
Section 4

Introduction to Mitigation

Definition of hazard mitigation

“Hazard Mitigation” means to permanently reduce or alleviate the losses of life, injuries, and property resulting from natural and human-made hazards through long-term strategies

Categories of Hazard Mitigation

Long-term strategies include planning, policy changes, programs, projects, and other activities. Mitigation is the responsibility of individuals, private businesses, industries, and state, local and federal governments. In general, all of these activities fall into one of the following broad categories of mitigation:

1. Prevention

Preventative activities are intended to keep hazard problems from getting worse. They are particularly effective in reducing a community’s future vulnerability, especially in areas where development has not occurred or capital improvements have not been substantial. Examples of preventative activities include:

- a) Planning and Zoning
- b) Open space preservation
- c) Floodplain regulations
- d) Stormwater management
- e) Capital improvements programming

2. Property Protection

Property protection measures protect existing structures by modifying the building to withstand hazardous events, or removing structures from hazardous locations. Examples include:

- a) Acquisition
- b) Relocation
- c) Building elevation
- d) Critical facilities protection

- e) Retrofitting (i.e., wind-proofing, flood-proofing, seismic design standards, etc)
- f) Insurance
- g) Safe rooms

3. Natural Resource Protection

Natural resource protection activities reduce the impact of natural hazards by preserving or restoring natural areas and their mitigative functions. Such areas include floodplains and wetlands. Parks, recreation, or conservation agencies and organizations often implement these measures. Examples include:

- a) Floodplain protection
- b) Riparian buffers
- c) Fire resistant landscaping
- d) Fuel Breaks
- e) Erosion and sediment control
- f) Wetland preservation and restoration
- g) Habitat preservation
- h) Slope stabilization

4. Structural Projects

Structural mitigation projects are intended to lessen the impact of a hazard by modifying the environmental natural progression of the hazard event. They are usually designed by engineers and managed or maintained by public works staff. Examples include:

- a) Reservoirs
- b) Levees/floodwalls
- c) Diversions / Detention / Retention
- d) Channel modification
- e) Storm sewers

5. Emergency Services

Although not typically considered a “mitigation technique,” emergency service measures do minimize the impact of a hazard event on people and property. These commonly are actions taken immediately prior to, during, or in response to a

hazard event. Examples include:

- a) Warning systems
- b) Evacuation planning and management
- c) Sandbagging for flood protection
- d) Installing shutters for wind protection

6. Public Information and Awareness

Public information and awareness activities are used to advise residents, business owners, potential property buyers, and visitors about hazards, hazardous areas, and mitigation techniques they can use to protect themselves and their property. Examples of measures to educate and inform the public include:

- a) Outreach projects
- b) Speaker series / demonstration events
- c) Hazard map information
- d) Real estate disclosure
- e) Library materials
- f) School children education
- g) Hazard expositions

Mitigation Versus Preparedness, Response, and Recovery

Comprehensive emergency management is a widely used approach at the local, state, and federal levels to deal with the inevitability of natural hazards and their potential to cause disasters in a given community. The components of a comprehensive emergency management system include:

1. **Preparedness** activities, which are undertaken to improve the ability to respond quickly in the immediate aftermath of an incident. Preparedness activities include development of response procedures, design and installation of warning systems, exercises to test emergency operational procedures, and training of emergency personnel.

2. **Response** activities occur during or immediately following the disaster, and include such time-sensitive items as search and rescue operations, evacuation, emergency medical care, food, and shelter programs. Response activities are designed to

meet the urgent needs of disaster victims.

3. **Recovery** activities are emergency management actions that begin after the disaster, as urgent needs are met. These actions are designed to put the community back together, and include repairs to roads, bridges, and other public facilities, restoration of power, water, and other municipal services, and other activities that help restore normal operations to a community.

4. **Mitigation** activities reduce or eliminate the damages from hazardous events. These activities can occur before, during, and after a disaster, and overlap all phases of emergency management. Structural mitigation pertains to actions such as dam and levee projects to protect against flooding, constructing disaster-resistant structures, retrofitting existing structures to withstand events, etc. Non-structural mitigation activities include development of land use plans, zoning ordinances, subdivision regulations, and tax incentives and disincentives to discourage development in certain high-hazard areas. Mitigation also includes education programs for members of the public about the hazards to which their community is vulnerable, as well as the importance of mitigation and how to prepare their property to withstand a disaster.

Mitigation Plan Benefits

Mitigation planning offers many benefits that include saving lives and property, speeding recovery following disasters, and insuring the community has full access to both pre-disaster and post-disaster federal/state funding. Mitigation planning will potentially reduce the loss of essential services, critical facilities, and economic hardship. More importantly, mitigation planning has the potential to produce long-term and recurring benefits by breaking the repetitive cycle of disaster loss. A core assumption of mitigation is that current dollars invested in mitigation practices will significantly reduce the demand for future dollars by lessening the amount needed for emergency recovery, repair, and reconstruction.

