged by 2005 flood waters. The North Topeka Drainage District contains 920 acres within Shawnee County. The drainage district Board was formed in 1906, and meets monthly. The general mission of the drainage district is to pass stormwater run-off through the District without causing flooding of property through maintenance and operation of flood control levees, flood-gate structures, and channels. Future planning, if funding is available, includes repair of Soldier Creek levees and channel damaged by 2005 flood waters.	Dam and Levee Failure	Emergency Manager	Medium	1,2	Staff Time	Local, State, Federal	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-35	The North Topeka Drainage District will consider an upgrade of the levee located along the north side of the Kansas River within the drainage district. The North Topeka Drainage District contains 920 acres within Shawnee County. The drainage district Board was formed in 1906, and meets monthly. The general mission of the drainage district is to pass stormwater run-off through the District without causing flooding of property through maintenance and operation of flood control levees, flood-gate structures, and channels. Future planning, if funding is available, includes the upgrade of the levee located along the north side of the Kansas River in the District.	Dam and Levee Failure	Emergency Manager	Medium	1,2	Unknown	Local, State, Federal	12/31/2014	On-going
Shawnee County-36	The Shawnee County Consolidated RWD No. 1 will continue to assess the impact of natural hazards on water distribution lines, systems, and equipment. Seek funding sources to mitigate damage to critical infrastructure. The Shawnee County Consolidated RWD No. 1 provides potable water to their customers throughout Shawnee County. Maintaining distribution capabilities of potable water is the water district's top priority.	Utility/ Infrastructure Failure	Emergency Manager	Medium	1,2	Staff Time	Local, State, Federal	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-37	The Shunganunga Drainage District will continue the care and maintenance of the Shunganunga Drainage District Dams, including the South Branch Dam and the Burnett Dam. The Kaw River Drainage District encompasses the area along Shunganunga Creek in Shawnee County, but is responsible only for the maintenance of the dams located on the Creek. Requested projects include includes cement-work on the spillways of each dam and possible raising the level of the South Branch Dam to meet state regulations.	Dam and Levee Failure	Emergency Manager	Medium	1,2	Staff Time	Local, State, Federal	12/31/2014	On-going
Shawnee County-38	Develop and submit an EAP for the Burnett Dam, a high hazard dam, owned and maintained by the Shunganunga Drainage District. Approval is granted through the KDA-DWR - State Engineering Office. The EAP should be integrated into the Shawnee County LEOP. The dam is required to have an EAP filed with the State. The State evaluation of high-hazard dams is based on its location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, or main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe. An individual dam's hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing for an emergency is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Dam and Levee Failure	Emergency Manager	High	1,2,4	Staff time	Local	April 31 2011	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Shawnee County-39	The Tri County Drainage District No. 1 will continue to construct, operate, and maintain levee systems along the Kansas River and a portion of Cross Creek and Bourbanois Creek for flood protection. The Tri-County Drainage District No. 1 contains 8,920 acres within Shawnee County, and is also located within the taxing districts of Pottawatomie County and Wabaunsee County. The general mission of the drainage district is to construct, operate, and maintain levee systems along the Kansas River and a portion of Cross Creek and Bourbanois Creek for flood protection. The organization will evaluate the need for further maintenance projects, and additional effort will be made to seek alternative funding.	Dam and Levee Failure	Emergency Manager	Medium	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Shawnee County-40	Develop and submit an EAP for the Lake Shawnee (State ID #DSN-0017) High Hazard Dam. Approval is granted through the KDA-DWR- State Engineering Office. The EAP should be integrated into the Shawnee County Local Emergency Operations Plan. The Lake Shawnee Dam was constructed in 1937. The dam is required to have an EAP filed with the State of Kansas. The State evaluation of high-hazard dams is based on its location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, or main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe, as defined by the State of Kansas. An individual dam's hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing for a potential emergency is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Dam and Levee Failure	Emergency Manager	High	1,2,4	Staff Time	Local	31 April 2011	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Auburn-1	Auburn is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
Auburn-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous
Auburn-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Auburn-4	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited government offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Auburn-5	Coordinate county and local government mitigation efforts with RECs , encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	Medium	4	Staff Time	Local	12/31/2014	On-going
Auburn-6	Annually host a public “hazards workshop” for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Shawnee County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$250 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Auburn-7	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff time	Local, State, Federal	Continuous	On-going, Continuous
Auburn-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost .	Winter Storm	City Manager	Medium	3,4	Staff Time	Local	Continuous	On-going, Continuous
Auburn-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. Shawnee is an urban county, but maintains an agricultural base. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism,, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Auburn-10	Appoint a planning committee to identify flash-flood prone areas to consider flood reduction measures to the city's Floodplain Manager / Mitigation Officer. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Flood	Floodplain Manager, Mitigation Officer	Medium	1,2,4	Staff Time	Local	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Rossville-1	Underground Electric on Main Street. Including sidewalk & stormwater runoff. These are outdated and in need of repair.	Utility/ Infrastructure Failure	Code Enforcement Administrator	High	1,2	700000	KDOT, Local	12 months	New
Rossville-2	Rossville is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
Rossville-3	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous
Rossville-4	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Rossville-5	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited government offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Rossville-6	Coordinate county and local government mitigation efforts with RECs , encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	Medium	4	Staff Time	Local	12/31/2014	On-going
Rossville-7	Annually host a public “hazards workshop” for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Shawnee County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Rossville-8	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Rossville-9	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost .	Winter Storm	City Manager	Medium	3,4	Staff Time	Local	Continuous	On-going, Continuous
Rossville-10	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. Shawnee is an urban county, but maintains an agricultural base in the unincorporated areas of the county. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism,, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Rossville-11	Appoint a planning committee to identify flash-flood prone areas to consider flood reduction measures to the city's Floodplain Manager / Mitigation Officer. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Flood	Floodplain Manager, Mitigation Officer	Medium	1,2,4	Staff Time	Local	12/31/2014	On-going
Rossville-12	Seek funding to complete a stormwater drainage study/plan for the City that will lead to a stormwater management ordinance. Historically the City has experienced areas of flooding due to inadequate drainage of stormwater runoff.	Flood	Floodplain, Utility Superintendent	High	1,2	$20,000	Local, State, Federal	12/31/2014	On-going
Rossville-13	Seek funding to retain an engineer to design a community tornado shelter and apply for grant funding for construction. A lack of tornado shelters poses a serious risk to the safety of the community. The City of Rossville has identified a need for Community Storm Shelters.	Tornado	Zoning Administrator	High	1,2	$40,000	FEMA	12/31/2014	On-going
SilverLake-1	Silver Lake is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
SilverLake-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous
SilverLake-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous
SilverLake-4	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited government offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
SilverLake-5	Coordinate county and local government mitigation efforts with RECs , encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	Medium	4	Staff Time	Local	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
SilverLake-6	Annually host a public "hazards workshop" for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Shawnee County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Utility/ Infrastructure Failure	City Manager	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous
SilverLake-7	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
SilverLake-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost .	Winter Storm	City Manager	Medium	3,4	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
SilverLake-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. Shawnee is an urban county, but maintains an agricultural base in the unincorporated areas of the county. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism,, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
SilverLkae-10	Appoint a planning committee to identify flash-flood prone areas to consider flood reduction measures to the city's Floodplain Manager / Mitigation Officer. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Flood	Floodplain Manager, Mitigation Officer	Medium	1,2,4	Staff Time	Local	12/31/2014	On-going
SilverLake-11	Appoint a Planning Committee to work with Shawnee County to develop a plan to reduce flooding in areas of the City of Silver Lake currently located within a floodplain. The northern portion of the City of Silver Lake is located within a floodplain, and reportedly floods frequently. The City of Silver Lake intends to work with Shawnee County to identify methods of flood-reduction in this area, which may require structural projects.	Flood	Silver Lake Mitigation Officer, Floodplain Manager	Medium	4	Staff Time	Local, State, Federal	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
SilverLake-12	Seek funding to retain an engineer to design a community tornado shelter and apply for grant funding for construction. A lack of tornado shelters poses a serious risk to the safety of the community. The City of Silver Lake has identified a need for Community Storm Shelters within the existing Community Center and/or City Hall, as neither structure has a basement.	Tornado	Silver Lake Mitigation Officer, Zoning Administrator	High	1,2	$40,000	FEMA	12/31/2014	On-going
Topeka-1	Topeka is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
Topeka-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Topeka-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous
Topeka-4	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited government offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Topeka-5	Coordinate county and local government mitigation efforts with RECs , encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	Medium	4	Staff Time	Local	12/31/2014	On-going
Topeka-6	Annually host a public “hazards workshop” for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Shawnee County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$1000 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Topeka-7	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Topeka-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost .	Winter Storm	City Manager	Medium	3,4	Staff time	Local	Continuous	On-going, Continuous
Topeka-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. Shawnee is an urban county, but maintains an agricultural base in the unincorporated areas of the county. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism,, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Topeka-10	Appoint a planning committee to identify flash-flood prone areas to consider flood reduction measures to the city's Floodplain Manager / Mitigation Officer. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Flood	Floodplain Manager, Mitigation Officer	Medium	1,2,4	Staff Time	Local	12/31/2014	On-going
Topeka-11	Develop and submit EAPs for the three High Hazard Dams owned by the City of Topeka. Approval is granted through the Department of Agriculture's Water Resources Division - State Engineering Office. The EAPs should be forwarded to the Shawnee County Emergency Management Department for inclusion in the Shawnee County Local Emergency Operations Plan. The dams are identified as the City of Topeka Unnamed Dam (State ID #DSN-0613) constructed in 1977, the Biddle Creek Detention Dam (State ID #DSN-0634)construction date unknown, and the Westridge Detention Dam (State ID #DSN 0681)construction date unknown. The dams are required to have an EAP filed with the State of Kansas. The State evaluation of high-hazard dams is based on its location in areas where failure may cause extensive loss of life, serious damage to homes, industrial and commercial facilities, important public utilities, or main highways or railroads. It is important to note that a high hazard dam is not necessarily unsafe, as defined by the State of Kansas. An individual dam's hazard classification is based upon the potential consequences of dam failure and does not reflect the physical condition of the dam. Preparing for a potential emergency is an essential planning step to secure the people and property downstream from a potential breach or dam failure.	Dam and Levee Failure	City Manager	High	1,2,4	Unknown	Local	31 April 2011	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Topeka-12	The City of Topeka will continue to operate and maintain their levee systems in accordance with the provisional PM 43 certification granted by FEMA, and will continue to work with other jurisdictions and levee owners for future compliance issues. The US Army Corps of Engineers prepared a Flood Risk Management Project - Feasibility Study Report and Environmental Assessment performed in connection with the City of Topeka levee system in December 2008, on behalf of the City of Topeka Public Works Department. The Study Area includes those portions of the Kansas River, Soldier Creek, and Shunganunga Creek drainage basins that are located within the City of Topeka. Upon considering the economic, environmental, social, and engineering aspects of making improvements to the existing Topeka, Kansas, Local Flood Protection Project, it was determined that a project to reduce the risk of flooding was in the public interest. The Corps of Engineers recommended that the Project be submitted to Congress for implementation with existing cost sharing and financing requirements. Information obtained through the City of Topeka Public Works Department indicated that the Project had been submitted to Congress, and the levee system has been provisionally certified for two-years by FEMA.	Dam and Levee Failure	City Manager	High	1,2	Unknown	Local, State, Federal	12/31/2011	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Topeka-13	Seek funding to retain an engineer to design Storm Shelters within several city-owned buildings and apply for grant funding for construction. A lack of tornado shelters poses a serious risk to the community, including City of Topeka employees. The City of Topeka has identified a need for Storm Shelters within the existing Street and Fleet Operations Building and the Administration Building/Parks and Recreation Field Office within the city limits.	Tornado	City Manager	High	1,2	$60,000	FEMA	12/31/2014	On-going
Willard-1	Willard is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Flood	City Manager	High	1,2,3,4	Staff Time	State, FEMA, Grants	Continuous	On-going, Continuous
Willard-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Flood	City Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Willard-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Flood	City Manager	High	1,2,3	Staff Time	Local	Continuous	On-going, Continuous
Willard-4	Collect educational materials on individual and family preparedness/mitigation measures for property owners, and display at both the library and routinely visited government offices. FEMA, KDEM, the NWS and other agencies provide information brochures and pamphlets on property protection measures at no cost.	All Hazards	City Manager	High	3,4	Staff Time	Local	Continuous	On-going, Continuous
Willard-5	Coordinate county and local government mitigation efforts with RECs , encourage identification of hazards potentially affecting their infrastructure, assessment of the vulnerabilities of the infrastructure to these hazards, and identification of mitigation strategies. Long-term planning goals that will reduce exposure to loss of electrical power are beneficial to all organizations and citizens within the jurisdiction. Power loss during extreme periods of cold or heat increase damage potential to people and property.	Utility/ Infrastructure Failure	City Manager	Medium	4	Staff Time	Local	12/31/2014	On-going
Willard-6	Annually host a public “hazards workshop” for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Shawnee County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	All Hazards	City Manager	Medium	3,4	$500 per workshop	Local	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Willard-7	Encourage the construction of safe rooms and storm shelters in public and private schools, day care centers and senior care facilities. When severe weather threatens, individuals and families need advance warning and protection from the dangerous forces of extreme winds. Individuals and communities in high-risk tornado and hurricane areas need structurally sound shelters and early alert systems.	Tornado, Windstorm	City Manager	High	1,2	Staff Time	Local, State, Federal	Continuous	On-going, Continuous
Willard-8	Educate residents about driving in winter storms and handling winter-related health effects. USDOT, KDOT and other agencies provide information brochures and pamphlets on safe driving measures at no cost .	Winter Storm	City Manager	Medium	3,4	Staff Time	Local	Continuous	On-going, Continuous
Willard-9	Promote and educate the jurisdiction's public and private sectors on potential agricultural terrorism and bio-terrorism issues that can severely impact the county and regional economies, and develop and implement plans to address these issues. Shawnee is an urban county, but maintains an agricultural base in the unincorporated areas of the county. A natural or intentional introduction of a foreign animal disease would be devastating to the local, regional state, economies. This annex will be added to the LEOP, with additional annexes developed in the future to address other types of terrorism.	Terrorism/ Agri-Terrorism,, Civil Disorder	City Manager	Medium	3,4	Staff Time	Local, State, Federal	Continuous	On-going, Continuous

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Willard-10	Appoint a planning committee to identify flash-flood prone areas to consider flood reduction measures to the city's Floodplain Manager / Mitigation Officer. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Flood	City Manager	Medium	1,2,4	Staff Time	Local	12/31/2014	On-going
Willard-11	Research, develop, and adopt a Floodplain Management Plan for the City of Willard. Portions of the City of Willard have had historic flooding issues. The City currently does not have a Floodplain Management Plan to help in alleviating flooding issues.	Flood	City Manager	Medium	1,2,4	Staff Time	Local, State, Federal	12/31/2014	On-going
USD321-1	Develop and fund mitigation projects for the construction of tornado safe rooms for Unified School District 321 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendant	Medium	1,2	$500,000	Local, State, Federal	12/31/2014	On-going
USD321-2	Assess elevations and water flow in the Kaw Valley Unified School District 321 to qualify the benefit of flood control projects at the Rossville Grade School. The Kaw Valley Unified School District 321 would like to analyze the potential benefits of flood control projects in the area of the Rossville Grade School within the District to mitigate the effects from flooding.	Flood	Superintendant	Medium	1,2	Unknown	Local, State, Federal	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD345-1	Develop and fund mitigation projects for the construction of tornado safe rooms for Unified School District 345 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendant	Medium	1,2	$1,000,000	Local, State, Federal	12/31/2014	On-going
USD345-2	Seek funding to retain a professional school safety and security firm to review and update the school's Security Plan for domestic acts of terrorism, building security, and contagious disease response. As domestic acts of terrorism are becoming more of reality, many officials believe that the next wave of terrorists acts may be aimed at public school systems. Although these events are impossible to predict with great accuracy, updating building security, school security plans, and USD emergency plans can prepare school districts such as USD 345 for these events. Companies such as the National School Safety and Security Services provide the expertise in this field to help review and upgrade plans for the district.	Terrorism/ Agri-Terrorism,, Civil Disorder	Superintendant	Medium	1,2	Unknown	Local, State, Federal	Completed	Completed
USD372-1	Develop and Fund mitigation Projects for the construction of tornado safe rooms for Unified School District 372 schools. Tornado safe rooms should be constructed in schools to ensure a safe place for students and faculty to go during a tornado event.	Tornado	Superintendant	Medium	1,2	$1,000,000	Local, State, Federal	12/31/2014	NEW

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD437-1	Develop and Fund mitigation Projects for the construction of tornado safe rooms for Unified School District 437 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendant	Medium	1,2	$1,000,000	Local, State, Federal	12/31/2014	On-going
USD450-1	Develop and fund mitigation projects for the construction of tornado safe rooms for Unified School District 450 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendant	Medium	1,2	$1,000,000	Local, State, Federal	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
USD501-1	Develop and fund mitigation projects for the construction of tornado safe rooms for Unified School District 501 schools. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	Superintendant	Medium	1,2	$1,500,000	Local, State, Federal	12/31/2014	On-going
Washburn University-1	Develop and fund mitigation projects for the construction of tornado safe rooms for select buildings located on Washburn University property. Schools are particularly vulnerable to potential damage from tornadoes and high winds. Students, faculty, and staff should seek safe shelter when a tornado threatens. Tornado safe rooms should be constructed in schools to ensure a safe place for students to go during a tornado event. Safe rooms may be funded by FEMA during new school construction, as part of school additions, or as retrofits.	Tornado	President	Medium	1,2	$1,000,000	Local, State, Federal	12/31/2014	On-going
Washburn University -2	Appoint a committee to develop a radio communications plan between campus security units and outside agencies of Shawnee County and the City of Topeka to ensure interoperability between all communities. The Plan should address equipment compatibility and upgrade requirements to implement the Plan. Washburn University has identified a need to implement interoperable radio communications between its security staff and county and city services in case of campus emergency.	All Hazards	President	Medium	1,2,4	Staff Time	Washburn University, Topeka, County	12/31/2014	On-going

Action Identification	Description	Hazard Addressed	Responsible Party	Overall Priority	Goal(s) Addressed	Estimated Cost	Potential Funding Source	Proposed Completion Timeframe	Current Status
Washburn University 3	Appoint a committee to research and implement enhancements to the University's early warnings systems for students and staff for weather alerts and campus emergencies. Washburn University has identified a need to enhance the University's ability to issue early warnings for students and staff for weather events or campus emergencies in an effective, dependable, and rapid manner.	All Hazards	President	Medium	1,2,4	Staff Time	Local, State, Federal	12/31/2014	On-going

5.7 MITIGATION ACTIONS SUPPORTING NATIONAL FLOOD INSURANCE PROGRAM

Participating jurisdictions within the region are committed to continued participation and compliance with the NFIP. The following table identifies specific, previously listed, mitigation actions supporting this commitment and are provided to assist in NFIP CRS application and compliance.

Actions in Support of NFIP

County	Action Identification	Description	Responsible Party	Current Status
Anderson	Anderson County-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even if a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Director of Emergency Management	On-going, Continuous
Anderson	Anderson County-2	Advertise and promote the availability of flood insurance to property owners by direct mail annually. Anderson County participates in the NFIP. There are currently 10 policies in effect, with a total coverage amount of $728,600. Since 1978, there have been 4 claims paid for a total loss paid amount of $205,554. NFIP flood insurance policies protect property owners by offering affordable rates for protecting both structures and contents.	Director of Emergency Management	On-going, Continuous
Anderson	Anderson County-4	Annually host a public "hazards workshop" in combination with local festivals, fairs, or other community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs , FEMA publications, tornado information, safety tips, etc.	Director of Emergency Management	On-going, Continuous
Anderson	Anderson-9	Anderson County is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Director of Emergency Management	On-going, Continuous
Anderson	Anderson-14	Regularly calculate and document the amount of flood prone property that is preserved as open space to reduce flood insurance burden to the county. CRS credit is given for areas that are permanently preserved as open space. Although credit is not given for federal lands, the jurisdiction maintains and continues to expand floodplain areas preserved as open space through land acquisition projects (i.e., HMGP), which protect parcels from development through deed restrictions. The jurisdiction also has floodplain land within state parks or otherwise preserved as wildlife and natural preserves, which does qualify for additional CRS credit.	Director of Emergency Management	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Anderson	Garnett-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The Kansas Water Resources Division provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Mayor	On-going, Continuous
Anderson	Garnett-2	Advertise and promote the availability of flood insurance to property owners by direct mail annually.	Mayor	On-going, Continuous
Anderson	Garnett-4	Annually host a public "hazards workshop" in combination with local festivals, fairs, or other community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Mayor	On-going, Continuous
Anderson	Garnett-9	The City of Garnett is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Anderson	Greeley-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Mayor	On-going, Continuous
Anderson	Greeley-2	Advertise and promote the availability of flood insurance to property owners by direct mail annually.	Mayor	On-going, Continuous
Anderson	Greeley-4	Annually host a public "hazards workshop" in combination with local festivals, fairs, or other community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Mayor	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Anderson	Greeley-9	Consider developing an application package for participation in the NFIP. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program. The jurisdiction must submit an application package that includes the following: an application for participation in the NFIP (FEMA Form 81-64); an adopted Resolution of Intent, which indicates an explicit desire to participate in the NFIP and a commitment to recognize flood hazards and carry out the objectives of the program; adopted Floodplain Management Regulations that exceed the minimum flood plain management requirements of the NFIP (44 CFR section 60.3); and a statement that the floodplain management regulations are legally enforceable. The city is flood mapped, but does not participate in the NFIP. Review of the FIRM for the City of Greeley (Initial Identification 1974; Flood Hazard Boundary Map Revision 1979; FIRM Effective Date 1984) indicates SFHAs located throughout the northern and southern portions of the city, due to the presence of the South Fork of the Pottawatomie Creek. The SFHAs appear to encompass both residential and commercial developments throughout the city.	Mayor	On-going
Anderson	Kincaid-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Mayor	On-going, Continuous
Anderson	Kincaid-2	Advertise and promote the availability of flood insurance to property owners by direct mail annually.	Mayor	On-going, Continuous
Anderson	Kincaid-4	Annually host a public "hazards workshop" in combination with local festivals, fairs, or other community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Mayor	On-going, Continuous
Anderson	Kincaid-10	Consider developing an application package for participation in the NFIP. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program. The jurisdiction must submit an application package that includes the following: an application for participation in the NFIP (FEMA Form 81-64); an adopted Resolution of Intent, which indicates an explicit desire to participate in the NFIP and a commitment to recognize flood hazards and carry out the objectives of the program; adopted Floodplain Management Regulations that exceed the minimum flood plain management requirements of the NFIP (44 CFR section 60.3); and a statement that the floodplain management regulations are legally enforceable. The city of Kincaid is flood mapped, but does not participate in the NFIP. Review of the Flood Hazard Boundary Map for the city of Kincaid (Effective Date November 1974) indicates SFHAs trending north-south on the west side of the city, due to the presence of an unnamed tributary of the North Fork of the Little Osage River in the area. It appears these areas include some populated residential areas of the city.	Mayor	On-going

County	Action Identification	Description	Responsible Party	Current Status
Anderson	Westphalia-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Mayor	On-going, Continuous
Anderson	Westphalia-2	Advertise and promote the availability of flood insurance to property owners by direct mail annually.	Mayor	On-going, Continuous
Anderson	Westphalia-4	Annually host a public "hazards workshop" in combination with local festivals, fairs, or other community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Mayor	On-going, Continuous
Anderson	Westphalia-9	Consider developing an application package for participation in the NFIP. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program. The jurisdiction must submit an application package that includes the following: an application for participation in the NFIP (FEMA Form 81-64); an adopted Resolution of Intent, which indicates an explicit desire to participate in the NFIP and a commitment to recognize flood hazards and carry out the objectives of the program; adopted Floodplain Management Regulations that exceed the minimum flood plain management requirements of the NFIP (44 CFR section 60.3); and a statement that the floodplain management regulations are legally enforceable. The city of Westphalia is flood mapped, but does not participate in the NFIP. Review of the Flood Hazard Boundary Map for the city of Westphalia (Effective Date December 1974) indicates SFHAs trending east-west in the northern and southern portions of the city, due to the presence of tributaries of Thomas Creek located in these areas. It appears these SFHA areas include some populated residential areas of the city.	Mayor	On-going
Coffey	Coffey County-1	The cities of Burlington, Gridley, New Strawn, Lebo, LeRoy, and Waverly are committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Emergency Manager	Deleted
Coffey	Coffey County-3	Annually host a public “hazards exhibition” in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Emergency Manager	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Coffey	Burlington-1	Burlington is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Coffey	Burlington-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Mayor	On-going, Continuous
Coffey	Burlington-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going
Coffey	Burlington-9	Review the current floodplain regulations and update as necessary. Category: Prevention The City of Burlington is currently in the process of updating their Comprehensive Land Use Plan. Once the Plan update is approved the city will need to review existing ordinances to assure they are in agreement with revised planning standards.	Mayor	On-going
Coffey	Gridley-1	Gridely is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Coffey	Gridley-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Mayor	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Coffey	Gridley-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going
Coffey	New Strawn-1	New Strawn is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Coffey	New Strawn-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Mayor	On-going, Continuous
Coffey	New Strawn-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going
Coffey	Lebo-1	Lebo is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Coffey	Lebo-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Mayor	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Coffey	Lebo-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going
Coffey	`LeRoy-1	LeRoy is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Coffey	LeRoy-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Mayor	On-going, Continuous
Coffey	LeRoy-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going
Coffey	Waverly-1	Waverly is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Coffey	Waverly-3	Annually host a public "hazards exhibition" in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating the public on the hazards that threaten them and the mitigation and preparedness measures available to protect them. Guest speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Mayor	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Coffey	Waverly-8	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going
Franklin	Franklin County-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses	County Planner	On-going, Continuous
Franklin	Franklin County-2	Franklin County is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Emergency Manager	On-going, Continuous
Franklin	Franklin County-13	Develop a program to acquire and preserve parcels of land subject to repetitive flooding from willing and voluntary property owners. Land acquisition is an effective mitigation technique to permanently eliminate the potential for damages from future flood events. Franklin County will apply for grant funding to acquire flood-prone parcels of land as acquisition data becomes available.	Emergency Manager	On-going
Franklin	Franklin County-14	Contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Emergency Manager	On-going, Continuous
Franklin	Franklin County-15	Advertise and promote the availability of flood insurance to county property owners. Franklin County, including the cities of Lane, Ottawa, Rantoul, and Wellsville, participate in the NFIP. There are currently 31 policies in effect, with a total coverage amount of $3,137,200. Since the jurisdiction joined the program, there have been 2 claims paid for a total loss paid amount of $1,558. (Source: FEMA, 2004). NFIP flood insurance policies protect property owners by offering affordable rates for protecting both structures and contents.	Emergency Manager	On-going, Continuous
Franklin	Franklin County-16	Regularly calculate and document the amount of flood prone property that is preserved as open space to reduce flood insurance burden to the county. CRS credit is given for areas that are permanently preserved as open space. Although credit is not given for federal lands, The jurisdiction maintains floodplain areas preserved as open space through land acquisition projects (i.e., HMGP), which protect parcels from development through deed restrictions.	County Planner	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Franklin	Franklin County-17	Identify flash-flood prone areas to consider flood reduction measures to city/county planners. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	County Planner	On-going
Franklin	Franklin County-18	Research, design, and recommend an appropriate stream buffer ordinance to protect water resources and to limit future flood damages. Riparian buffers serve as boundaries between waterways and existing development and help protect resources by filtering pollutants, providing flood control, alleviating streambank erosion, mitigating stream warming, and providing room for lateral movement of the stream channel. Buffer widths can vary greatly depending upon stream channel size and the intended purpose, but 50-100 feet is generally considered to be sufficient for bank stabilization and sediment control and 200 feet for flood control. Special consideration should be given to exempting agricultural operations from buffer regulations.	County Planner	On-going
Franklin	Franklin County-26	In cooperation with the City of Ottawa, implement a study to determine the residual flood risk in levee-protected areas. Levee owners or communities have the responsibility to provide documentation that a levee meets the requirements of Title 44 of the Code of Federal Regulations, Section 65.10 of the NFIP regulations (44CFR Section 65.10), as part of a study/mapping project. Without the required documentation necessary to comply with 44 CFR Section 65.10, the area behind the levee will be re-delineated and mapped as SFHA on the DFIRM. Procedure Memorandum No. 34 allows for the issuance of a deadline to the community for submitting the required documents.	Floodplain Manager	On-going, scheduled to be completed by spring 2014.
Franklin	Lane-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	County Planner	On-going, Continuous
Franklin	Lane-2	The city of Lane is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Franklin	Lane-13	Appoint a planning committee to assess flood prone areas and recommend flood reduction measures to city officials. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going

County	Action Identification	Description	Responsible Party	Current Status
Franklin	Ottawa-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	City Planner/Flood plain Manager	On-going
Franklin	Ottawa-2	The city of Ottawa is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	City Planner/Flood plain Manager	On-going, Continuous
Franklin	Ottawa-13	Determine the residual flood risk in levee-protected areas. Levee owners or communities have the responsibility to provide documentation that a levee meets the requirements of Title 44 of the CFR, Section 65.10 of the NFIP regulations (44CFR Section 65.10), as part of a study/mapping project. Without the required documentation necessary to comply with 44 CFR Section 65.10, the area behind the levee will be re-delineated and mapped as SFHA on the DFIRM. Procedure Memorandum No. 34 allows for the issuance of a deadline to the community for submitting the required documents.	Floodplain Manager	On-going
Franklin	Ottawa-15	Assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	City Planner	On-going
Franklin	Ottawa-16	The City of Ottawa will continue to operate and maintain their levee system in accordance with the provisional PM 43 certification requirements as approved by FEMA. A levee system is located in the City of Ottawa, due to the presence of the Marais des Cygnes River that runs east-west through the city. Reportedly, the levee is owned by the City of Ottawa, and was built by the City of Ottawa and the Corps of Engineers in 1960. It was also reported that the levee is inspected annually, is identified on FEMA Flood Insurance Rate Maps, and is currently provisionally accredited by FEMA. Review of the FIRM map for the City of Ottawa, dated 1984, indicates that the areas of the City of Ottawa that are located behind the levee system are designated as being located in Zone X-500, which is defined as "an area inundated by 500-year flooding; an area inundated by 100-year flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile; or an area protected by levees from 100-year flooding".	Public Works	On-going
Franklin	Ottawa-17	Minimize flood damage to existing development by maximizing the effectiveness of the storm sewer infrastructure. Implement a routine maintenance schedule for community storm sewers, drainage channels, and detention facilities.	Public Works	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Franklin	Ottawa-21	Review and update existing zoning and subdivision regulations and other storm sewer ordinances to ensure regulations and standards effectively channel runoff to the floodway. Regulate the location of proposed development using zoning and permitting ordinances, as well as storm water management plans, to ensure that new construction and development does not contribute to increased flood levels.	City Planner	On-going
Franklin	Ottawa-23	Acquisition of flood prone properties along Rock Creek. Acquisition and conservation of flood prone areas along creek will protect existing homes and development.	City Planner/Flood plain Manager	New
Franklin	Pomona-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	County Planner	On-going
Franklin	Pomona-16	The City of Pomona will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed or cancelled for repeat losses.	Mayor	On-going
Franklin	Princeton-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	County Planner	On-going
Franklin	Rantoul-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	County Planner	On-going
Franklin	Rantoul-2	The city of Rantoul is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Franklin	Rantoul-13	Assess flood prone areas and recommend flood reduction measures to city officials. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going
Franklin	Richmond-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and	County Planner	On-going
Franklin	Richmond-2	education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Mayor	On-going
Franklin	Wellsville-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and	County Planner	On-going
Franklin	Wellsville-2	The city of Wellsville is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program	Mayor	On-going, Continuous
Franklin	Williamsburg-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even of a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	County Planner	On-going
Linn	Linn County-1	Linn County is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Emergency Management Coordinator	On-going, Continuous
Linn	Linn County-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Emergency Management Coordinator	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Linn	Linn County-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year. Linn County, including the cities of Blue Mound, La Cygne, Mound City, Parker, and Pleasanton, participate in the NFIP. There are currently thirteen policies in effect, with a total coverage amount of $1,282,900. Since the jurisdiction joined the program, there have not been any claims paid for. (Source: FEMA, 2008). NFIP flood insurance policies protect property owners by offering affordable rates for protecting both structures and contents.	Emergency Management Coordinator	On-going, Continuous
Linn	Linn County-7	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Emergency Management Coordinator	On-going, Continuous
Linn	Linn County-17	Develop a program to acquire and preserve parcels of land subject to repetitive flooding from willing and voluntary property owners. Land acquisition is an effective mitigation technique to permanently eliminate the potential for damages from future flood events. The County can apply for grant funding to acquire flood-prone parcels of land from voluntary and willing property owners.	Emergency Management Coordinator	On-going, Continuous
Linn	Linn County-18	Initiate a planning committee to identify flash-flood prone areas to consider flood reduction measures to planners. Detailed flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Emergency Management Coordinator	On-going
Linn	BlueMound-1	Blue Mound is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Linn	BlueMound-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Linn	BlueMound-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous
Linn	BlueMound-7	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Mayor	On-going, Continuous
Linn	BlueMound-13	Appoint a planning committee to assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going
Linn	La Cynge-1	La Cygne is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Linn	La Cynge-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous
Linn	La Cynge-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous
Linn	La Cynge-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Mayor	On-going, Continuous
Linn	La Cynge-13	Appoint a committee to assess flood prone areas and recommend flood reduction measures to city planners. Seek funding for retention projects to decrease exposure to flooding. La Cygne planners reported that Cell #3 (South cell) of the Sewer Lagoon System has experienced floodwater infiltration during periods of extreme flooding (July 2007), resulting in extreme erosion of Cell 33 berm, and also perimeter fence destruction. The berm needs to be raised to prevent future floodwater infiltration.	Emergency Management Chair	On-going

County	Action Identification	Description	Responsible Party	Current Status
Linn	LaCynge-15	In the event of an emergency requiring evacuation of the city and its residents, a plan should be developed to accomplish the evacuation. There are three (3) federal reservoirs (Hillsdale, Melvern and Pomona) located outside of Linn County that could have a negative impact on the county, and city, in the event of a breach, overtopping or failure of a dam. A breach of any of these dams could result in flood waters affecting residential, commercial and agricultural areas downstream; potential life, social and economic consequences would likely be possible. Develop a plan, along with Linn County Emergency Management, to coordinate a plan of evacuation in the least amount of time possible, with the least amount of traffic congestion possible.	Emergency Management Chair	On-going
Linn	LaCynge-25	Flood damage prevention. Our city is a high risk for flooding. Update flood damage prevention ordinance to include new FEMA digital flood insurance rate maps.	Emergency Management Chair	New
Linn	LinnValley-1	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous
Linn	LinnValley-2	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous
Linn	LinnValley-5	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Mayor	On-going, Continuous
Linn	LinnValley-10	Continued participation in the NFIP	Mayor	On-going
Linn	MoundCity-1	Mound City is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Linn	MoundCity-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous
Linn	MoundCity-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Linn	MoundCity-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Mayor	On-going, Continuous
Linn	MoundCity-12	Initiate a planning committee to identify flash-flood prone areas to consider flood reduction measures to jurisdiction planners. Detailed flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going
Linn	Parker-1	Parker is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Linn	Parker-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous
Linn	Parker-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous
Linn	Parker-7	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Mayor	On-going, Continuous
Linn	Parker-14	Appoint a planning committee to assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going