Mitigation planning will also lead to benefits that go beyond solely reducing hazard vulnerability. Measures such as the acquisition or regulation of land in known hazard areas can help achieve multiple community goals. These goals include preserving open space, maintaining environmental health and natural features, and

enhancing recreational opportunities. Many of these common goals will become increasingly evident as a community begins to walk through the local mitigation planning process.

County Hazard Mitigation Goals and Strategy,

Goals are statements or desirable future conditions that are to be achieved.

Actions are more tangible and specific than goals, and may be quantified. Joint meetings between the Bootheel Regional Planning Commission staff, local public officials, and the Planning Committee for Stoddard County Hazard Mitigation Plan developed the original 2006 Plan goals.

To re-evaluate the 2006 goals and actions for the inclusion in the 2010 Plan Update, the following public participation occurred. (See documents below)

- A questionnaire was mailed to each participating jurisdiction on December 1, 2009 to update goals and actions and to update information on mitigation activities in their communities. (See example below)

Dexter

Questions to be answered for five-year update of Natural Hazard Mitigation Plan

Does your city/county have the following?

Emergency Operations Plan Yes No
 Zoning Ordinances Yes No
 Building Codes Yes No
 Earthquake Codes Yes No
 Subdivision Regulations Yes No
 Stormwater Regulations Yes No
 Floodplain Regulations Yes No
 Outdoor Warning Sirens Yes No How Many? 6
 Participate in the National Flood Insurance Program Yes No
 Water Service(Name) City of Dexter
 Sewer Service(Name) City of Dexter
 Electric Service(Name) Amergen
 Fire Service(Name) City of Dexter
 Ambulance Service(Name) Stoddard County Ambulance

Since 2004 Missouri has been impacted by 16 declared natural disasters. Seven of those have impacted most of the Bootheel counties. **What has your city/county done to protect (mitigate) your citizens from injury or property damage?** Some examples might be new building codes, better drainage, tree trimming, purchase generators, designate safe areas for tornadoes, warm spaces for power outages, better training for emergency workers, or public meetings to better inform citizens. List those your city has done.

Improved drainage, new building codes, generators, have a emergency plan in place that is tested to assure shelters etc.

- Bootheel Regional Planning Commission had published in the Dexter Daily Statesman an article requesting comments on the Commissions website concerning updates of the Hazard Mitigation Plan.

The Bootheel Regional Planning Commission is currently updating the Natural Hazard Mitigation Plan for Stoddard County. All businesses, utilities, media, public officials, and general public from Stoddard County and surrounding areas are invited to comment on the Plan. The Stoddard County Natural Hazard Mitigation Plan can be accessed by logging on the Commission's website at www.bootrpc.com. All comments and suggestions are welcomed.

Affidavit of Publication

STATE OF MISSOURI, COUNTY OF STODDARD - SS.

I, Ernest H. Hunt, being duly sworn according to law, state that I am Publisher of the Daily Statesman; a daily newspaper of general circulation in Stoddard County, Missouri, where located; which has been admitted to the Post Office as paid periodical postage in the City of Dexter, Missouri, the city of publication; which newspaper has been published regularly and consecutively for a period of three years and has a list of bona fide subscribers voluntarily engaged as such who have paid or agreed to pay a stated price for a subscription for a definite period of time, and that such newspaper has complied with the provisions of V.A.M.S. Section 493.050. The affixed notice appeared in said newspaper on the following consecutive weeks:

Volume 139 No 8 Date 1-13-10
 Volume _____ No _____ Date _____
 Volume _____ No _____ Date _____

(Signed) *Ernest H. Hunt*
 Ernest H. Hunt

Subscribed and sworn to before me this 13th day of January, 2010.

Debbie L. Wright Notary Public
 DEBBIE L. WRIGHT
 My Commission Expires
 September 24, 2013
 Dunklin County
 Commission #09408610

THE DAILY STATESMAN
 133 S. Walnut • P.O. Box 579
 Dexter, MO 63841

- Bootheel Staff met with Stoddard County Superintendents and discussed Mitigation Plan updates. Superintendents were encouraged to participate in the update process.

**Stoddard County Superintendents
Hazard Mitigation Planning
January 21, 2010**

District Name	Representative/Title	Telephone/E-Mail
Advance R-IV		
Bell City R-II	<i>Blenda Niemczyk, Superintendent</i>	<i>573-733-4444 niemczyk@bellcity.ki2.mo.us</i>
Bernie R-XIII	<i>John Boyd, Superintendent</i>	<i>573-273-5373 boydjd@bernie.ki2.mo.us</i>
Bloomfield R-XIV	<i>Walter J. Smith, Superintendent</i>	<i>573-568-4564 wsmith@bloomfield.ki2.mo.us</i>
Dexter R-XI	<i>Kevin Jackman</i>	<i>573-614-1000 kjackman@dexter.ki2.mo.us</i>
Puxico R-VIII	<i>Kelley Dene, Supt.</i>	<i>573-272-3762 kdene@puxico.ki2.mo.us</i>
Richland R-I	<i>Michelle R. De... Superintendent</i>	<i>573-283-5332 kraven@richland.ki2.mo.us</i>

- Staff met with Stoddard County Commissioners on January 25, 2010 to discuss Mitigation Plan update.

January 25, 2010

Stoddard County Hazard Mitigation Plan Update

Met with Stoddard County Commissioners

Topics of meeting included:

- Discussion of Plan Updates
- Reviewed Importance of Plans
- Reviewed Goals & Objectives
- Discussed Pre-Mitigation Grant Program
- Discussed County Jurisdictions Involved in Plan

Signed: *Mr. Matt* Date 1 25 2010

Carol Jarrell Date 1-25-2010

Frank [unclear] Date 1-25-2010

Date _____

- Bootheel staff met with county officials, University of Missouri, and Department of Economic Development officials to discuss mitigation plans for all Bootheel counties.

Economic Development Commission
Meeting Attendance Record

Date: June 8, 2010 Type of Meeting: Work Time: 12:00

Name	Representing	Address	Phone & Email
John P... Frank Sifford	Cardinal Stoddard County	62215 P.O. Box 252 Bloomfield MO	620-531-3311 frank.sifford@cardinal.edu
AL BANKEN ✓	Dexter Fire Dept.	301 Cooper Drive Dexter MO 63841	573-622-3423 albanken@stoddardcountymissouri.com
Ron Eskew ✓	City of Scott City	215 Chestnut Ave	264-2157
John Steiner ✓	Stoddard Co IFA	P.O. Box 624 Brownfield MO 63916	573-440-1561 jsteiner@stoddardcountymissouri.com
Joe Webber	City of Deacon	708 S. 2nd St Deacon MO	624-5141
JANET COLEMAN ✓	Dexter Manager	P.O. Box 21 Dexter MO 63841	573-622-3423 janet@stoddardcountymissouri.com
Don Collins	DONALD COUNTY	P.O. Box 69 Kennett MO 63857	573-887-7100 don@stoddardcountymissouri.com
Wendell Ramsey	City of Parma	P.O. Box 68 Parma MO 63870	573-622-3423 wendell@stoddardcountymissouri.com
Dave Hill	North Pole	Blue Springs, MO	573-568-5505
William Joseph	City of Leitchfield	200 W. 3rd Leitchfield MO	573-622-3423
Tony Rushing ✓	City of Carterville	200 W. 3rd Carterville MO 63830	573-622-3423
Chantel Jones ✓	City of Carterville	104 E. 2nd St Carterville MO 63830	573-622-3423
John Ferguson ✓	II		
Deborah B... Paul Cook ✓	City of East Prairie Scott County	219 N. Washington P.O. Box 188 Benton MO	573-649-3057 pcook@stoddardcountymissouri.com
Alan St. John	City of Ma-Combe	304 Council Blvd Columbia MO	573-622-3423
Michael J. Muir	Dept of Econ Dev.	201 W. High Street Sikeston MO	573-622-3423

We are up-dating our records continuously, please complete the attendance record. Thank you for your cooperation.

- Second meeting with county officials, University of Missouri, and Department of Economic Development to discuss mitigation plans for all of the Bootheel counties.

Business Regional Planning & Economic Development Commission
Meeting Attendance Record

Recording - respond Mike Hodge - 877
Alan W. Hodge - 877-810-2600

Date: June 15, 2010 Type of Meeting: RED Time: 12:00

Name	Representing	Address	Phone & Email
Patricia Hodges	Dunklin County Transit	PO Box 293	610 N. Douglas Malden, MO: 63863 dohodges@stccglobal.net
TED BELLERS	CITY OF MALDEN	201 S. MADISON, MALDEN, MO 63863	ted@bellers2000.com ASE 620-3942 520-1557 DENTAL PLAN 414-950-0000, POA Charles Jones VA 2027 Mill, Va 573-337-2253
AL-BANKEN	DEXTER F.D E.M.	301 COWPER DR. G. 7th 63841	
Charlie Jones	City of Caruthersville	104 E. 24th St Caruthersville, MO 63840	
Glenda Miller	City of Dudley	12377 Center St	573-624-3821
Mary Dwyer	City of Dudley	12377 Center St.	573-624-3831
John F. Huel	Carroll		
Jessie Newsom	City of Howardville	102 Howard, Howardville, MO	573-688-2137
Jenny Skowron	City of Carthage	219 N Washington, E. Haven	649-3057
John P. Ems	Scott County	PO Box 434 Benton MO 63706	573-545-3549
JESSIE NEWSOM	←		Howardville jessie B Newsom
Michael Hany	PRR	105 E. NORTH MAIN, Dexter	573-624-3831

We are up-dating our records continuously, please complete the attendance record. Thank you for your cooperation.