County	Action Identification	Description	Responsible Party	Current Status
Linn	Pleasanton-1	Pleasanton is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Linn	Pleasanton-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous
Linn	Pleasanton-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous
Linn	Pleasanton-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Mayor	On-going, Continuous
Linn	Pleasanton-12	Initiate a planning committee to identify flash-flood prone areas to consider flood reduction measures to jurisdiction planners. Detailed flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going
Linn	Prescott-1	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous
Linn	Prescott-2	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Linn	Prescott-6	Annually host a public "hazards workshop" for the residents of the jurisdictions, in combination with local festivals, fairs, or other County or community events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten the jurisdiction, and the mitigation and preparedness measures available to protect them. Speakers from the NWS , KDEM and other relevant agencies should be invited to attend, and educational displays /handouts should be provided such as FIRMs, FEMA publications, tornado information, safety tips, etc.	Mayor	On-going, Continuous
Linn	Prescott-15	Initiate a planning committee to identify flash-flood prone areas to consider flood reduction measures to jurisdiction planners. Detailed flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Mayor	On-going
Linn	USD344-2	Assess elevations and water flow in the district to qualify the benefit of flood control projects in the district. The Pleasanton Unified School District #344 would like to analyze the potential benefits of constructing soil-based berms, and other flood control projects, around various facilities in the district to mitigate the effects from potential flooding.	Superintendent	On-going, Partially completed.
Miami	Miami County-1	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP. The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance claims are paid even if a disaster is not declared by the president, and there is no payback requirement. Flood insurance policies are continuous, and are not non-renewed for repeat losses.	Louisburg Fire Chief	New
Miami	Miami County-2	The County will work with the KDA to educate and promote local jurisdictional participation in the NFIP and Community Rating System. On an annual basis, property owners identified to be in high risk flood areas will be contact and informed of the availability of flood insurance. Miami County will also work with local Cities to contact identified property owners.	CFM/Planner	New
Miami	Miami County-3	Miami County is committed to continued voluntary participation and compliance with the NFIP. The benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Emergency Management Coordinator	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Miami	Miami County-4	Several areas within Miami County are prone to flash flooding causing a hazard to lives and property. Identify areas within the jurisdiction that are prone to flash flooding by using current flood zone mapping, watershed districts and past knowledge of flash flooding. Evaluate each area to determine causes and potential remediation measures to reduce or eliminate the flash flood potential. Develop long term plans to complete identified remediation measures	Project Manager	New
Miami	Miami County-5	The County and local governments will work with the KDA-DWR to educate and promote local jurisdictional participation in the NFIP and Community Rating System (CRS). The DWR provides local training and education on the benefits of participation in the NFIP. The program provides availability of flood insurance to individuals whose local governments participate in the program. Flood insurance policies are continuous, and are not non-renewed for repeat losses. The CRS program provides additional insurance premium discounts for citizens.	CFM/Planner	On-going
Miami	Miami County-6	Flood Warning System. Currently Miami County must rely on river level reports from upstream sensors or by physically looking at the river. Current monitoring along both the Marias des Cygnes river and Potawatomie Creek are insufficient to provide early warning. Evaluate the current needs of river level monitoring and pursues funding to provide additional monitoring stations located along the Marias des Cygnes river and Potawatomie Creek, as well as any other identified rivers and creeks, to provide early warning of rising waters.	Emergency Management Coordinator	New
Miami	Miami County-7	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	County and City Planners	On-going, Continuous
Miami	Miami County-8	Properties that are subject to the potential for repetitive flooding require maintenance and repair of infrastructure to the property such as roads, drainages, utilities etc. Land acquisition is an effective mitigation technique to permanently eliminate the potential for damages from future flood events. Develop a program to acquire and preserve parcels of land subject to repetitive flooding from willing and voluntary property owners.	CFM/Planner	New
Miami	Miami County-9	Advertise and promote the availability of flood insurance to property owners by direct mail once a year. Miami County, including the cities of Paola, Louisburg, and Osawatomie, participate in the NFIP. There are currently 79 policies in effect, with a total coverage amount of $10,402,300. Since the jurisdiction joined the program, there have been 15 claims paid for a total loss paid amount of $613,221. (Source: FEMA, 2008). NFIP flood insurance policies protect property owners by offering affordable rates for protecting both structures and contents.	County and City Planners	On-going, Continuous
Miami	Miami County-17	Mitigation – Open Space Preservation. Property that is preserved as open space can significantly reduce the flood insurance burden on the County. Additionally, preserved open space can give credit through the CRS and can provide additional premium discounts for citizens. Encourage the regular calculation and documentation of the amount of flood prone property that is preserved as open space to reduce the flood insurance burden.	County Flood Manager/Planner	New

County	Action Identification	Description	Responsible Party	Current Status
Miami	Miami County-26	Regularly calculate and document the amount of flood prone property that is preserved as open space to reduce flood insurance burden to the county. CRS credit is given for areas that are permanently preserved as open space. Although credit is not given for federal lands, The jurisdiction maintains floodplain areas preserved as open space, and protects parcels from development through deed restrictions. The jurisdiction also has floodplain land within state parks or otherwise preserved as wildlife and natural wildlife preserves, which does qualify for additional CRS credit.	County Planner	On-going, Continuous
Miami	Miami County-28	Identify flash-flood prone areas to consider flood reduction measures to county planners. Flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Emergency Management Coordinator	On-going
Miami	Miami County-30	Recommend a revision to the Flood Damage Prevention Ordinance to include a "no-rise (in base flood elevation)" clause for the county. Many floodplain permitting systems, including those that meet National Flood Insurance Program standards, allow projects outside the floodway to increase base flood elevations by up to one foot. While this may not represent a significant increase for just one project, the cumulative impact of a number of projects in the same floodplain can be significant. By prohibiting any rise throughout the 100-year floodplain, a "no rise" clause ensures that the cumulative impact of multiple permitted projects will not cause flood elevations to rise to unacceptable levels.	Emergency Management Coordinator	On-going
Miami	Miami County-31	Research and design an appropriate stream buffer ordinance to further protect the jurisdiction's water resources and to limit future flood damages adjacent to major waterways. Riparian buffers serve as natural boundaries between local waterways and existing development and help protect resources by filtering pollutants, providing flood control, alleviating streambank erosion, mitigating stream warming, and providing room for lateral movement of the stream channel. Buffer widths can vary greatly depending upon stream channel size and the intended purpose of the buffer, but 50-100 feet is generally considered to be sufficient for purposes of bank stabilization and sediment control. Many communities require 200 feet for flood control purposes. Special consideration should be given to exempting Miami County's agricultural operations from buffer regulations.	County Planner	On-going
Miami	Miami County-32	Implement a study to determine the residual flood risk in levee-protected areas. Levee owners or communities have the responsibility to provide documentation that a levee meets the requirements of Title 44 of the Code of Federal Regulations, Section 65.10 of the NFIP regulations (44CFR Section 65.10), as part of a study/mapping project. Without the required documentation necessary to comply with 44 CFR Section 65.10, the area behind the levee will be re-delineated and mapped as SFHA on the DFIRM . Procedure Memorandum No. 34 allows for the issuance of a deadline to the community for submitting the required documents.	County Planner	On-going
Miami	Miami County-44	Evaluate existing flood warning systems and needs for system upgrades and coverage. Seek grant funding to purchase and install systems. Monitoring stations along the Marias des Cygnes River and Pottawatomie Creek provide insufficient data for advance warning of potential flood levels. Additional monitoring stations should be located and installed to provide early warning of rising waters.	County Planner	On-going

County	Action Identification	Description	Responsible Party	Current Status
Miami	Fontana-1	The County and City will work with the KDA to educate and promote local jurisdictional participation in the NFIP and CRS. On an annual basis, property owners identified to be in high risk flood areas will be contact and informed of the availability of flood insurance. Miami County will work Cities to contact identified property owners.	Mayor	On-going
Miami	Fontana-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	County and City Planners	On-going, Continuous
Miami	Fontana-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	County and City Planners	On-going, Continuous
Miami	Louisburg-6	Louisburg is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Miami	Louisburg-7	The County and City will work with the KDA to educate and promote local jurisdictional participation in the NFIP and CRS. On an annual basis, property owners identified to be in high risk flood areas will be contact and informed of the availability of flood insurance. Miami County will work Cities to contact identified property owners.	Mayor	On-going
Miami	Louisburg-8	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	County and City Planners	On-going, Continuous
Miami	Louisburg-9	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	County and City Planners	On-going, Continuous
Miami	Louisburg-20	Appoint a planning committee to assess flood prone areas and recommend flood reduction measures to city planners. Flood zone mapping has provided initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flood prevention, or other planning steps to reduce exposure to this hazard.	City Planner	On-going
Miami	Osawatomie-2	Osawatomie is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Miami	Osawatomie-3	The County and City will work with the KDA to educate and promote local jurisdictional participation in the NFIP and CRS. On an annual basis, property owners identified to be in high risk flood areas will be contact and informed of the availability of flood insurance. Miami County will work Cities to contact identified property owners.	Mayor	On-going
Miami	Osawatomie-4	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	County and City Planners	On-going, Continuous
Miami	Osawatomie-5	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	County and City Planners	On-going, Continuous
Miami	Osawatomie-17	Seek funding sources to fulfill the requirements provided in Title 44, Chapter 1, Part 65, Section 65.10 of the Code of Federal Regulations for levee certification. Two levees, one along the Marias des Cygne and the other along Pottawatomie Creek, were constructed to protect the city from flooding. At the time this plan was authored the levees had not achieved FEMA certification. Initially, the City of Osawatomie was unable to submit the required documentation for levee certification by the procedures outlined under Procedure Memorandum No.43 (PM No.43) set forth by FEMA. PM No.34 holds the levee owner or community responsible for providing the documentation that shows the levee system meets the requirements of Section 65.10 of the NFIP regulations. Upon meeting all specifications of these regulations the structures may be identified by FEMA as Provisionally Accredited Levees (providing 1-percent-annual-chance flood protection).	City Planner	On-going
Miami	Osawatomie-18	Conduct a study to determine potential causes of the 2007 overtopping of Osawatomie Levee System. The jurisdiction has expressed concern regarding the current height of the levee after the flood of 2007 produced water levels that overtopped the levee walls.	Mayor	On-going
Miami	Osawatomie-19	Conduct a study to determine the year-built and level of protection for each local emergency facility. On completion of the study, consider seeking funding for mitigation projects for emergency facilities not currently designed for protection from flooding. Reduce the possibility of damages to emergency facilities from flooding.	Mayor	On-going
Miami	Osawatomie-20	Conduct a survey of all water retention and detention areas to ensure proper depth and runoff control. Restore to design specifications as necessary. Both retention and detention basins are a type of best management practice that are used for the management of stormwater runoff in order to help prevent flooding. The basins are found adjacent to tributaries of rivers, streams, lakes or bays. While both types of basins can be used to mitigate against floods it is the detention basin that is generally designed to provide protection from a 100-year flood event.	City Planner	On-going
Miami	Osawatomie-21	Conduct a study to determine the best locations for flood monitoring systems along the Marais Des Cygnes River and Pottawatomie Creek. Seek funding to purchase and install the monitoring systems. Monitoring stations along the Marias des Cygnes River and Pottawatomie Creek provide insufficient data for advance warning of potential flood levels. Additional monitoring stations should be located and installed to provide early warning of rising waters.	City Planner	On-going

County	Action Identification	Description	Responsible Party	Current Status
Miami	Paola-2	Paola is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Miami	Paola-3	The County and City will work with the KDA to educate and promote local jurisdictional participation in the NFIP and CRS. On an annual basis, property owners identified to be in high risk flood areas will be contact and informed of the availability of flood insurance. Miami County will work Cities to contact identified property owners.	Mayor	On-going
Miami	Paola-4	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	County and City Planners	On-going, Continuous
Miami	Paola-5	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	County and City Planners	On-going, Continuous
Miami	Paola-14	Appoint a planning committee to identify flood prone areas to consider flood reduction measures to city planners. Flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Floodplain Manager	On-going
Miami	Paola-22	Prevention - Flash Flood Prone Areas. Several areas within Miami County and the City's are prone to flash flooding causing a hazard to lives and property. Identify areas within the jurisdiction that are prone to flash flooding by using current flood zone mapping, watershed districts and past knowledge of flash flooding. Evaluate each area to determine causes and potential remediation measures to reduce or eliminate the flash flood potential. Develop long term plans to complete identified remediation measures.	Planner	New
Osage	Osage County-4	NFIP – continue compliance & adopt new floodplain ordinance. The County has been participating in the NFIP since 2005 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date. We also plan to join the Community Rating System program when it is available to Osage County.	Emergency Management Coordinator	On-going, Continuous
Osage	Osage County-5	Buyout of flood prone property. Many habitable buildings are located in the floodplain and/or are subject to flooding. Identify habitable buildings in the floodplain and/or are subject to flooding, prioritize locations, and purchase buildings as funding becomes available.	Emergency Management Coordinator	On-going

County	Action Identification	Description	Responsible Party	Current Status
Osage	Osage County-10	Education and Safety Shelters through the Osage County Health Department. The Osage County Health Department building does not have a tornado shelter. The Department will continue to educate the patrons and employees about where to go during a tornado. They would also like to continue to educate residents of Osage County about emergency plans in case of fire, flood, or tornado events. The Department will continue to distribute FEMA flyers and material at the Health Department & at the County Fair.	Emergency Management Coordinator	On-going
Osage	Osage County-11	Address Scour on County bridges. Many bridges throughout the County are susceptible to scour from flooding. The risk assessment identified seven scour critical bridges. There may also be other bridges where scour is an ongoing problem. The County is responsible to maintain culverts that have a greater than 25 square foot opening on township roads.	Emergency Management Coordinator	On-going
Osage	Burlingame-4	Annually host a public "hazards workshop" for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Miami County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as FIRMs , FEMA publications, safety tips, etc.	City Clerk	On-going, Continuous
Osage	Burlingame-6	NFIP – continue compliance. The City has been participating in the NFIP since 2003 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date.	City Clerk	On-going, Continuous
Osage	Carbondale-4	NFIP – continue compliance. The City has been participating in the NFIP since 2003 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date.	Mayor	On-going, Continuous
Osage	Carbondale-5	Mitigation Measures along Bury Creek. A local engineering firm has completed an assessment along Bury Creek. The Plan includes channel improvements, replacement of a culvert for the Market Street crossing which is currently a low water bridge, repair and/or replacement of Market Street bridge, and placement of guardrails on the Osage Street Bridge. These channel improvements are needed to keep the City in compliance with NFIP and not jeopardize flood rate and insurance coverage status.	Mayor	On-going
Osage	Lyndon-4	Flood protection of Lyndon Community Building. The Lyndon Community Building sits in a flood zone and has flooded three times from Salt Creek expanding out of its banks. A study needs to be completed of mitigation actions for this area. Some ideas include: change the elevation of 2nd Street, divert run-off water from the open ditch, enclose the ditch, or install a flood gate. Once the best alternative is identified, apply for funding and implement solution. The City is not able to use or rent out the building when it is surrounded by floodwaters. The City would benefit from mitigating the floodwaters at this location	Mayor	On-going