- Bootheel staff met with Local Emergency Planning Committee in Dexter, Mo. on October 27, 2009 to discuss Hazard Mitigation Planning.

PROPOSED AGENDA
Bootheel L.E.P.C.
 105 East North Main
 Dexter, MO. 63841
 573-624-4104
 October 27, 2009
 Stoddard County Fairgrounds
 Dexter, MO.
 6:30 PM

A. Call to Order

B. Adoption of Agenda

C. Routine Matters

1. Approval of last meeting minutes
2. Financial Reports

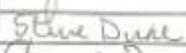
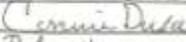
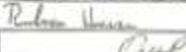
D. Old Business

1. Trailer/Equipment Committee (Generator update)
2. Training Committee-Upcoming training
3. Reports from DNR, MERC, SEMA, Region E Fire, EMS, Law, WMD Teams

E. New Business

- 1: Steve Duke (Hazard Mitigation Plan)
- 2: LEPC Membership
- 3: New Members
- 4: Next Meeting (January 26, 2010)
- 5: Bills to be paid (Including today's meal)
- 6: 2009 HazMat Symposium (Lake of the Ozarks - December 9 - 12, 2009)
- 7: Motion to adjourn

MEMBERS/ASSOCIATE MEMBERS/GUESTS
 October 27, 2009

	Steve Starkey	2320 Madison #17 Piedmont, MO 63045		573-661-4107		ststarkey@ststarkey.com
	Jim Sturt	941 7th Ave SW Charleston, MO 63834	Cargil, Inc.			
	Taylor Vanness	518 Harding Over, MO 63774		573-471-7700	415-284-0246	twanness@comcast.com
	Marvin Watson	P O Box 240 Seward, MO 63881	Cargil, Inc.			
	Kevin Jackson	127 Logan Lane Milledgeville, MO 63242		402-764-8485	478-622-1987	
	Jerry Latham	125 West Main Saverton, MO 63881	Stoddard County Health Department	573-621-0004		jlatham@stoddardcountymo.gov
	Carroll Leisner	104 4th Street Portageville, MO 63873	Portageville Fire Department	573-264-2174	573-624-4887	
	Art Goodin	2155 N Woodland Parker, MO 63881	DNR-CES	573-719-2442		agoodin@dnr.mo.gov
	Josh Wilkinson	2155 N Woodland Parker, MO 63881	DNR-CES	573-719-2441	573-624-4887	joswilson@dnr.mo.gov
	GUESTS					
	Steve Duke	105 E. North Main Dexter, MO 63841	Bootheel PPC	573-624-2119		sd@stoddardcountymo.gov
	Corinne Duke	105 E. North Main Dexter, MO 63841	Bootheel PPC	573-624-2119		cd@stoddardcountymo.gov
	Robin House	P O Box 251 St. Charles, MO 63304	Johnson Fire		573-624-4710/4848	robinhouse@stoddardcountymo.gov
	David McClary	P O Box 688 Stoddard, MO 63882	Stoddard Fire Department	573-624-2100	573-624-4887	dmcclary@stoddardcountymo.gov

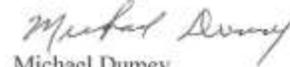
- Updated draft copy of goals and actions were sent to Stoddard County mayors to solicit their comments.

July 19, 2010

To: Linda Weissenborn, City Clerk, City of Advance

As you are aware, the Bootheel Regional Planning Commission is in the process of updating Stoddard County's Hazard Mitigation Plan. Enclosed in a draft copy of the proposed goals and objectives for the new Plan. Please pass this information along to the mayor. Any changes or suggestion are welcomed.

Respectfully,



Michael Dumey
Regional Planner
BRPC

Evaluation of the Goals and Actions

All the 2006 Plan mitigation goals and actions were re-evaluated at the Planning Committee meeting/mitigation workshops. Participants reviewed the 2006 goals and actions, determined them to remain effective and valid or recommended changes and assessed whether the goals and actions lead to mitigation projects or policy changes. Following are the goals and actions from the previously approved 2006 Plan.

Goal 1. Eliminate loss of life, minimize injuries, and reduce property damage caused by *tornadoes and severe thunderstorms*.

Action 1.1: Adopt building codes that require new structures built after July 1, 2006 to have BOCA- approved roof rafter to plate fastening schedule to withstand an F-1 tornado.

Action 1.2: Adopt policies for new mobile home parks and recreational facilities that provide shelters within 100 yards of any resident or participant by July 1, 2006.

Action 1.3: Host workshops annually for business owners and public facilities administrators to develop plans for the occupants should severe storms threaten.

Goal 2. Minimize property damage due to *flooding* of streams.

Action 2.1: Develop design criteria for drainage structures on roads within the county's jurisdiction to be effective July 1, 2005. Adopt AASHTO design criteria for cross road drainage structures on local roads.

Action 2.2: Implement erosion control measures on all county highway projects constructed after July 1, 2006.

Action 2.3: Develop a floodplain management program consistent with NFIP for county development to be implemented on July 1, 2006. Contact University of Missouri about developing "Pipe Culvert Installation" workshop for county highway departments.

Goal 3. Minimize injuries and property damage due to *seismic events*.

Action 3.1: Adopt BOCA seismic design building codes for future construction of critical facilities effective July 1, 2006. Document site plan and seismic building design approval for construction of critical facilities.

Action 3.2: Designate an Emergency Operations Center and conduct an annual coordination exercise with all county officials effective July 1, 2006.

Action 3.3: Co-sponsor with appropriate school boards an earthquake public awareness program for local public schools. Print earthquake preparedness brochures and distribute to libraries, city halls and county courthouse for public education

Goal 4. Minimize the impact to natural and human resources caused by *drought and/or heat wave*.

Action 4.1: Adopt "best practices" policy in conjunction with the Soil and Water Conservation Commission to be implemented by July 1, 2006. Action 4.2: Meet with public electric utility companies to develop "best practices" for power conservation during periods of drought and heat waves to be implemented July 1, 2006.

Action 4.3: Sponsor annual safety meetings for county employees to address heat stress beginning July 1, 2006.

Goal 5. Maintain public services to minimize the risk and reduce property damage caused by *severe winter weather*.

Action 5.1: Create an emergency snow route map for the county road system to be distributed by July 1, 2006. Meet annually with state and local officials to coordinate snow removal activities in September of each year.

Action 5.2: Meet annually with critical facilities administrators to develop severe winter weather strategies beginning July 1, 2006. Distribute brochures on proper tree trimming to reduce the risk of property damage during ice storms.

Action 5.3: Educate the public utility end user on preventive measures to reduce the risk to public and private property by July 1, 2006. Meet with health care officials and local veterinarians to develop “best practices” brochure on techniques to protect human life and domesticated animals during periods of severe cold weather and power outages.

After reviewing the goals and actions from the 2006 Plan, the Planning Committee determined that all goals and actions remained current and valid. The Planning Committee did decide to re-word Actions 1.1 and 1.2, and made some other changes as described on page 173. The chart below illustrates for Stoddard County and its participating jurisdictions the results of local efforts to achieve the 2006 goals and actions.

2011 Evaluation of 2004 Goals and Actions

Jurisdiction	Goal 1	Act 1.1	Act 1.2	Act 1.3	Goal 2	Act 2.1	Act 2.2	Act 2.3	Goal 3	Act 3.1	Act 3.2	Act 3.3	Goal 4	Act 4.1	Act 4.2	Act 4.3	Goal 5	Act 5.1	Act 5.2	Act 5.3
Stoddard County	P	N	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Advance	P	N	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Bernie	P	N	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Bell City	P	N	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Bloomfield	P	N	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Dexter	P	N	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Dudley	P	N	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Essex	P	N	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Penermon	P	N	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Puxico	P	N	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

<p>P Goal valid and partially completed</p> <p>N New or revised Action</p> <p>P Action valid and partially completed</p>

Multi-Hazard Mitigation Plans are based upon approved goals and actions. These goals and actions are designed to encouraged counties and local jurisdictions to implement policies or actions that will decrease property damage and reduce loss of life or injury. Based upon public meetings with county and other local officials, and information from questionnaires, the chart below lists the effects of the 2006 goals and actions on local policies and plans.

2006 Goals and Actions that lead to Mitigation Plans or Policy Changes

Jurisdiction	Goal 1	Act 1.1	Act 1.2	Act 1.3	Goal 2	Act 2.1	Act 2.2	Act 2.3	Goal 3	Act 3.1	Act 3.2	Act 3.3	Goal 4	Act 4.1	Act 4.2	Act 4.3	Goal 5	Act 5.1	Act 5.2	Act 5.3
Stoddard County					PC												PC			
Advance						MP											PC			
Bernie																	PC		MP	
Bell City																	PC			MP
Bloomfield																MP	PC		MP	MP
Dexter		MP						MP									PC		MP	MP
Dudley						MP											PC			MP
Essex																	PC		MP	MP
Penermon																	PC		MP	MP
Puxico					PC												PC		MP	MP

MP Goals or actions that lead to Mitigation Plans for County or Jurisdictions
PC Goals or actions that lead to Policy Changes for County or Jurisdictions

The chart below shows the mitigation activities each jurisdiction initiated as a result of natural weather occurrences and strategies designated in the adopted 2006 Hazard Mitigation Plan. Note that school districts and the college are not included in the table below, as they were not participants in the 2006 Plan.