County	Action Identification	Description	Responsible Party	Current Status
Osage	Lyndon-5	NFIP – Continue compliance & adopt new floodplain ordinance. The City has been participating in the NFIP since 1986 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs, which will be effective in 2009. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date. Increase residents' awareness of the floodplain and NFIP.	Mayor	On-going, Continuous
Osage	Osage-5	Floodgate Sign. The spillway of the Osage City Lake cannot handle heavy rain events and floodwaters cover the road below the spillway. The City would like to have a swinging gate for the road in flooding times to prevent people from walking & driving through the area. Avoid injury by having a permanent swinging gate to warn people of the floodwater danger.	Mayor	On-going
Osage	Overbrook-4	NFIP – continue compliance. The City has been participating in the NFIP since 2008 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs , which will be effective in 2009. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date. Increase residents' awareness of the floodplain and NFIP.	City Clerk	On-going, Continuous
Osage	Quenemo-4	NFIP – Continue Compliance & adopt new floodplain ordinance. The City of Quenemo has a large portion of the City in a floodplain and now the new maps include an even larger portion of the City. Approximately, 70% of Quenemo will be in a floodplain. Approximately, 70% of Quenemo will be in a floodplain. Plan for Implementation and Administration: 1. Continue to educate residents about the floodplain and NFIP 2. Serve as a resource for residents with questions. 3. Hold Town Hall meeting to inform "new" residents that they will now be in the floodplain. 4. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date. Increase residents' awareness of the floodplain and NFIP.	City Clerk	On-going, Continuous
Osage	Scranton-4	NFIP – continue compliance & adopt new floodplain ordinance. The City has been participating in the NFIP since 1984 and plans to continue. A new flood insurance study has been completed for all of Osage County, including the incorporated areas. This new study resulted in the production of digital FIRMs , which will be effective in 2009. We would like to continue to educate residents about the floodplain and NFIP and serve as a resource for residents with questions. We will adopt new floodplain ordinance after receiving the Letter of Final Determination of the new map date. Increase residents' awareness of the floodplain and NFIP.	Mayor	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Shawnee	Shawnee County-1	Shawnee County is committed to continued voluntary participation and compliance with the NFIP. The benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Emergency Manager	On-going, Continuous
Shawnee	Shawnee County-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Emergency Manager	On-going, Continuous
Shawnee	Shawnee County-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year. Shawnee County, including the cities of Auburn, Rossville, Silver Lake, Topeka, and Willard participate in the NFIP. There are currently 949 policies in effect, with a total coverage amount of $144,838,400. Since the jurisdictions joined the program, there have been 250 claims paid for a total loss paid amount of $2,977,231. (Source: FEMA, 2008). NFIP flood insurance policies protect property owners by offering affordable rates for protecting both structures and contents.	Emergency Manager	On-going, Continuous
Shawnee	Shawnee County-11	Consider forming a coordinating entity to accumulate and consolidate all types of data for levees in Shawnee County and its jurisdictions. Early in the implementation of Flood Map Modernization (Map Mod), the FEMA recognized that the role of levees in flood risk reduction would be an important part of the efforts of Map Mod. Further, it was acknowledged that the condition of levees had not been assessed since they were originally mapped as providing base (1-percent-annual-chance) flood protection. Because of this, FEMA initiated a revised process to gain a better understanding of the actual flood risks for those citizens living and working behind levees nationwide. Often, documentation regarding levee design, accreditation, and the impacts on flood hazard mapping is outdated or missing altogether. Identifying levee owners and developing initiatives for certifying levees may help reduce overall risk to life and property in the community.	Emergency Manager	On-going
Shawnee	Shawnee County-12	Based on collection of consolidated data for levees, develop a plan that provides guidance for future maintenance, reconstruction, and PM 43 compliance issues for all levee systems in Shawnee County. Levee owners or communities have the responsibility to provide documentation that a levee meets the requirements of Title 44 of the Code of Federal Regulations, Section 65.10 of the national Flood Insurance Program regulations (44CFR Section 65.10), as part of a study/mapping project. Without the required documentation necessary to comply with 44 CFR Section 65.10, the area behind the levee will be re-delineated and mapped as SFHA on the DFIRM. Procedure Memorandum No. 34 allows for the issuance of a deadline to the community for submitting the required documents.	Emergency Manager	On-going

County	Action Identification	Description	Responsible Party	Current Status
Shawnee	Shawnee County-13	Develop a program to acquire and preserve parcels of land subject to repetitive flooding from willing and voluntary property owners. Land acquisition is an effective mitigation technique to permanently eliminate the potential for damages from future flood events. Shawnee County can apply for grant funding to acquire flood-prone parcels of land from voluntary and willing property owners.	Emergency Manager	On-going
Shawnee	Shawnee County-14	Regularly calculate and document the amount of flood prone property that is preserved as open space to reduce flood insurance burden to the county. CRS credit is given for areas that are permanently preserved as open space. Although credit is not given for federal lands, The jurisdiction maintains and continues to expand floodplain areas preserved as open space through wetlands restoration and other projects. The jurisdiction also has floodplain land within state parks or otherwise preserved as wildlife and natural preserves, which does qualify for additional CRS credit.	Emergency Manager	On-going, Continuous
Shawnee	Shawnee County-15	Appoint a planning committee to identify flash-flood prone areas to recommend flood reduction measures to county planners. Flood zone mapping will provide initial identification of potential hazard areas that can be reviewed with other data sources, such as the watershed districts goals and objectives, in developing long range planning activities for flash-flood prevention, or other planning steps to reduce exposure to this hazard.	Emergency Manager	On-going
Shawnee	Shawnee County-16	Develop and amend the Flood Damage Prevention Ordinance to include a "no-rise (in base flood elevation)" clause for the county. Many floodplain permitting systems, including those that meet National Flood Insurance Program standards, allow projects outside the floodway to increase base flood elevations by up to one foot. While this may not represent a significant increase for just one project, the cumulative impact of a number of projects in the same floodplain can be significant. By prohibiting any rise throughout the 100-year floodplain, a "no rise" clause ensures that the cumulative impact of multiple permitted projects will not cause flood elevations to rise to unacceptable levels.	Emergency Manager	On-going
Shawnee	Shawnee County-17	Research and design an appropriate stream buffer ordinance to further protect the jurisdiction's water resources and to limit future flood damages adjacent to major waterways. Riparian buffers serve as natural boundaries between local waterways and existing development and help protect resources by filtering pollutants, providing flood control, alleviating streambank erosion, mitigating stream warming, and providing room for lateral movement of the stream channel. Buffer widths can vary greatly depending upon stream channel size and the intended purpose of the buffer, but 50-100 feet is generally considered to be sufficient for purposes of bank stabilization and sediment control. Many communities require 200 feet for flood control purposes. Special consideration should be given to exempting Shawnee County's agricultural operations from buffer regulations.	Emergency Manager	On-going
Shawnee	Shawnee County-30	The Cross Creek Watershed will continue to construct, operate, and maintain water detention dams for flood reduction in the watershed district. The Cross Creek Watershed Joint District No. 42 contains 17,900 acres within Shawnee County, and is also located within the taxing districts of Pottawatomie County and Jackson County. The operating budget was $96,570 for 2009. The organization will evaluate the need for further construction, operation, and maintenance projects, and additional effort will be made to seek alternative funding as they become available.	Emergency Manager	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Shawnee	Shawnee County-32	The Kaw River Drainage District will continue to perform flood control and river bank stabilization within the Drainage District. The Kaw River Drainage District contains 5,500 acres within Shawnee County. The drainage district Board was formed in 1905, and meets monthly. The general mission of the drainage district is flood control and river bank stabilization.	Emergency Manager	On-going
Shawnee	Shawnee County-33	The North Topeka Drainage District will continue to maintain and operate flood control levees, flood gate structures, and channels, allowing storm water runoff to pass through the District without causing flooding of property. The North Topeka Drainage District contains 920 acres within Shawnee County. The drainage district Board was formed in 1906, and meets monthly. The general mission of the drainage district is to pass stormwater run-off through the District without causing flooding of property through maintenance and operation of flood control levees, flood-gate structures, and channels. The organization will evaluate the need for further maintenance projects, and additional effort will be made to seek alternative funding as they become available.	Emergency Manager	On-going, Continuous
Shawnee	Shawnee County-34	The North Topeka Drainage District will seek funding to repair Soldier Creek levees and channel damaged by 2005 flood waters. The North Topeka Drainage District contains 920 acres within Shawnee County. The drainage district Board was formed in 1906, and meets monthly. The general mission of the drainage district is to pass stormwater run-off through the District without causing flooding of property through maintenance and operation of flood control levees, flood-gate structures, and channels. Future planning, if funding is available, includes repair of Soldier Creek levees and channel damaged by 2005 flood waters.	Emergency Manager	On-going
Shawnee	Shawnee County-35	The North Topeka Drainage District will consider an upgrade of the levee located along the north side of the Kansas River within the drainage district. The North Topeka Drainage District contains 920 acres within Shawnee County. The drainage district Board was formed in 1906, and meets monthly. The general mission of the drainage district is to pass stormwater run-off through the District without causing flooding of property through maintenance and operation of flood control levees, flood-gate structures, and channels. Future planning, if funding is available, includes the upgrade of the levee located along the north side of the Kansas River in the District.	Emergency Manager	On-going
Shawnee	Shawnee County-39	The Tri County Drainage District No. 1 will continue to construct, operate, and maintain levee systems along the Kansas River and a portion of Cross Creek and Bourbanois Creek for flood protection. The Tri-County Drainage District No. 1 contains 8,920 acres within Shawnee County, and is also located within the taxing districts of Pottawatomie County and Wabaunsee County. The general mission of the drainage district is to construct, operate, and maintain levee systems along the Kansas River and a portion of Cross Creek and Bourbanois Creek for flood protection. The organization will evaluate the need for further maintenance projects, and additional effort will be made to seek alternative funding as they become available.	Emergency Manager	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Shawnee	Auburn-1	Auburn is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Shawnee	Auburn-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous
Shawnee	Auburn-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous
Shawnee	Auburn-6	Annually host a public "hazards workshop" for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Shawnee County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Mayor	On-going, Continuous
Shawnee	Auburn-10	Appoint a planning committee to identify flash-flood prone areas to consider flood reduction measures to the city's Floodplain Manager / Mitigation Officer. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Floodplain Manager, Mitigation Officer	On-going
Shawnee	Rossville-2	Rossville is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Shawnee	Rossville-3	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous
Shawnee	Rossville-4	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous

County	Action Identification	Description	Responsible Party	Current Status
Shawnee	Rossville-7	Annually host a public "hazards workshop" for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Shawnee County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Mayor	On-going, Continuous
Shawnee	Rossville-11	Appoint a planning committee to identify flash-flood prone areas to consider flood reduction measures to the city's Floodplain Manager / Mitigation Officer. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Floodplain Manager, Mitigation Officer	On-going
Shawnee	Rossville-12	Seek funding to complete a stormwater drainage study/plan for the City of Rossville that will lead to a stormwater management ordinance. Historically, the City of Rossville has experienced areas of flooding within the city limits due to inadequate drainage of stormwater runoff.	Floodplain, Utility Superintendent	On-going
Shawnee	SilverLake-1	Silver Lake is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Shawnee	SilverLake-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous
Shawnee	SilverLake-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous
Shawnee	SilverLake-6	Annually host a public "hazards workshop" for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Shawnee County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Mayor	On-going, Continuous
Shawnee	SilverLkae-10	Appoint a planning committee to identify flash-flood prone areas to consider flood reduction measures to the city's Floodplain Manager / Mitigation Officer. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Floodplain Manager, Mitigation Officer	On-going

County	Action Identification	Description	Responsible Party	Current Status
Shawnee	SilverLake-11	Appoint a Planning Committee to work with Shawnee County to develop a plan to reduce flooding in areas of the City of Silver Lake currently located within a floodplain. The northern portion of the City of Silver Lake is located within a floodplain, and reportedly floods frequently. The City of Silver Lake intends to work with Shawnee County to identify methods of flood-reduction in this area, which may require structural projects.	Silver Lake Mitigation Officer, Floodplain Manager	On-going
Shawnee	Topeka-1	Topeka is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Shawnee	Topeka-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous
Shawnee	Topeka-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous
Shawnee	Topeka-6	Annually host a public “hazards workshop” for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Shawnee County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Mayor	On-going, Continuous
Shawnee	Topeka-10	Appoint a planning committee to identify flash-flood prone areas to consider flood reduction measures to the city's Floodplain Manager / Mitigation Officer. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Floodplain Manager, Mitigation Officer	On-going

County	Action Identification	Description	Responsible Party	Current Status
Shawnee	Topeka-12	The City of Topeka will continue to operate and maintain their levee systems in accordance with the provisional PM 43 certification granted by FEMA, and will continue to work with other jurisdictions and levee owners for future compliance issues. The US Army Corps of Engineers prepared a Flood Risk Management Project - Feasibility Study Report and Environmental Assessment performed in connection with the City of Topeka levee system in December 2008, on behalf of the City of Topeka Public Works Department. The Study Area includes those portions of the Kansas River, Soldier Creek, and Shunganunga Creek drainage basins that are located within the City of Topeka. Upon considering the economic, environmental, social, and engineering aspects of making improvements to the existing Topeka, Kansas, Local Flood Protection Project, it was determined that a project to reduce the risk of flooding was in the public interest. The Corps of Engineers recommended that the Project be submitted to Congress for implementation with existing cost sharing and financing requirements. Information obtained through the City of Topeka Public Works Department indicated that the Project had been submitted to Congress, and the levee system has been provisionally certified for two-years by FEMA.	Mayor	On-going
Shawnee	Willard-1	Willard is committed to continued voluntary participation and compliance with the NFIP. A benefit of participation is that the citizens are provided the opportunity to purchase flood insurance to protect themselves against flood losses. Another consideration is that a jurisdiction that has been identified by FEMA as being flood-prone and has not joined the NFIP within one year of being notified of being mapped as flood-prone will be sanctioned. Jurisdictions that regulate development in floodplains are able to participate in the NFIP. To participate in the NFIP the jurisdiction must adopt and enforce floodplain management regulations that meet or exceed the minimum requirements of the program.	Mayor	On-going, Continuous
Shawnee	Willard-2	On an annual basis, contact owners identified in high-risk flood areas and inform them of potential availability of assistance through the Federal Flood Mitigation Assistance (FEMA) program, in addition to other flood protection measures. Property owners should be contacted every year to promote the availability of the FEMA funding and to determine their level of interest in applying for the program.	Mayor	On-going, Continuous
Shawnee	Willard-3	Advertise and promote the availability of flood insurance to property owners by direct mail once a year.	Mayor	On-going, Continuous
Shawnee	Willard-6	Annually host a public “hazards workshop” for the residents of the jurisdiction, in combination with local festivals, fairs, or other appropriate events drawing large crowds. The workshop should be geared toward educating them on the hazards that threaten Shawnee County, and the mitigation and preparedness measures available to protect them. Speakers from the NWS, the KDEM, and other relevant agencies should be invited to attend, and educational displays/handouts should be provided such as Flood Insurance Rate Maps, FEMA publications, safety tips, etc.	Mayor	On-going, Continuous
Shawnee	Willard-10	Appoint a planning committee to identify flash-flood prone areas to consider flood reduction measures to the city's Floodplain Manager / Mitigation Officer. Identification of high-risk areas will provide essential information for additional mitigation studies for development of actions and projects to prevent future damage from flash flooding events.	Mayor	On-going

County	Action Identification	Description	Responsible Party	Current Status
Shawnee	Willard-11	Research, develop, and adopt a Floodplain Management Plan for the City of Willard. Portions of the City of Willard have had historic flooding issues. The City currently does not have a Floodplain Management Plan to help in alleviating flooding issues.	Mayor	On-going
Shawnee	USD321-2	Assess elevations and water flow in the Kaw Valley Unified School District 321 to qualify the benefit of flood control projects at the Rossville Grade School. The Kaw Valley Unified School District 321 would like to analyze the potential benefits of flood control projects in the area of the Rossville Grade School within the District to mitigate the effects from flooding.	Superinten-dant	On-going

5.8 ACTION IMPLEMENTATION

Each participating jurisdiction is responsible for implementing their specifically identified mitigation actions. To foster accountability and increase the likelihood that actions will be implemented, every proposed action is assigned to a specific department. In general:

- A representative from the responsible department will be responsible for tracking and reporting on action status.
- The representative should provide input on whether the action as implemented is successful in reducing vulnerability, if applicable.
- If the action is unsuccessful in reducing vulnerability, the responsible department will be tasked with identifying deficiencies and additional required actions.

By identifying actions by specific jurisdiction it is hoped that future plan updates will be simplified as each jurisdiction can modify their individual actions without altering the actions of other jurisdictions. Additionally, each action has been assigned a proposed completion timeframe to determine if the action is being implemented according to plan.

6.0 PLAN MAINTENANCE

6.1 INTRODUCTION

44 CFR 201.6 (c)(4) requires "A plan maintenance process that includes: (i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle. (ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate. (iii) Discussion on how the community will continue public participation in the plan maintenance process."

This chapter details the regional strategy for plan maintenance and outlines the methodology for monitoring, updating, and evaluating the plan. The chapter also discusses incorporating the plan into existing planning mechanisms and how to address continued public involvement.

6.2 LOCAL EMERGENCY PLANNING COMMITTEE REQUIREMENTS

Regional Local Emergency Planning Committees (LEPCs) will be tasked with Plan monitoring, evaluation, and maintenance with assistance from KDEM. T he LEPCs, led by county emergency management agencies and with facilitation by KDEM, will:

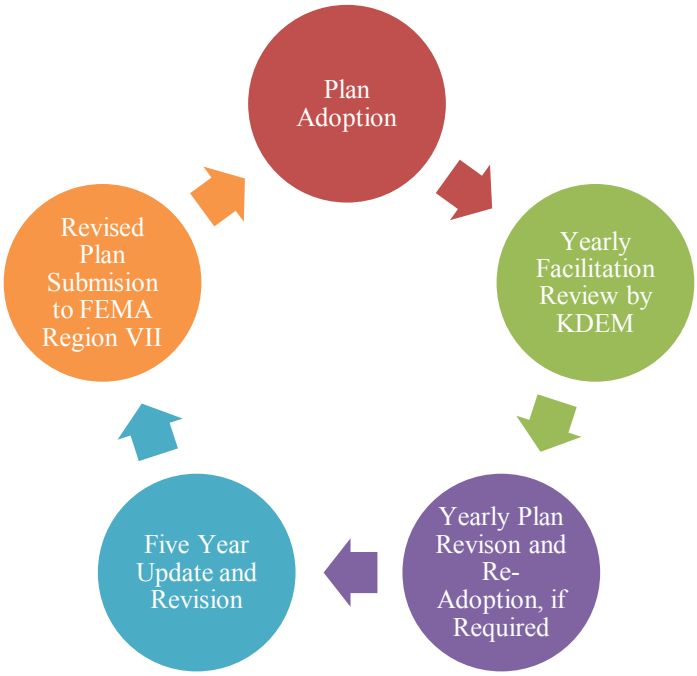
- Meet regularly to monitor and evaluate the implementation of the Plan
- When applicable, meet after a disaster event to evaluate the effectiveness of the Plan
- Act as a think tank for all issues related to hazard mitigation planning
- Act as a clearinghouse for hazard mitigation ideas and activities
- Assist with the implementation of all identified actions with available resources
- Monitor all available funding opportunities for mitigation actions
- Coordinate the cycle for the revision and update of the mitigation plan
- Report on Plan progress and recommended changes to the relevant governing bodies
- Inform and solicit input from the public

LEPC members will also be responsible for promoting the integration of the hazard mitigation plan into all relevant local and regional plans, policies, procedures and ordinances.

6.3 PLAN MAINTENANCE PROCESS

44 CFR 201.6 (c)(4) requires "A plan maintenance process that includes: (i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle."

The following diagram present the process for Plan maintenance and updates. KDEM will facilitate a y early Plan review and further facilitate any revisions, if necessary, and the subsequent re-adoption process.



Prior to Plan expiration, and working with all participating jurisdictions, a five-year update of the Plan will be submitted to the KDEM and FEMA Region VII as per the above noted requirement. The Plan will be reviewed to determine whether there have been any significant changes identified during the one year KDEM facilitated Plan reviews. These changes may include:

- Increased local or regional development or populations
- Increased or decreased exposure to identified hazards
- Emergence of newly identified hazards
- Changes in local or regional capabilities
- Legislative changes
- Newly available data
- Successful or unsuccessful implementation of identified actions
- New jurisdictions who would like to participate

The on-going Plan maintenance process provides participating jurisdictions the capability of evaluating identified actions for s uccess or fa ilure. Additionally, the process allows for t he timely revision of t he Plan as necessary. Changes to the Plan will be made to accommodate actions that have failed, are not considered feasible, or have been newly identified to address current needs. Updating of the Plan will be enacted through written changes and submissions as directed by the LEPCs and facilitated by KDEM.

Upon each successive revision the Plan will need to be re-adopted by all participating jurisdictions. Circumstances, including a major disaster or a change in regulations or laws, may modify the required five year planning cycle.

6.4 Post-Disaster Declaration Procedures

Following a disaster, the LEPCs may meet to review the plan to determine if any additional actions need to be identified, additional funding has become available, or any identified actions need to be re-prioritized.

6.5 Incorporation of Mitigation Plan Into Other Planning Mechanisms

(44 CFR 201.6 (c)(4)(ii) requires "A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate."

All participating jurisdictions will strive to implement actions that minimize loss of life and property damage from hazards as to their current capabilities. Whenever possible, participating jurisdictions will use existing plans, policies, procedures and programs to aid in the implementation of identified hazard mitigation actions. Potential avenues for implementation may include:

- Operation plans
- General or master plans
- Ordinances
- Capital improvement plans
- Budget revisions or adoptions
- Hiring of staff
- Stormwater planning
- Land use planning

The governing bodies of the jurisdictions adopting this plan will encourage all other relevant planning mechanisms under their authority to consult this plan to ensure minimization of risk to natural hazards as well as coordination of activities.

6.6 Continued Public Involvement

44 CFR 201.6 (c)(4)(iii) requires a "Discussion on how the community will continue public participation in the plan maintenance process."

Public participation is an important part of the continued mitigation planning process. Every effort will be made by participating jurisdictions to keep the public informed on both relevant

mitigation issues and the five year plan revision cycle. S trategies for continued public involvement may include:

- Public hearings
- Postings on electronic media, to include websites
- Notifications, when possible, in local media
- Making plans available for review in public locations

APPENDIX A

ADOPTION RESOLUTIONS

APPENDIX B

MEETING INFORMATION

To **Region "J" Hazard Mitigation Planning Committee**

Through **Jeanne Bunting, Mitigation Planner**
Kansas Division of Emergency Management (KDEM)

From **Kari Valentine, AMEC Environment & Infrastructure, Inc**
Tel / E-mail **785-272-6830 / kari.valentine@ame.com**

Date **8/26/2013**

Subject **Minutes from the Region "J" Shawnee County Kickoff Planning Meeting held on 8/26/2013 in Topeka, KS.**

This document is a record of attendance and a summary of the issues discussed during the above meeting. Topics covered during the meeting included: (1) an introduction to the purpose of hazard mitigation planning, (2) the benefits of a multi-jurisdictional approach, (3) the reasons for and benefits of the regional mitigation planning process, and (4) grant programs linked to an approved plan. The hazard mitigation planning process was reviewed to include requirements for public involvement and the use of data collection guides. The planning committee was given the list of hazards to be used as a part of the regional plan. The participants were not familiar with the hazard ranking methodology or probability, magnitude, warning time, and duration. Ms. Valentine explained that the State Hazard Mitigation Team had decided with the current update of the State Plan to profile the hazard Civil Disorder as a separate hazard rather than including it as a part of the Terrorism hazard. The group discussed mitigation actions and the availability of grant programs during the meeting. The meeting concluded with a discussion of the next steps in the planning process. The formal presentation portion of the meeting began at 9:00 am and concluded at 11:00 am.

Attendees

First Name	Last Name	Organization
Renee	Aldrich	American Red Cross
Barry	Beagle	Shawnee County Planning
Susan	Belt	AMEC
Miriam	Berke	City of Topeka
Brandy	Biltoft	Shawnee County Department of Corrections
Nick	Callaghan	Shawnee County GIS
Heather	Dunlop	City of Willard
Matt	Eyer	Blue Umbrella
Kevin	Flory	Shawnee County Emergency Management
Scott	Garcia	Shawnee County Emergency Management
Jake	Gray	KS Division of Emergency Management
Jim	Green	City of Topeka Emergency Management
Kevin	Gregg	Kaw Valley Electric
Ben	Grover	KS Division of Emergency Management
Russell	Kalcik	City of Silver Lake
Nancy	Lamb	KS Division of Emergency Management
Errin	Mahan	Shawnee County Sheriff's Office
Stephen	Miller	City of Topeka
Dusty	Nichols	Shawnee County Emergency Management

First Name	Last Name	Organization
Tom	Noble	City of Silver Lake
Jeff	Overmyer	City of Rossville
Bill	Ross	Silver Lake Township
Steve	Samuelson	KS Division of Water Resources
Brett	Starbuck	Shawnee County Health Agency
Dave	Taylor	Menoken Township
Marques	Williams	AMEC
Michelle	Wolfe	FEMA Region VII
Jennifer	Zeller	Shawnee County Health Agency

Introductions

Dusty Nichols, with Shawnee County Emergency Management, began the meeting by welcoming and thanking the attendees. Participant introduced themselves and identified what jurisdiction they represented. Kari Valentine, AMEC, provided the formal portion of the presentation.

Introduction to Hazard Mitigation Planning

Ms. Valentine presented information on the purpose and requirements of the Disaster Mitigation Act of 2000. The attendees were reminded that this is a regional planning effort which will combine all of the current county multi-jurisdictional hazard mitigation plans in Region "J." Those plans include: Anderson, Coffey, Franklin, Linn, Miami, Osage and Shawnee Counties. Once the regional plan is approved, it will supersede the previous plans. The first county plan to expire is Osage County on June 11, 2014. The presentation also addressed the benefits for jurisdictions participating in this mitigation plan update. A question was asked if townships had to be participating jurisdictions and the answer is "No, townships are covered under their County". Also it was asked about private parochial schools and other entities that might have an interest in this planning process if they should be invited to participate. The answer is yes private non-profit organizations and schools can be invited to participate as stakeholders, not as official jurisdictions and thus do not have to adopt the plan.

Jurisdictions have received federal hazard mitigation assistance funding in the past. Historically, the region has received over $2.4 million in Hazard Mitigation Assistance grants. The group also discussed the Siren grant program that began in 2011. Region J has received $225,000 for 15 outdoor warning sirens in the region. Other state and federal funding sources for mitigation projects were also mentioned.

Ms. Valentine described the benefits of participating in a multi-jurisdictional plan as improving coordination and communication among local jurisdictions and that these hazards do not stop at jurisdictional boundaries thus this multi-jurisdictional plan allows for a more comprehensive approach. The group also heard information regarding the significant cost savings being realized by the regional approach to planning. There are currently insufficient funds available to provide the full cost of updates to each county plan.

The regional approach now being used allows planning services to be provided to each county for the update at no cost to the county. KDEM has hired a contractor to assist with the research and writing effort. Matt Eyer with Blue Umbrella will be completing the Region "J" mitigation plan for committee review.

Ms. Valentine also described the role of the Hazard Mitigation Planning Committee (HMPC).Each jurisdiction participating in development of the plan must meet the following minimum requirements:

- Designate a representative to serve on the Region "J" Hazard Mitigation Planning Committee, which will meet **twice** during the planning process,
- Provide data for and assist in the development of the updated risk assessment that describes how various hazards impact your jurisdiction,
- Provide data to describe current capabilities,
- Develop/update mitigation actions (at least one) specific to your jurisdiction,
- Provide comments on plan drafts as requested,
- Inform the public, local officials, and other interested parties about the planning process and provide opportunities for them to comment on the plan, and
- Formally adopt the mitigation plan.

Planning for Public Involvement

The local/regional hazard mitigation plan requirements state that the public must have the opportunity to comment on the plan. The public will be given two opportunities to comment on the plan, once during the drafting stage and another when the plan is complete in the final draft stage. KDEM is planning to utilize Facebook pages to advertize the planning meetings, and to provide a vehicle for the public to make comments regarding the process and plan drafts. Jeanne Bunting with KDEM will provide additional information regarding the pages at a future meeting.

The meeting attendees discussed methods for notifying the public in the plan. The group mentioned that social media, Facebook and Twitter, have been effective in engaging the public in Shawnee County. Shawnee County Emergency Management is willing to post the regional draft plan when available and other jurisdictions can reference the link to Emergency Management's website for the regional draft plan.

Data Collection Process

The participating jurisdictions at the meeting were provided hard copies of Data Collection Guides. KDEM will follow-up after the meeting with electronic copies emailed to the attendees. Shawnee County Emergency Management will follow-up with jurisdictions that were not in attendance at this meeting to provide an overview of the process being used and copies of data collection guides for completion. The Data Collection Guides are specific for local units of government and schools. There are two different guides, one for local governments, and one for schools and universities. The jurisdictions were requested to provide data regarding hazards that had occurred in their jurisdiction since the last plan update (2009 to 2013) for the hazards in their county's current plan and all previous events for the new hazards that are in the Regional Plan. The Data Collection Guides were requested to be returned to Jeanne Bunting by October 5, 2013. Ms. Valentine stated that KDEM will accept historical hazard information in any format which includes newspaper articles, monthly newsletters, website links and hazard photos are always useful in seeing the damage.

Plan Format/ Regional and Countywide Risk Assessment

Mrs. Belt, with AMEC, with the help of Blue Umbrella and KDEM staff, reviewed the process for integrating the plans. The list of hazards in the State of Kansas plan is the list that is being used for the regional plans. Several of the hazards included in the State Plan were not included in the current plan for several counties in Region J. Those counties will need to provide historical information on the new hazards for the risk assessment.

Steve Samuelson, Kansas Division of Water Resources, stated he would work Community Rating System (CRS) communities to make sure the new CRS manual guidance is met for this regional mitigation plan update. The program is available to communities that participate in the National Flood Insurance Program (NFIP). Participation in the CRS program allows communities to obtain discounts for NFIP participants on flood insurance.

Mitigation Actions

The planning committee was provided an introduction to update and development of mitigation actions. Each jurisdiction was provided with a copy of the actions included in the current plan. Jurisdictional representatives were requested to provide updates as to: (1) action status – "completed," "pending/on-going," "deleted," or "modified"; (2) updates to the text and a description of the progress for any pending actions. The group was reminded that each participating jurisdiction must have at least one action and that all NFIP jurisdictions must have an NFIP-related action. Participants were also given a copy of sample actions and forms for adding new actions to the plan. The updates on the current actions and any new actions were requested to be returned to Jeanne Bunting by October 5, 2013. Further discussions regarding mitigation actions and prioritizing the actions will take place at the final mitigation planning meeting.

Next Steps

The meeting concluded with a discussion of the remaining steps to complete the planning process as follows:

- **October 5, 2013 — Data Collection Guides Due to KDEM**
- **October 5, 2013 — Mitigation Action Updates + New Actions Due to KDEM**
- **TBD — Meeting #2 with Emergency Managers ONLY (during KEMA Region Mtg)**
- **TBD — Meeting #3**
- **March/April 2014 — Submit Plan to FEMA**
- **May 2014 — Anticipate FEMA's Approval Pending Adoption**

REGION J MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN – KICKOFF MEETING, SIGN-IN SHEET

Project: Region J Hazard Mitigation Plan – Kickoff Meeting

Meeting Date: 8/26/13

Facilitator: Kari Valentine

Place/Room: Shawnee County Health Agency Topeka Ks 66606

Name	Department/Agency	County	Email	Phone #	Signature
Dusty Nichols	SNCO Emer Mgmt	Shawnee	dustin.nichols@snco.us	251 4152	
Scott Garcia	SNCO EM	Shawnee	scott.garcia@snco.us	251-4153	
TOM NOBLE	SILVER LAKE	SHAWNEE	POPSNPT@GMAIL.COM	925-6447	
Heather Dunlap	City of Willard	Shawnee	willardemc@yahoo.com	224-6174	
Jennifer Zeller	Shawnee Co. Health Agency	Shawnee	jennifer.zeller@snco.us	251-2736	
Marques Williams	AMEC		marques.williams@amec.com	(731) 588-8825	
Russell Kolcik	CITY OF SILVER LAKE	Shawnee	SLCityshop@EMBARQMAIL.com	785-582-4290	
Kevin Flory	SNCO Emr Mgmt	Shawnee	Kevin.flory@snco.us	251-4560	
Michelle Wolfe	FEMA		michelle.wolfe@fema.dhs.gov	816.276.5088	
Steve Samuelson	DWR		steve.samuelson@kda.ks.gov	785-296-4622	
Jim Green	City of Topeka EM	Shawnee	jim.green@topeka.org	785-368-1942	
Jake Gray	KDEM	SH	jacob.s.gray.nfg@mail.mil	274-1973	
Ben Grower	KDEM	SH	benjamin.f.grower3.nfg@mail.mil	274 1878	

amec

REGION J MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN – KICKOFF MEETING, SIGN-IN SHEET

Project: Region J Hazard Mitigation Plan – Kickoff Meeting

Meeting Date: 8/26/13

Facilitator: Kari Valentine

Place/Room: Shawnee County Health Agency Topeka Ks

Name	Department/Agency	County	Email	Phone #	Signature
JEFF OVERMYER	ROSSVILLE	SN		785-584-6155	
Dave Taylor	Menoken Twp	SN		785-817-1269	
Nick Callaghan	SNCO GIS	SN	Nick.CALLAGHAN@SNCO.US	785 251 6050	
Stephen Miller	City of Topeka	SN	Stmiller@Topeka.org	785-368-1640	
ERIN MAHAN	SNCO SHERIFF OFC	SN	ERIN.MAHAN@SNCO.US	785-251-2214	
Barry Beagle	SNCO PLANNING	SN	barry.beagle@snco.us	785-291-4905	
Nancy Lamb	KDEM	State	nj_lamb@hotmail.com nancy.j.lamb2.nfg@mail.mil	785-817-6083	
Matt Eyer	Blue Umbrella	—	Matt@BlueUmbrella.co	303 552 1181	
Brett Starbuck	SN Co Health Agency	SN	brett.starbuck@snco.us	785.251.2011	
KEVIN GREGG	KAW VALLEY ELECTRIC	SN	KGREGG@KVE.COOP	478-3444	

amec

REGION J MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN – KICKOFF MEETING, SIGN-IN SHEET

Project: Region J Hazard Mitigation Plan – Kickoff Meeting

Meeting Date: 8/26/13

Facilitator: Kari Valentine

Place/Room: Shawnee County Health Agency, Topeka Ks

Name	Department/Agency	County	Email	Phone #	Signature
Renee Aldrich	Red Cross	Shawnee	renee.aldrich@redcross.org	785-230-5326	Renee Aldrich
Bill Ross	Silver Lake Township	Shawnee	rossboss@embarqmail.com	785-582-4365	William R Ross
Brandy Biltoft	Shawnee Co. DOC	Shawnee	brandy.biltoft@snco.us	785-251-7701	Brandy Biltoft
Miriam Berke	City of Topeka	Shawnee	mberke@topeka.org	785-368-1600	M. Berke
Susan Belt	AMEC	Shawnee	susan.belt@amec.com	785-640-3633	S Belt

amec

To	**Region "J" Hazard Mitigation Planning Committee**
Through	**Jeanne Bunting, Mitigation Planner** **Kansas Division of Emergency Management (KDEM)**
From	**Susan Belt, MT(ASCP), AMEC Environment & Infrastructure, Inc**
Tel / E-mail	**785-272-6830 / susan.belt@amec.com**
Date	**8/29/2013**
Subject	**Minutes from the Region "J" Anderson and Linn Counties Regional Mitigation Planning Meeting held on 8/27/2013 in Garnett, KS.**

This document is a record of attendance and a summary of the issues discussed during the above meeting. Topics covered during the meeting included: (1) an introduction to the purpose of hazard mitigation planning, (2) the benefits of a multi-jurisdictional approach, (3) the reasons for and benefits of the regional mitigation planning process, and (4) grant programs linked to an approved plan. The hazard mitigation planning process was reviewed to include requirements for public involvement and the use of data collection guides. The planning committee reviewed the list of hazards to be used as a part of the regional plan. Mrs. Belt explained that the State Hazard Mitigation Team had decided with the current update of the State Plan to profile the hazard Civil Disorder as a separate hazard rather than including it as a part of the Terrorism hazard. The group discussed mitigation actions and the availability of grant programs during the meeting. The meeting concluded with a discussion of the next steps in the planning process. The formal presentation portion of the meeting began at 7:00 pm and concluded at 8:45 pm.