Results of 2006 Stoddard County Hazard Mitigation

Jurisdictions	Stoddard Co.	Advance	Bernie	Bell City	Bloomfield	Dexter	Dudley	Essex	Penermon	Puxico
Grants-Fire Stations, Community Centers										
Tree Trimming		X							X	X
Drainage		X				X	X			X
Generators		X	X	X	X	X	X	X	X	X
Warm Spaces		X	X	X	X	X	X	X	X	X
Special Training for Emergencies Workers					X	X				
Public Meetings									X	
Update Emergency Operations Plan						X				
Co-ordinate County Resources	X									
New Building Codes						X				
Stormwater Pumps										
Weather Sirens										

2011 Plan Update Goals and Actions

After consultation with county officials, and a review of 2006 actions and activities, the Planning Committee determined that change was not necessary for most items before they were carried over into the 2011 Plan Update. Progress has been made in partially meeting some goals and actions. Due to the cost, time constraints, and varying intensities

and severity of natural weather patterns, completing the mitigation actions will continue to be an ongoing process. The fact that all goals and actions may not have been met does not preclude their viability.

Although the strategies of the 2006 Plan are still valid, the Planning Committee had difficulty determining which proposed activities in the 2006 Plan were objectives and which were actions. Actions are supposed to further proposed objectives, and this was not the case in the 2006 Plan. For this reason, the Planning Committee determined that the best course of action would be to retain all proposals from the 2006 Plan, but to re-characterize them as actions, eliminating the category “objectives” altogether. In some cases, the Planning Committee combined actions and objectives in the update. More information concerning the evolution of each of the actions and objectives from the 2006 is shown in the tables beginning on page 180.

“Brainstorming” sessions also led to additional wording in the 2011 Plan Update to clarify some of the actions. This additional wording is in italics in the listing of proposed strategy below. The Planning Committee decided to add a fourth action under the second goal, in addition to the existing strategy. This new action will provide for coordination with the USACE concerning levee and flooding issues. In addition, hazards not addressed in the 2006 Plan have been added to the 2011 Update. Action 2.3 has been clarified by adding a statement about continued participation in the NFIP by jurisdictions in the planning area. The final difference between the actions in the previously approved 2006 Plan and the 2011 Update is that actions have been added for the school districts and the colleges that had not participated in the 2006 Plan. These new school district/college actions are bolded in the list below.

Goal 1. Eliminate loss of life, minimize injuries and reduce property damage caused by tornadoes and severe thunderstorms/high winds, hail and lightning.

Action 1.1: Encourage construction codes on new buildings to withstand high winds and a possible F1 tornado.

Action 1.2: Encourage construction of tornado safe rooms. *Schedule meetings with jurisdictions seeking grant funds for construction of safe rooms.*

Action 1.3: Host workshops annually for business owners and public facilities administrators to develop plans for the occupants should severe storms threaten. *Invite SEMA representatives and professional architects and engineers to workshops to help businesses and public facilities administrators.*

Goal 2. Minimize property damage due to flooding, levee failure, and dam failure.

Action 2.1: Develop design criteria for drainage structures on roads within the jurisdictions. *Adopt AASHTO design criteria for cross road drainage structures on local roads.*

Action 2.2: Implement erosion control measures on all county highway projects. *Contact University of Missouri about developing a “Pipe Culvert Installation” workshop for county highway departments.*

Action 2.3: Continue compliance with and implementation of NFIP requirements to reduce flood risks within flood hazard areas. Continue participation in the NFIP. *Schedule meetings with jurisdictions seeking grant funds for flood buyouts, elevation projects, etc. Revise building permit system to include site plan and elevations with submittal approval.*

Action 2.4: Coordinate with Memphis District Corps of Engineers to determine effects of levee failure.

Action 2.5: Identify actions to mitigate effects of flooding on school day.

Goal 3. Minimize injuries and property damage due to seismic events.

Action 3.1: Adopt BOCA seismic design building codes for future construction of critical facilities. *Revise policies to include seismic designs on future construction of critical facilities.*

Action 3.2: Designate an Emergency Operations Center and conduct an annual coordination exercise with all county officials.

Action 3.3: Co-sponsor with appropriate school boards an earthquake public awareness program for local public schools. Print earthquake preparedness brochures and distribute to libraries, city halls and county courthouse for public education.

Action 3.4: Designate a School Emergency Operations Center and conduct quarterly coordination exercises with school and local emergency management officials.

Action 3.5: Inform parents of school children regarding crisis plan and how it affects their students in case of a disaster.

Goal 4. Minimize the impact to natural and human resources caused by drought and/or heat wave.