Attendees

Name	Organization
Chuck Alfers	Lyon Coffey Rural Electric Cooperative
Doug Bartlet	Linn County Emergency Management
Mick Brickmeyer	Anderson County Emergency Management
Phil Bures	City of Garnett
Matt Eyer	Blue Umbrella Consulting
Zach Hill	City of Greeley, Greeley Fire Department
Dee Horttor	Linn County Emergency Management
J.D. Mersman	Anderson County Emergency Management
Steve Samuelson	Kansas Department of Agriculture
Jerry Turner	USD 479
Lynn Wobker	Pottawatomie Creek Watershed

Introductions

JD Mersman, Anderson County Emergency Management, began the meeting by welcoming and thanking the attendees. Participants introduced themselves and identified what jurisdiction they represented. Susan Belt, AMEC, provided the formal portion of the presentation.

Introduction to Hazard Mitigation Planning

Mrs. Belt presented information on the purpose and requirements of the Disaster Mitigation Act of 2000. The attendees were reminded that this is a regional planning effort which will combine all of the current local mitigation plans in Region "J." Those plans include: Anderson, Coffey, Franklin, Linn, Miami, Osage, and Shawnee Counties. Once the regional plan is approved, it will supersede the previous plans. The presentation also addressed the benefits for jurisdictions participating in this mitigation plan update, including eligibility for federal hazard mitigation assistance funding programs. Historically, the region has received nearly $2.5 million in Hazard Mitigation Assistance grants. The group also discussed the Siren grant program that began in 2011. Region J has received more than $225,000 for 15 warning sirens in the region.

Mrs. Belt described the benefits of participating in a multi-jurisdictional plan as improving coordination and communication among local jurisdictions and that these hazards do not stop at jurisdictional boundaries thus this multi-jurisdictional plan allows for a more comprehensive approach. The group also heard information regarding the significant cost savings being realized by the regional approach to planning. There are currently insufficient funds available to provide the full cost of updates to each county plan. The regional approach now being used allows planning services to be provided to each county for the update at no cost to the county. Matt Eyer with Blue Umbrella will be completing the Region "J" mitigation plan for committee review.

Mrs. Belt also described the role of the Hazard Mitigation Planning Committee (HMPC).Each jurisdiction participating in development of the plan must meet the following minimum requirements:

- Designate a representative to serve on the Region "J" Hazard Mitigation Planning Committee, which will meet **twice** during the planning process,
- Provide data for and assist in the development of the updated risk assessment that describes how various hazards impact your jurisdiction,
- Provide data to describe current capabilities,
- Develop/update mitigation actions (at least one) specific to your jurisdiction,
- Provide comments on plan drafts as requested,
- Inform the public, local officials, and other interested parties about the planning process and provide opportunities for them to comment on the plan, and
- Formally adopt the mitigation plan.

Planning for Public Involvement

The local/regional hazard mitigation plan requirements state that the public must have the opportunity to comment on the plan. The public will be given two opportunities to comment on the plan, once during the drafting stage and another when the plan is complete in the final draft stage. KDEM is planning to utilize Facebook pages to advertize the planning meetings, and to provide a vehicle for the public to make comments regarding the process and plan drafts. Jeanne Bunting with KDEM will provide additional information regarding the pages at a future meeting. The meeting attendees discussed methods for notifying the public in the plan. The group discussed methods that are used to effectively engage the public in their Counties. Examples included using Survey Monkey to survey the public, using social media, city, county and school websites. School representatives and city officials present at the meeting agreed to place information on their websites related to surveys and plan review locations. Local

Emergency Management Agencies will coordinate the appropriate links to the surveys. Participants were asked to contact their local emergency manager to assist with public participation.

Data Collection Process

Mrs. Belt explained the process being used to collect data for vulnerability and loss for each jurisdiction for the State of Kansas plan. This data will likely be utilized during the regional plan development process. The participating jurisdictions were provided hard copies of Data Collection Guides. KDEM will follow-up after the meeting with electronic copies emailed to the attendees. Local County Emergency Management Agencies will follow-up with jurisdictions that were not in attendance at this meeting to provide an overview of the process being used and copies of data collection guides for completion. The Data Collection Guides are specific for local units of government and schools. There are two different guides, one for local governments, and one for schools and universities. The jurisdictions were requested to provide data regarding hazards that had occurred in their jurisdiction since the last plan update (2009 to 2012) for the 22 hazards that are in the Regional Plan. The Data Collection Guides were requested to be returned to Jeanne Bunting by October 5, 2013. Mrs. Belt reminded the group that copies of photos and newspaper articles are also helpful in putting the plan together. The group had questions regarding conduct of individual county meetings, and Ms. Bunting explained the documentation process that is necessary to assure that jurisdictions meet the participation requirements.

Plan Format/ Regional and Countywide Risk Assessment

Mrs. Belt, with the help of Blue Umbrella staff, reviewed the process for integrating the plans. The list of hazards in the State of Kansas plan is the list that is being used for the regional plans. Several of the hazards included in the State Plan were not included in the current plan for a few of the counties in Region J. Those counties will need to provide additional information for the risk assessment. Most of the plans in Region J did not utilize the same methodology for ranking hazards that is used by the State Plan and that will be used for the Regional Plans. Blue Umbrella staff will be updating the regional hazard ranking using the State Plan methodology for hazards in their current plan and the new Civil Disorder hazard.

Mitigation Actions

The planning committee was provided an introduction to update and development of mitigation actions. Each jurisdiction was provided with a copy of the actions included in the current plan. Jurisdictional representatives were requested to provide updates as to: (1) action status – "completed," "pending/on-going," "deleted," or "modified"; (2) updates to the text and a description of the progress for any pending actions. The group was reminded that each participating jurisdiction must have at least one action and that all NFIP jurisdictions must have an NFIP-related action. Participants were also given a copy of sample actions and forms for adding new actions to the plan. Mrs. Belt also discussed the concept of regional actions to be included as well as actions for each local entity. The updates on the current actions and any new actions were requested to be returned to Jeanne Bunting by October 5, 2013. The date for the final planning meeting will be sent to each agency. At that final meeting, the mitigation actions for the plan will be prioritized.

Next Steps

The meeting concluded with a discussion of the remaining steps to complete the planning process as follows:

- **October 5, 2013 — Data Collection Guides Due to KDEM**
- **October 5, 2013 — Mitigation Action Updates + New Actions Due to KDEM**
- **April/May 2014 — Submit Plan to FEMA**
- **July 2013 — Anticipate FEMA's Approval Pending Adoption**

REGION J MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN – KICKOFF MEETING, SIGN-IN SHEET

Project: Region J Hazard Mitigation Plan – Kickoff Meeting

Facilitator: Susan Belt

Meeting Date: 8/27/13

Place/Room: Anderson County Community Bldg Garnett, Ks

Name	Department/Agency	County	Email	Phone #	Signature
JD Mersman	Anderson Co EM	Anderson	jmersman@andersoncountyks.org	785-448-4194	
Dee Horttor	Linn Co EM	Linn	LNFD906@CKT.NET	620-768-9130	
Chuck Alfers	Lyon coffey Rec	Anderson	chuckA@Lyon-coffey.coop	620 364 2116	
MATT EYLER	Blue Umbrella	—	Matte BlueUmbrella.Co	303 552 1141	
Lynn Wobker	Pottawatomie Creek Watershed			785-448-3642	
Jerry Turner	USD 479	Anderson	jturner@usd479.org	6208523540	
Steve Samuelson	DWR	Kansas Dept. Agriculture Division Water Res.	steve.samuelson@kda.ks.gov	785-296-4622	
Mick Brinkmeyer	Anderson Co. EM	Anderson	chief573@yahoo.com	785-448-4402	
Phil Bures	City of Garnett	Anderson	Philip@garnettks.net	448-5494	
Zach Hill	City of Greeley Greeley FD	Anderson	zach-hill86@hotmail.com	448-4533	
Doug BARLET	Linn Co. E.M.	Linn	LNFD905@CKT.NET	620 224-6470	

amec

To **Region "J" Hazard Mitigation Planning Committee**

Through **Jeanne Bunting, Mitigation Planner**
Kansas Division of Emergency Management (KDEM)

From **Kari Valentine, AMEC Environment & Infrastructure, Inc**

Tel / E-mail **785-272-6830 / kari.valentine@amec.com**

Date **9/5/2013**

Subject **Minutes from the Region "J" Osage and Coffey Counties Kickoff Planning Meeting held on 8/29/2013 in Lyndon, KS.**

This document is a record of attendance and a summary of the issues discussed during the above meeting. Topics covered during the meeting included: (1) Review Disaster Mitigation Act Planning Requirements, (2) Regional Mitigation Planning Process, (3) Grant Program Availability Linked to Approved Plan, (4) Multi-jurisdictional Planning, (5) Data Collection Guides, (6) Public Participation Strategy, (7) Hazard Identification, (8) Mitigation Actions, and (9) Project Schedule. The formal presentation portion of the meeting began at 1:00 pm and concluded at 2:45 pm.

Attendees

First Name	Last Name	Organization	County
Renee	Aldrich	American Red Cross	Osage & Coffey
Gaylord	Anderson	Osage County Commissioner	Osage
Becky	Bartley	Osage County	Osage
Rhonda	Beets	Osage County	Osage
Stacy	Berry	Osage County Appraiser	Osage
Jeanne	Bunting	KS Division of Emergency Management	State
Bradley	Cox	U.S. Corps of Engineers	Federal
Laurie	Dunn	Osage County Sheriff's Office	Osage
Matt	Eyer	Blue Umbrella	Contractor
Jim	Franz	U.S. Corps of Engineers	Federal
Terri	Fultz	City of Osage City	Osage
Jacob	Gray	KS Division of Emergency Management	State
Fred	Hallowell	City of Osage City	Osage
Troy	Hutton	USD 420 Osage City	Osage
Jim	Koger	City of Overbrook	Osage
Nancy	Lamb	KS Division of Emergency Management	State
Carl	Lee	Coffey County	Coffey
Bret	Lewis	Osage County Sheriff's Office	Osage
Susan	McDonald	Osage County Health Dept.	Osage
Kim	Newman	City of Lyndon	Osage
Carol	Retzer	Osage County Rural Water District #3	Osage
Rachel	Roberts	USDA, FSA	Federal
Bryce	Romine	Osage County Emergency Management	Osage
Steve	Samuelson	KS Division of Water Resources	State
Rod	Schaub	Frontier Extension District	State
Lee Ann	Smiley	City of Burlingame	Osage

First Name	Last Name	Organization	County
Brian	Spencer	USD 421 Lyndon	Osage
Russel	Stukey	Coffey County Emergency Management	Coffey
Gary	Summers	Township	Osage
James	Welch	City of Burlingame	Osage
Michelle	Wolfe	FEMA Region VII	Federal

Introductions

Bryce Romine, with Osage County Emergency Management, began the meeting by welcoming and thanking the attendees. Participants introduced themselves and identified what jurisdiction they represented. Kari Valentine, with AMEC, provided the formal portion of the presentation.

Review Disaster Mitigation Act Planning Requirements

Ms. Valentine presented information on the purpose and requirements of the Disaster Mitigation Act of 2000. The presentation addressed the benefits, including eligibility for federal funding programs, for jurisdictions participating in this mitigation plan update.

Regional Mitigation Planning Process

The attendees were reminded that this is a regional planning effort which will combine all of the county multi-jurisdictional hazard mitigation plans in Region "J". Therefore, the plan will include the seven counties of: Anderson, Coffey, Franklin, Linn, Miami, Osage and Shawnee. Once the regional plan is approved, it will supersede the current plans. The first county plan to expire is Osage County on June 11, 2014. The presentation also addressed the benefits for jurisdictions participating in this mitigation plan update.

Grant Program Availability Linked to Approved Plan

Jurisdictions have received federal hazard mitigation assistance funding in the past. Historically, the region has received over $2.4 million in Hazard Mitigation Assistance grants. The group also discussed the siren grant program that began in 2011. Region "J" has received $225,000 for 15 outdoor warning sirens in the region. Other state and federal funding sources for mitigation projects were also mentioned.

Multi-jurisdictional Planning

Ms. Valentine described the benefits of participating in a multi-jurisdictional plan, including improved coordination and communication among local jurisdictions. Hazards do not stop at jurisdictional boundaries, thus this multi-jurisdictional plan allows for a more comprehensive approach. The group also heard information regarding the significant cost savings being realized by the regional approach to planning. There are currently insufficient funds available to provide



the full cost to update county plans.

The regional approach now being used allows planning services to be provided to each county for the update at no cost to the county. KDEM has hired a contractor to assist with the research and writing effort. Matt Eyer with Blue Umbrella will be completing the Region "J" mitigation plan. The committee will review the draft prior to being finalized

Ms. Valentine also described the role of the Hazard Mitigation Planning Committee (HMPC). Each jurisdiction participating in development of the plan must meet the following minimum requirements:

- Designate a representative to serve on the Region "J" Hazard Mitigation Planning Committee, which will meet **twice** during the planning process,
- Provide data for, and assist in the development of, the updated risk assessment that describes how various hazards impact your jurisdiction,
- Provide data to describe current capabilities,
- Develop/update mitigation actions (at least one) specific to your jurisdiction,
- Provide comments on plan drafts as requested,
- Inform the public, local officials, and other interested parties about the planning process and provide opportunities for them to comment on the plan, and
- Formally adopt the mitigation plan.

Data Collection Process

The participating jurisdictions at the meeting were provided hard copies of Data Collection Guides. KDEM will follow-up after the meeting with electronic copies emailed to the attendees. Osage County Emergency Management will follow-up with jurisdictions that were not in attendance at this meeting to provide an overview of the process being used and copies of Data Collection Guides for completion. There are two different guides, one for local governments, and one for schools and universities. The jurisdictions were requested to provide data regarding hazards that had occurred in their jurisdiction since the last plan update (2010 to 2013) for the hazards in their county's current plan and for the past 10 years of events for the new hazards that are in the Regional Plan.



The Data Collection Guides were requested to be returned to Jeanne Bunting by October 5, 2013. The full formal name of your jurisdiction is requested on the Data Collection Guide. KDEM is working with jurisdictions throughout the State and want to make sure data is correctly documented for jurisdictions.

Ms. Valentine stated that KDEM will accept historical hazard information in any format which includes newspaper articles, newsletters, website links. Hazard photos are always useful in showing the damage.

Public Participation Strategy

The local/regional hazard mitigation plan requirements state that the public must have the opportunity to comment on the plan. The public will be given two opportunities to comment on the plan, once during the drafting stage and another when the plan is complete in the final draft stage. KDEM is planning to utilize Facebook pages to advertise the planning meetings, and to provide a vehicle for the public to make comments regarding the process and plan drafts. Jeanne Bunting with KDEM will provide additional information regarding the Facebook pages at the next meeting.

The meeting attendees discussed methods for notifying the public in the plan. The group mentioned that information on the county website has been effective in engaging the public in Osage County.

Hazard Identification and Profiles

The list of hazards in the 2013 updated State of Kansas plan is the list that is being used for the regional plans. Several of the hazards included in the State Plan were not included in the current plans for several counties in Region "J". Those counties will need to provide historical information on the new hazards for the risk assessment.

Steve Samuelson, Kansas Division of Water Resources, stated he would work with Community Rating System (CRS) communities to make sure the new CRS manual guidance is met for this regional mitigation plan update. The CRS program is available to communities that participate in the National Flood Insurance Program (NFIP). Participation in the CRS program allows communities to obtain discounts on flood insurance for policy holders.



Mitigation Actions

The planning committee was provided an introduction to update and develop mitigation actions. Each jurisdiction was provided with a copy of the actions included in the current plan. Jurisdictional representatives were requested to provide updates as to: action status – "completed," "pending/on-going," "deleted," or "modified", along with details stating completion dates and an explanation as to why an action has that status.

The group was reminded that each participating jurisdiction must have at least one action and that all NFIP jurisdictions must also have an NFIP-related action. Participants were also given a copy of sample actions and forms for adding new actions to the plan. On the form, there is a blank for the Responsible Office to be identified. The Responsible Position within the Office is also wanted. The updates on the current actions and any new actions were requested to be returned to Jeanne Bunting by October 5, 2013. Further discussions regarding mitigation actions and prioritizing the actions will take place at the final mitigation planning meeting.