Action 4.1: In conjunction with the Soil and Water Conservation Commission, jurisdictions should adopt and print “best practices” policy on water and electrical power and make available at public locations. *Schedule annual meetings with city mayors to discuss power and water conservation practices.*

Action 4.2: Meet with public electric utility companies to develop “best practices” for power conservation during periods of drought and heat waves.

Action 4.3: Sponsor annual safety meetings for county employees to address heat stress. *Invite a Red Cross trainer to county safety meetings to discuss preventive measures for heat stress.*

Action 4.4 Take actions during periods of extreme heat to safeguard the health of students and staff by altering school activities.

Goal 5. Maintain public services to minimize the risk and reduce property damage caused by severe winter weather.

Action 5.1: Create an emergency snow route map for the county road system, and coordinate snow removal activities with state and local officials in September of each year. *Schedule meetings with county highway foreman, city street directors, and state highway engineer to discuss snow removal, route closures, and general safety procedures.*

Action 5.2: Meet annually with critical facilities administrators to develop severe winter weather strategies. *Arrange for distribution of brochures on tree trimming to reduce the risk of property damage during ice storms.*

Action 5.3: Educate the public utility end user on preventive measures to reduce the risk to public and private property. *Meet with health care officials and local veterinarians to develop “best practices” brochures on techniques to protect human life and domesticated animals during periods of severe cold weather and power outages.*

Action 5.4: Develop school polices to protect students and staff during severe winter weather. Policies could cover topic such as setting priorities for snow removal, canceling classes and informing parents, determining when road conditions are dangerous.

The above actions are strategies for reducing disaster damages. They include implementing activities that create partnerships and will have secondary and tertiary

benefits. The above action items, when implemented, will create policies and activities that lead to projects for the region that mitigate natural hazards risk with public involvement and support.

Prioritizing the Update Actions

The following table provides the criteria used to evaluate and prioritize the county and jurisdictions proposed 2011 mitigation strategy. The Planning Committee reviewed each action using STAPLEE criteria as set forth in Federal Emergency Management Agency (FEMA) guidelines. STAPLEE criteria include: social, technical, administrative, political, legal, economic and environmental considerations. The Planning Committee considered the following criteria and answered the following questions in prioritizing the proposed action.

Social -- The public must support the overall implementation strategy and specific mitigation actions. The following questions were considered:

- Will the proposed action adversely affect a segment of the population?
- Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?
- Is the action compatible with present and future community values?
- Will the actions affect adversely cultural values or resources?

Technical - - Determine if the proposed action is technically feasible, will help to reduce loss in the long term, and has minimal secondary impacts. The following questions were considered:

- How effective is the action in avoiding or reducing future losses?
- Will it create more problems than it solves?
- Does it solve the problem or only the symptom?

Administrative - - Examine the anticipated staffing, funding, and maintenance required for the action. The following questions were considered:

- Does the jurisdiction have the capability to implement the action?
- Can the community provide the necessary maintenance?
- Can it accomplished in a timely manner?

Political - - Proposed mitigations actions sometimes fail because of lack of political acceptance. The following questions were considered:

- Is there political support to implement and maintain this action?
- Have political leaders participated in the planning process?
- Is local leadership available?
- Who are the stakeholders in the proposed action?
- Is there enough public support to ensure the success of the action?

Legal - - Legal authority must be granted to implement the action.

The following questions were considered:

- Does the local jurisdiction have the legal authority to implement the action?
- Is there a technical, scientific, or legal basis for the mitigation action?
- Are the proper law, ordinances, and resolutions in place to implement the action?
- Are there any potential legal consequences?

Economic- - Budget constraints should not impede action implementation.

The following questions were considered:

- Are funds available to implement the actions?
- What benefits will the action provide?
- Is the cost reasonable for the size of the problems?
- What outside sources of funding is available?

Environmental - - Mitigation actions must not negatively impact the environment.

The following questions were considered:

- How will this action affect land, water, and endangered species?
- Will this action comply with local, state, and federal environmental regulations?
- Is the action consistent with community environmental goals?

The following table provides the results of the Planning Committee's analysis of the proposed mitigation actions. Each action was reviewed according to the Social, Technical, Administrative, Political, Legal, Economic and Environmental (STAPLEE) criteria. An "X" under the appropriate column indicates that the response to the listed element questions posed on the preceding page would go towards the feasibility of the

proposed action. No “X” in a box indicates lack of feasibility for that action under the STAPLEE element listed.