Project Schedule

The meeting concluded with a discussion of the remaining steps to complete the planning process as follows:

- **October 5, 2013 — Data Collection Guides Due to KDEM**
- **October 5, 2013 — Mitigation Action Updates + New Actions Due to KDEM**
- **TBD — Meeting #2 with Emergency Managers ONLY (during KEMA Region Mtg)**
- **TBD — Meeting #3**
- **March/April 2014 — Submit Plan to FEMA**
- **May 2014 — Anticipate FEMA's Approval Pending Adoption**

REGION J MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN – KICKOFF MEETING, SIGN-IN SHEET

Project: Region J Hazard Mitigation Plan – Kickoff Meeting

Meeting Date: 8/29/13

Facilitator: Kari Valentine, AMEC

Place/Room: Lyndon Community Center, Lyndon, KS

Name	Department/Agency	County	Email	Phone #	Signature
Bryce Romine	Os Co Em Mgt	Osage	BROMINE@OSCOSHERIFF.ORG	785 828 3323	Bryce Romine
Carol Sitz	Os Co RWD #3	Osage	osrwd3@embarqmail.com	785 828 4545	Carol Sitz
Rachel Roberts	USDA, FSA	Osage	rachel.roberts@ks.usda.gov	828-4631	Rachel Roberts
Gaylord Anderson	Os. Co. Comm.	Osage	gaylorda@firstsecurity.ks.com	785 836-7621	Gaylord Anderson
Lee Ann Smiley	City of Burlingame/Park	Osage	lsmiley@burlingameks.com	785-654-2414	Lee Ann Smiley
Susan McDonald	OC Health	Osage	smcdonald_och@earthlink.net	785 828 3117	Susan McDonald
Terri Fultz	Osage City	Osage	tfultz@osagecity.com	785-528-3114	Terri Fultz
Fred Hallowell	OSAGE Co.	Osage	fhall@osagecity.com	3714	Fred Hallowell
Jim Franz	USACE	Osage	james.d.franz@usace.army.mil	785-549-3318	Jim Franz
Brian Spencer	Lyndon USD 421	Osage	spencerb@usd421.org	785-828-4413	Brian Spencer
Bret Lewis	OCEM	Osage	blewis@oscosheriff.org	785-828-3121	Bret Lewis
James Klecka	City of Burlingame Bldg Insp. & ME	Osage	bgamefire607@yahoo	785 817 4061	James Klecka
Jim Kogen	Overbrook	Osage	cityclerk@overbrookks.com	785-665-7328	Jim Kogen

amec

REGION J MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN – KICKOFF MEETING, SIGN-IN SHEET

Project: Region J Hazard Mitigation Plan – Kickoff Meeting

Meeting Date: 8/29/13

Facilitator: Kari Valentine, AMEC

Place/Room: Lyndon Community Center, Lyndon, KS

Name	Department/Agency	County	Email	Phone #	Signature
Gary Summers	Townships	Osage	gfsummers@embarqmail.com	8283478	Gary Summers
Michelle Wolfe	FEMA		michelle.wolfe@fema.dhs.gov	816.276.5088	Michelle Wolfe
Steve Samuelson	Division Water Resources		steve.samuelson@kda.ks.gov	785-296-4622	Steve Samuelson
Matt Eyer	Blue Umbrella		Matt@BlueUmbrella.Co	303 552 1181	MJE
Nancy Lamb	KDEM	State	nancy.j.lamb2.nfg@mail.mil	785-274-1473	Nancy Lamb
Jacob Gray	KDEM	State	jacob.s.gray.nfg@mail.mil	785-274-1473	J S Gray
Troy Hutton	USD 420	Osage	thutton@usd420.org	785-528-3176	Troy Hutton
Rhonda Beem	Osage Co	Osage	OS_County_Clerk@unkda.state.ks.us	785-828-4810	Rhonda Beem
Ricky Bartley	Osage Co	Osage	b_bartley@osageco.org	828-3347	R Bartley
Carl Lee	CF CO	Coffey	clee@coffeycountyks.org	364-8631	Carl Lee
Russel Stukey	CF CO EM	CF	rstukey@coffeycountyks.org	364-2721	Russel Stukey
Stacy Berry	Osage Co Appraiser	OS	sberry@osageco.org	785 828 3124	Stacy Berry
Bradley Cox	US Army Corps of Engineers		Bradley.a.cox@usace.army.mil	785-453-2201	Bradley A Cox

amec

REGION J MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN – KICKOFF MEETING, SIGN-IN SHEET

Project: Region J Hazard Mitigation Plan – Kickoff Meeting

Meeting Date: 8/29/13

Facilitator: Kari Valentine, AMEC

Place/Room: Lyndon Community Center, Lyndon, KS

Name	Department/Agency	County	Email	Phone #	Signature
Rod Schaub	Frontier Extension District	Osage	rschaub@ksu.edu	785 828-4438	Rod Schaub
Laurie Dunn	Osage Co Sheriff		ldunn@oscosheriff.org	785 828 3121	Laurie Dunn
Kerri Nunn	Lyndon	Osage	LyndonKansas@gmail.com	828 314Ce	Kerri Nunn
Renee Aldrich	Red Cross		renee.aldrich@redcross.org	785-230-5324	Renee Aldrich
Jeanne Bunting	KDEM				Jeanne Bunting

amec

LINN COUNTY 2013 HAZARD MITIGATION PLANNING MEETING

PARTICIPANT ROSTER

Friday, September 06, 2013

NAME	REPRESENTING	PHONE NUMBER	EMAIL
Dee Horthor	LNEM	620-768-9130	LNFD906@CKT.NE
Paul Fiala	LNSO	913 795-2665	SHERIFFFIALA@LINNCOUNTYSO.COM
Robert Shryer	Prescott	913 471 4804	
Linda Meisel	LaCygne	337 302 4562	yayameisel@yahoo.c
Doug Barlet	Linn County	(620) 224-6470	LNFD905@CKT.NET
Max Krull	Blue Mound	785-229-2245	mdsat@msn.com
Steve Porzio	PWWSD #13	620-224-6523	pwwsd13linncounty@ya
Harry Smith	PWWSD #13	620-224-6513	Same
Clint Johnson	Mound City	913-795-2749	mcpd101@gmail.com
Patrick Martin	US FWS	913-352-8956	patrick_martin@fws.gov
JACKIE TAYLOR	LINN CTY NEWS	913-352-6755	Jackielcn@ckt.net
Chris Kleidosty	USD 362	913-757-2677	chrisk@pv362.org
Royce Powelson	USD 346	913 795 2247	rpowelson@usd346.org
Travis Lacer	USD 344	913352-8534	Travis.lacer@usd344.org

To	**Region "J" Hazard Mitigation Planning Committee**
From/ Through	**Matt Eyer, Blue Umbrella Solutions** **Kansas Division of Emergency Management**
Date	**01/21/2014**
Subject	**Minutes from the Region "J" Mid-Term Meeting held on 01/21/2014 in Emporia, KS.**

This document is a summary of the issues discussed during the above meeting. Topics covered during the meeting included: (1) a review of available grants with a mitigation plan, (2) a review of participation requirements and to date participating jurisdictions, (3) a review of hazards and assigned CPRIs (4) a review of mitigation goals, (5) a review of the plan (6), a discussion of to date public feedback, and (5) a discussion of next steps.

Attendees

A complete list of attendees may be found on the attached meeting sing-in forms.

Introductions

Matt Eyer, Blue Umbrella Solutions, began the meeting by welcoming and thanking the attendees.
Matt Eyer, Blue Umbrella Solutions, provided the formal portion of the presentation.

Review of Available Grants

Attendees were reminded of the grant funding streams that were open and available with an approved mitigation plan.

Review of Participation Requirements and Participating Jurisdictions

Mr. Eyer presented information on the requirements imposed on jurisdictions in order to be considered participating. In addition, each county was presented with a review of what was required, if anything, from each jurisdiction within that county. Participating counties were provided with a handout that detailed the above discussion.

Review of Hazards and Assigned CPRIs

Each of the 22 identified hazards was briefly discussed along with the rationale for each CPRI rating. Participating counties were provided with a handout that detailed both their County specific CPRI for each hazard and the aggregate CPRI for the region. Agreement on the hazards and CPRIs was achieved.

Review of Mitigation Goals

Attendees were presented with the derived mitigation goals for the region. Attendees were asked to review each of the four goals and provide any suggestions for modification. All were in agreement that the goals presented were ideal.

Review of Plan

Attendees were presented with an overview of each plan section, including data contained within.

Review of Public Feedback

The local/regional hazard mitigation plan requirements state that the public must have the opportunity to comment on the plan. Meeting attendees were asked to continue providing an avenue for public feedback by making the surveymonkey.com link available over participating jurisdiction websites if possible. Additionally, attendees were reminded of the two week open comment period when the draft plan is complete. To date public feedback was presented to the attendees.

Next Steps

The meeting concluded with a discussion of the remaining steps to complete the planning process as follows:

County emergency managers receive Draft Plan for mid-term review
Incorporation of changes and finalization of plan
Two week public comment period
Submission to KDEM for review and approval
Submission to FEMA for review and approval pending adoption
Adoption by participating jurisdictions

NE KEMA Meeting Sign In Sheet -1/21/2014

Last Name	First Name	Agency/Organization	Signature
Barlet	Doug	Linn Co. Emergency Mgmt.	
Bartley	Cortney	Coffey Co. Emergency Mgt.	
Baughman	Mike	Wyandotte Co. Emergency Mgt	
Berges	Garry	Geary Co. Emergency Mgt.	
Blackledge	Chris	Morris Co. Emergency Mgt.	
Boatright	Les	KCP&L	
Boettcher	Carrie	ESU	
Brazzle	Bruce	Pottawatomie Co. Emergency Mgmt	
Buchanan	Kim	Leavenworth Co. Emerg. Mgt.	
Casteel	Nelson	Shawnee Co. Emergency Mgt	
Clark	Brian	Geary Co. Emergency Mgt.	
Collins	Patrick	Riley Co. Emergency Mgt.	
Costello	Mike	Johnson Co. Emergency Mgt.	
Eckard	Vickie	Franklin Co. Emergency Mgt.	
Eker	Larry	Wyandotte Co. Emergency Mgt	
Flory	Kevin	Shawnee Co. Emergency Mgt	
Frevert	Rick	Lyon Co. Emergency Mgt.	
Garcia	Scott	Shawnee Co. Emergency Mgt	
Gerst	Carolyn	Johnson Co. Emergency Mgmt	
Gibbs	Tim	Miami Co. Emergency Mgt.	
Hallenbeck	Chris	Ft. Riley Emergency Mgt.	
Harrison	Laurie	Riley Co. Emergency Mgt.	
Hughes	John	Ft. Leavenworth Emergency Mgt.	
Kirmse	Ida	EMFusion	
Ladner	Rob	KDWPT	
Lamb	Nancy	KDEM	
Lockett	Timothy P.	Member	
Magaha	Chuck	Leavenworth Co. Emerg. Mgt.	

Last Name	First Name	Agency/Organization	Signature
Marmon	John M.	KU - Public Safety Office	
May	Matt	Johnson Co. Emergency Mgt.	
McConaha	Gerard	Johnson Co. Emergency Mgt.	
Meng	Julie	Doniphan Co. Emergency Mgt.	
Mersman	J.D.	Anderson Co. Emergency Mgt	
Nelson	Steven	KS Air National Guard	
Nichols	Dusty	Shawnee Co. Emergency Mgt	
Omitt	Chad	National Weather Service	
Pittman	Trent	Johnson Co. Emergency Mgmt	
Presley	Amber	Coffey Co. Emergency Mgt.	
Radcliffe	Alan	Franklin Co. Emergency Mgt.	
Robeson	Dan	Johnson Co. Emergency Mgt.	
Rodrigue	Jillian	Douglas Co. Emergency Mgt.	
Romine	Bryce	Osage Co. Emergency Mgt.	
Starbuck	Ronald	KDHE/WyCo	
Schwindamann	Bill	Marshall Co. Emerg. Mgmt.	
Smith	Teri	Douglas Co. Emergency Mgt.	
Steele	James	Shawnee Co. Emergency Mgt	
Sterbenz	Dave	Shawnee Co. Emergency Mgt	
Stukey	Russel	Coffey Co. Emergency Mgt.	
Sunter	Glenda	Lyon Co. Emergency Mgt.	
Swart	Todd	Nemaha Co Emergency Mgt.	
Swoboda	Deborah	Washington Co. Emerg. Mgt.	
Terrapin	Amy	Wabaunsee Co. Emerg. Mgt.	
Thurman	Gary	United Way of Greater KC 2-1-1	
Trudo	Chris	Pottawatomie Co. Emergency Mt	
Tyler	Carly	Marshall Co. Emerg. Mgmt.	
Wolkey	Ryan	Douglas Co. Emergency Mgt.	
Yoder	Keith	KDEM	

Last Name	First Name	Agency/Organization	Signature
Hunter	Natasha	Linn Co EM Planner	

To	**Region "J" Hazard Mitigation Planning Committee**
Through	**Jeanne Bunting, Mitigation Planner** **Kansas Division of Emergency Management (KDEM)**
From	**Matthew Eyer, Blue Umbrella Solutions**
Tel / E-mail	**303-552-1181 / Matt@blueumbrella.co**
Date	**03/17/2014**
Subject	**Minutes from the Region "J" Final Meeting held on 03/17/2104 in Garnett, KS.**

This document is a record of attendance and a summary of the issues discussed during the above meeting. Topics covered during the meeting included: (1) a final review of plan participating jurisdictions, (2) a final review of mitigation goals, (3) a review of final hazards and CPRIs, (4) a review of available grants with a mitigation plan, and (5) incorporation of final edits. The meeting concluded with a discussion of the next steps in the planning process. The formal presentation portion of the meeting began at 9:00 pm and concluded at approximately 10:00 pm.

Attendees

A complete list of attendees may be found on the attached meeting sing-in forms.

Introductions

Matt Eyer, Blue Umbrella Solutions, began the meeting by welcoming and thanking the attendees.
Matt Eyer, Blue Umbrella Solutions, provided the formal portion of the presentation.

Review of Plan Participating Jurisdictions

Mr. Eyer presented information on highlighting participating jurisdictions by county. Attendees were present with a series of slides showing the participating jurisdictions. Attendees were given the opportunity to review each jurisdiction to ensure all were included in the plan. In addition, attendees were provided with information concerning special districts, such as rural Water Districts or Fire Districts. They were informed that while these districts were not required to formally adopt the plan, in doing so they are given the opportunity to oversee awarded grant funding rather than have the county oversee the funding.

Review of Mitigation Goals

Attendees were presented with the final regional mitigation goals for the region.

Review of Hazards and Assigned CPRIs

Each of the 22 identified hazards was briefly discussed along with the rationale for each CPRI rating.

Review of Available Grants

Attendees were reminded of the grant funding streams that were open and available with an approved mitigation plan.

Incorporation of Final Edits

Attendees were given an opportunity to review the completed draft plan. Any changes or additions were noted to be included in the final plan edit.

Next Steps

The meeting concluded with a discussion of the remaining steps to complete the planning process as follows:

- **April 2014 — Make plan available to public for two week final review**
- **May 2014 — Submit Plan to KDEM**
- **May 2014 — Submit Plan to FEMA**
- **June 2014 — Plan approval and availability for adoption**

Location: Anderson County Law Enforcement Center
Date: March 17, 2014
Start:

Name	Organization	County	Phone and Email
Clint Johnson	Mound City Police Dept.	Linn	913-745-2749 mcpd101@gmail.com
LANCE BURROUGHS	PARKER KS	LINN	913-898-2195
Paul Norris	Heartland REC	Multiple	620-224-8251 paul@heartland-rec.com
Bobby Johnson	USD #362 Prairie View	Linn	913-837-7205 bobbyj@pv362.org
Jeanne Bunting	KDEM	State	
Larry Streeter	USD 344	Linn	913-285-9293 larry.streeter@usd344.org
Linda Meisel	City of Halcyone	Linn	3373024562 yayameisel@yahoo.com
Nancy Lamb	KDEM	State	785-274-1493 nancy.j.lamb2.nfg@mail.mil
J.D. Mersmann	ANCO EM	Anderson	785-448-4194 jmersmann@andersoncountyks.org
MAX KRULL	CITY OF BLUE MOUND	LINN	785-229-2245 mdsgt@msn.com
Todd Stone	City of Linn Valley	Linn	913-755-1368 lvfd6103@yahoo.com
Dee Hartter	Linn Co EM	LINN	913-352-8125 LNED906@CKT.NET
Natasha Hunter	Linn Co EM	Linn	620-224-4189 LNEM907@CKT.net

To	**Region "J" Hazard Mitigation Planning Committee**
Through	**Jeanne Bunting, Mitigation Planner** **Kansas Division of Emergency Management (KDEM)**
From	**Matthew Eyer, Blue Umbrella Solutions**
Tel / E-mail	**303-552-1181 / Matt@blueumbrella.co**
Date	**03/20/2014**
Subject	**Minutes from the Region "J" Final Meeting held on 03/20/2104 in Ottowa, KS.**

This document is a record of attendance and a summary of the issues discussed during the above meeting. Topics covered during the meeting included: (1) a final review of plan participating jurisdictions, (2) a final review of mitigation goals, (3) a review of final hazards and CPRIs, (4) a review of available grants with a mitigation plan, and (5) incorporation of final edits. The meeting concluded with a discussion of the next steps in the planning process. The formal presentation portion of the meeting began at 9:00 pm and concluded at approximately 10:00 pm.

Attendees

A complete list of attendees may be found on the attached meeting sing-in forms.

Introductions

Matt Eyer, Blue Umbrella Solutions, began the meeting by welcoming and thanking the attendees.
Matt Eyer, Blue Umbrella Solutions, provided the formal portion of the presentation.

Review of Plan Participating Jurisdictions

Mr. Eyer presented information on highlighting participating jurisdictions by county. Attendees were present with a series of slides showing the participating jurisdictions. Attendees were given the opportunity to review each jurisdiction to ensure all were included in the plan. In addition, attendees were provided with information concerning special districts, such as rural Water Districts or Fire Districts. They were informed that while these districts were not required to formally adopt the plan, in doing so they are given the opportunity to oversee awarded grant funding rather than have the county oversee the funding.

Review of Mitigation Goals

Attendees were presented with the final regional mitigation goals for the region.

Review of Hazards and Assigned CPRIs

Each of the 22 identified hazards was briefly discussed along with the rationale for each CPRI rating.

Review of Available Grants

Attendees were reminded of the grant funding streams that were open and available with an approved mitigation plan.

Incorporation of Final Edits

Attendees were given an opportunity to review the completed draft plan. Any changes or additions were noted to be included in the final plan edit.

Next Steps

The meeting concluded with a discussion of the remaining steps to complete the planning process as follows:

- **April 2014 — Make plan available to public for two week final review**
- **May 2014 — Submit Plan to KDEM**
- **May 2014 — Submit Plan to FEMA**
- **June 2014 — Plan approval and availability for adoption**

Franklin County
Office of
Emergency Management

Date: March 20, 2014 **Final Mitigation Plan Meeting**

Sign In Sheet

Name	Department
1. Jeanne Bunting	KDEM
2. Alan Radcliffe	FR OEM
3. Wes Breeund	city Wellsville
4. Tim Gibbs	Miami County
5. Jim Hagg	Fir Co Public Works
6. Paul Rayson RMH	Rayson
7. Kip Rush for Jerry Henn	USD 289 Wellsville Schools
8. Amanda Shinebarger	USD 288 Central Heights
9. Kathy Brakeville	City of Lane
10. Jan Horn	City of Williamsburg
11. Dennis Butler	Ottawa PD
12. Dale White	USD 290
13. Tom Vahl	City of Ottawa
14. Jeff Carner	Ottawa Fire
15. Rick Titus	RWD 6 Fr. Co.
16. Nancy Lamb	KDEM
17.	
18.	
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	

To	**Region "J" Hazard Mitigation Planning Committee**
Through	**Jeanne Bunting, Mitigation Planner** **Kansas Division of Emergency Management (KDEM)**
From	**Matthew Eyer, Blue Umbrella Solutions**
Tel / E-mail	**303-552-1181 / Matt@blueumbrella.co**
Date	**03/20/2014**
Subject	**Minutes from the Region "J" Final Meeting held on 03/20/2104 in Lyndon, KS.**

This document is a record of attendance and a summary of the issues discussed during the above meeting. Topics covered during the meeting included: (1) a final review of plan participating jurisdictions, (2) a final review of mitigation goals, (3) a review of final hazards and CPRIs, (4) a review of available grants with a mitigation plan, and (5) incorporation of final edits. The meeting concluded with a discussion of the next steps in the planning process. The formal presentation portion of the meeting began at 1:00 pm and concluded at approximately 2:00 pm.

Attendees

A complete list of attendees may be found on the attached meeting sing-in forms.

Introductions

Matt Eyer, Blue Umbrella Solutions, began the meeting by welcoming and thanking the attendees.
Matt Eyer, Blue Umbrella Solutions, provided the formal portion of the presentation.

Review of Plan Participating Jurisdictions

Mr. Eyer presented information on highlighting participating jurisdictions by county. Attendees were present with a series of slides showing the participating jurisdictions. Attendees were given the opportunity to review each jurisdiction to ensure all were included in the plan. In addition, attendees were provided with information concerning special districts, such as rural Water Districts or Fire Districts. They were informed that while these districts were not required to formally adopt the plan, in doing so they are given the opportunity to oversee awarded grant funding rather than have the county oversee the funding.

Review of Mitigation Goals

Attendees were presented with the final regional mitigation goals for the region.

Review of Hazards and Assigned CPRIs

Each of the 22 identified hazards was briefly discussed along with the rationale for each CPRI rating.

Review of Available Grants

Attendees were reminded of the grant funding streams that were open and available with an approved mitigation plan.

Incorporation of Final Edits

Attendees were given an opportunity to review the completed draft plan. Any changes or additions were noted to be included in the final plan edit.

Next Steps

The meeting concluded with a discussion of the remaining steps to complete the planning process as follows:

- **April 2014 — Make plan available to public for two week final review**
- **May 2014 — Submit Plan to KDEM**
- **May 2014 — Submit Plan to FEMA**
- **June 2014 — Plan approval and availability for adoption**

20 MAR 2014

HAZARD MITIGATION PLAN REVIEW
OSAGE/COFFEY COUNTY

NAME	AGENCY	PHONE	E-MAIL
Ben Romine	Osage County		
Nancy Lamb	KDEM		
Jeanne Buttry	KDEM		
Carol Seitz	Osage Co RWD 3	828 4545	osrwd3@embarqmail.com
Cortney Bartley	Coffey County 620	364-2721	cbartley@coffeycountyks.org
Terri Fultz	Osage City	785-528-3714	tfultz@osagecity.com
Mike Gilliland	Osage City	785-528-3714	mgilliland@osagecity.com
Fred Hollowell	Osage City	528-3714	fhall@osagecity.com
Anne Gray	Osage Co Health Dept	828-3117	agray_ochd@earthlink.net

LYNDON COMMUNITY CENTER
204 TOPEKA AVE.
LYNDON, KS 66451

FOR OFFICIAL USE ONLY

From: Bunting, Jeanne L NFG (US) [mailto:jeanne.l.bunting.nfg@mail.mil]
Sent: Friday, October 11, 2013 8:01 AM
To: Lamb, Nancy J NFG (US); Eyer, Matthew J CTR (US); J.D.Mersman (jmersman@andersoncountyks.org)
Subject: Region J Final Mitigation Mtg
When: Monday, March 17, 2014 8:00 AM-11:00 AM (UTC-07:00) Mountain Time (US & Canada).
Where: Anderson Co. Law Enforcement Center

135 E. 5th
Garnett, KS 66032

Nancy – please contact Linn Co.

EM's – this meeting is open for everyone – stakeholders, participants, public, etc. Please get the word out to all your people.

Anderson, Linn Counties.

From: Bunting, Jeanne L NFG (US) [mailto:jeanne.l.bunting.nfg@mail.mil]
Sent: Friday, October 11, 2013 7:52 AM
To: Lamb, Nancy J NFG (US); Eyer, Matthew J CTR (US); J.D.Mersman (jmersman@andersoncountyks.org); aradcliffe@mail.franklincoks.org; fkelly@micosheriff.org; bromine@oscosheriff.org; dave.sterbenz@snco.us
Subject: Region J 2nd Mitigation Mtg
When: Tuesday, January 21, 2014 12:00 PM-2:00 PM (UTC-07:00) Mountain Time (US & Canada).
Where: Same as KEMA mtg

Anderson, Linn, Franklin, Miami, Osage, Coffey, and Shawnee Counties.

Nancy – please forward to Linn.

From: Bunting, Jeanne L NFG (US) [mailto:jeanne.l.bunting.nfg@mail.mil]
Sent: Friday, October 11, 2013 8:01 AM
To: Lamb, Nancy J NFG (US); Eyer, Matthew J CTR (US); J.D.Mersman (jmersman@andersoncountyks.org)
Subject: Region J Final Mitigation Mtg
When: Monday, March 17, 2014 8:00 AM-11:00 AM (UTC-07:00) Mountain Time (US & Canada).
Where: Anderson Co. Law Enforcement Center

135 E. 5th
Garnett, KS 66032

Nancy – please contact Linn Co.

EM's – this meeting is open for everyone – stakeholders, participants, public, etc. Please get the word out to all your people.

Anderson, Linn Counties.

From: Bunting, Jeanne L NFG (US) [mailto:jeanne.l.bunting.nfg@mail.mil]
Sent: Friday, October 11, 2013 8:04 AM
To: aradcliffe@mail.franklincoks.org; fkelly@micosheriff.org; Lamb, Nancy J NFG (US); Eyer, Matthew J CTR (US)
Subject: Final Regional Mitigation Mtg
When: Thursday, March 20, 2014 8:00 AM-11:00 AM (UTC-07:00) Mountain Time (US & Canada).
Where: Ottawa, KS

EM's – this meeting is open for everyone – stakeholders, participants, public, etc. Please get the word out to all your people.

1418 S. Main St, Ottawa, KS

Franklin, Miami Counties.

From: Bunting, Jeanne L NFG (US) [mailto:jeanne.l.bunting.nfg@mail.mil]
Sent: Friday, October 11, 2013 8:06 AM
To: Lamb, Nancy J NFG (US); Eyer, Matthew J CTR (US); bromine@oscosheriff.org; RStukey@mail.coffeycountyks.org
Subject: Final Regional Mitigation Mtg
When: Thursday, March 20, 2014 12:00 PM-3:00 PM (UTC-07:00) Mountain Time (US & Canada).
Where: Lyndon, KS

EM's – this meeting is open for everyone – stakeholders, participants, public, etc. Please get the word out to all your people.

Lyndon Community Center, 204 Topeka Ave., Lyndon, KS

Osage, Coffey Counties.

From: Bunting, Jeanne L NFG (US) [mailto:jeanne.l.bunting.nfg@mail.mil]
Sent: Friday, October 11, 2013 8:07 AM
To: Lamb, Nancy J NFG (US); Eyer, Matthew J CTR (US); dave.sterbenz@snco.us
Subject: Final Regional Mitigation Mtg
When: Friday, March 21, 2014 12:00 AM to Saturday, March 22, 2014 12:00 AM (UTC-07:00) Mountain Time (US & Canada).
Where: SHCO Health Agency

EM's – this meeting is open for everyone – stakeholders, participants, public, etc. Please get the word out to all your people.

Shawnee County Health Agency, 1615 SW 8th Ave, Topeka, KS

Shawnee County.

From: Bunting, Jeanne L NFG (US) [mailto:jeanne.l.bunting.nfg@mail.mil]
Sent: Tuesday, January 07, 2014 8:28 AM
To: Lamb, Nancy J NFG (US); Eyer, Matthew J CTR (US); J.D.Mersman (jmersman@andersoncountyks.org); aradcliffe@mail.franklincoks.org; fkelly@micosheriff.org;

bromine@oscosheriff.org; dave.sterbenz@snco.us
Subject: Region J 2nd Mitigation Mtg
When: Tuesday, January 21, 2014 12:00 PM-2:00 PM (UTC-07:00) Mountain Time (US & Canada).
Where: Same as KEMA mtg

Anderson, Linn, Franklin, Miami, Osage, Coffey, and Shawnee Counties.

Nancy – please forward to Linn.

Emporia State University

From: Bunting, Jeanne L NFG (US) [mailto:jeanne.l.bunting.nfg@mail.mil]
Sent: Wednesday, August 14, 2013 11:28 AM
To: Eyer, Matthew J CTR (US)
Subject: Update to Final Regional Mitigation Mtg
When: Wednesday, August 21, 2013 8:00 AM-10:00 AM (UTC-07:00) Mountain Time (US & Canada).
Where: "The Point" Conference Center

Classification: UNCLASSIFIED
Caveats: FOUO

Classification: UNCLASSIFIED
Caveats: FOUO

Located at 2101 North Dearborn Avenue, Augusta, KS. Further direction request can be sent to HYPERLINK "mailto:jschmidt@bucoks.com" jschmidt@bucoks.com.

Classification: UNCLASSIFIED
Caveats: FOUO

EM's – this meeting is open for everyone – stakeholders, participants, public, etc. Please get the word out to all your people.

Venue has changed to Franklin County Fairgrounds:

Celebration Hall
1737 S. Elm
Ottawa, KS

Franklin, Miami Counties.

Classification: UNCLASSIFIED
Caveats: FOUO

Reminder:

The final follow-up and plan review meeting for the Regional Hazard Mitigation Plan will be March 20, 2014 1:00 pm at the Lyndon Community Center, 204 Topeka Ave., Lyndon, Ks. If you have any questions please give me a call.

Thanks.

Bryce Romine, KCEM
Osage Co. Emergency Management Coordinator
785 828 3323 (office) 785 438 9767 (cell) 785 828 3662 (fax)
131 W. 14th St., P.O. Box 423
Lyndon, Kansas 66451-0423

Matt,

I wanted to let you know that the following group participated in a meeting on October 3, 2013 in regards to the regional hazard mitigation planning process and should be considered an active participant:

Miami County
City of Louisburg
City of Paola
USD 368 Paola School District
USD 416 Lousiburg Schools District

The following were not able to attend the meeting but have worked with myself to review actions and complete the worksheet. They should be considered an active participant:

USD 367 Osawatomie School District
City of Osawatomie

Also, the current actions have been reviewed and are applicable.

Thank you.

Tim Gibbs, KCEM
Emergency Management Coordinator
Miami County Emergency Management
118 S. Pearl
Paola, Kansas 66071
913-294-4444
913-294-9118 Fax

Sorry for the late response.

We did have a mitigation meeting attended by representatives from the cities of Bern, Centralia, Corning, Goff, Oneida, Sabetha, Seneca, and Wetmore. The meeting was held in October 2013 and items discussed were the steps being used by the State to update/create the new Nemaha County Hazard Mitigation Plan. The jurisdictions were given a copy of the Data Collection Guide, completed with data extracted from the previous Nemaha County Hazard Mitigation Plan, and it was requested that they review the guides for any corrections or additions. The jurisdictions were contacted within the next few weeks for additions or corrections to the Data Collection Guides.

Steve Duryea
Circleville, KS 66416

steve@duryeaco.net

APPENDIX C

PUBLIC SURVEY

Region J Mitigation Plan Public Input

*1. What County and Jurisdiction do you live in?

*2. In the Region consisting of Anderson, Coffey, Franklin, Linn, Miami, Osage, and Shawnee Counties, the planning committee has determined that the hazards listed below are of significance to the area. Please indicate the level of risk, or extent of potential impacts, in the Region, that you perceive for each hazard.

	Negligible	limited	Moderate	Critical	Catastrophic
Tornado					
Winter Storm					
Flood					
Windstorm					
Wildfire					
Utility/Infrastructure Failure					
Hailstorm					
Hazardous Material					
Major Disease Outbreak					
Extreme Temperatures					

*3. In the Region, the planning committee has determined that a Flood event is a hazard for your region.. How important is it to you that your community participate or continue to participate in the National Flood Insurance Program?

- Very Important
- Somewhat Important
- Not Important
- No Opinion

*4. Funding request for FEMA Hazard Mitigation Grant Program Funds are currently reviewed initially by the Kansas Division of Emergency Management. Listed below are their current funding priorities. Please check those that could benefit your community.

- Power Line Upgrades
- Acquisition/Demolition/Elevation of Flood Prone Properties
- Community Shelters, Shelters for Schools and Public Buildings
- Protection of Critical Facilities

*5. Have you had an opportunity to read your current Hazard Mitigation Plan?

- Yes
- No
- Did not know we had one

*6. Do you know where the mitigation plan can be found for your county if you wanted to look at it?

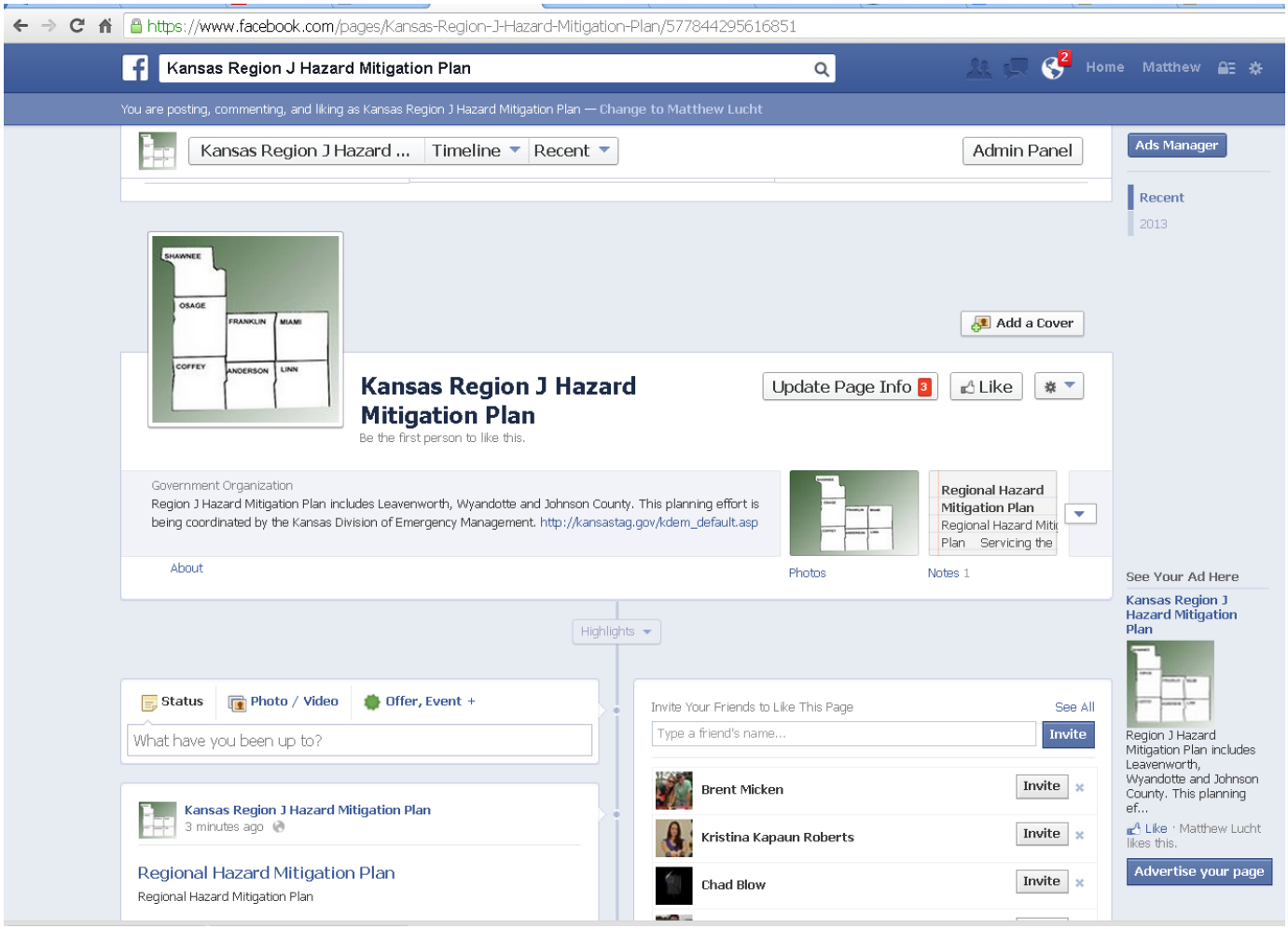
- yes
- no

7. Your input is valuable to this planning process. Please comment on any other issues that the planning committee should consider in developing a strategy to reduce future losses caused by natural hazard events.

8. Do you have any mitigation projects you would like to see implemented and what are they?

Done

Powered by SurveyMonkey
Check out our sample surveys and create your own now!



https://www.facebook.com/pages/Kansas-Region-J-Hazard-Mitigation-Plan/577844295616851

APPENDIX D

CRITICAL FACILITIES

RESTRICTED

APPENDIX E

FEMA APPROVAL DOCUMENTATION