2011 Stoddard County Proposed Strategy Evaluation							
Criteria	S	T	A	P	L	E	E
Goal.1 Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes and severe thunderstorms							
Action 1.1: Encourage construction codes on new buildings to withstand high winds and a possible F1 tornado	X	X	X	X	X	X	X
Action 1.2: Encourage construction of tornado safe rooms	X	X	X	X	X	X	X
Action 1.3: Host workshops annually for business owners and public facilities administrators	X	X		X			
Goal 2. Minimize property damage due to flooding.							
Action 2.1: Develop design criteria for drainage structures on roads within the county’s jurisdiction.	X	X	X			X	X
Action 2.2: Implement erosion control measures on all county highway projects.	X	X				X	X
Action 2.3: Continued compliance with, participation in and implementation of the requirements for NFIP and reduce the flood risks within hazard area.	X	X	X	X	X	X	X
Action 2.4: Coordinate with Memphis District Corps of Engineers to study effects of levee failure.	X	X	X	X	X	X	X
Action 2.5: Identify actions to mitigate effects of flooding on school days	X	X	X	X	X	X	X
Goal 3. Minimize injuries and property damage due to seismic events.							
Action 3.1: Consider BOCA seismic design building codes for future construction	X	X	X	X	X	X	X
Action 3.2: Designate an Emergency Operations Center and conduct annual coordination exercises.	X		X	X			
Action 3.3: Co-sponsor with appropriate school boards an earthquake public awareness program for local schools.	X		X	X			
Action 3.4: Designate an Emergency Operations Center and conduct quarterly coordination exercises with school and local emergency management officials.	X	X	X	X	X	X	X
Action 3.5: Inform parents of crisis plan and how it affects their students in case of a disaster.	X	X	X	X	X	X	X
Goal 4. Minimize the impact to natural and human resources caused by drought and/or heat wave.							
Action 4.1: Adopt “best practices” policy in conjunction with the Soil and Water Conservation Commission.	X	X	X	X			X
Action 4.2: Meet with Public Electric Utility Companies to develop “best practices” for power conservation.	X		X	X			
Action 4.3: Sponsor annual safety meeting for county employees	X	X	X	X			
Action 4.4: Take actions during extreme heat to safeguard the health of students and staff by altering school activities	X	X	X	X	X	X	X

Goal 5. Maintain public services to minimize the risk and reduce property damage caused by severe winter weather.							
Action 5.1: Create an emergency snow route for county roads.	X	X	X	X		X	
Action 5.2: Meet annually with critical facilities administrators to develop severe winter weather strategies.	X	X	X	X	X	X	
Action 5.3: Educate the public utility end user on preventive measures to reduce the risk to property.	X	X	X	X	X	X	X
Action 5.4: Develop school policies to protect students and staff during severe winter weather.	X	X	X	X	X	X	X

Those actions with the most “X’s” in the table above were considered higher priority than those with fewer “X’s.” The priority as established above is reflected in the time table set for accomplishing these strategies. The time table is set forth in the plan section that follows.

Detailed Analysis of Mitigation Strategy

This plan has identified the natural hazards that pose the greatest risk to the citizens of Stoddard County and the cities, towns and villages, school districts and colleges within its boundaries. The Stoddard County Commission promotes and supports development of local hazard mitigation plans, projects, and activities by acting as the lead agency in the goals established in this document. The goals and actions place an emphasis on prevention and education. Mitigation measures have been identified that will yield the highest return on the investment of the tax-paying community.

Stoddard County’s Mitigation Plan Update encompasses several jurisdictions. To reduce overall damage in the county, information was used from the Planning Committee, school district and college representatives, state/local officials, and comments from public meetings. Although these strategies are aimed at reducing overall damage in the county, each jurisdiction will be responsible for pursuing the actions that are relevant to that jurisdiction. The jurisdictions, along with the specific actions they will pursue, are listed as follows on the following pages.

The Plan Update identifies projects developed through data collection and research. These projects are important community mitigation actions. Mitigation plan activities

may be considered for funding through various local, state, and federal programs. To insure implementation of mitigation activities, each action item in each jurisdiction will be assigned timelines and responsible organizations. Definitions follow:

- Goal: A state of affairs that a plan is intended to achieve.
- Action: The state or process of acting or doing to effectuate the goals.
- Project Status: All actions from the 2006 Plan were carried over into the 2011 Update. An action that is designated “new” is one that was not in the previously approved 2006 Plan. A designation of “ongoing” means that the action was in the 2006 Plan and is in the 2011 Update, with ongoing activity. A designation of “not yet implemented” is an action from the 2006 Plan upon which no activity has been initiated.
- Progress: The progress of the project if it is ongoing from the previously approved 2006 Plan.
- Responsible Agency: The organizations that will gather resources, locate funding, or oversee project activity, implementation, monitoring and evaluations.
- Economic Analysis: The feasibility of a project by weighing its cost/benefit.
- Estimated Cost: Cost of project if known
- Source of Funds: Funding sources such a local money, grants, or loans.
- STAPLEE: Evaluation of action item based elements of STAPLEE. A letter not listed indicates that particular element of STAPLEE not met.
- Priority Rank: High, Medium, Low defined as follows:

Low-to be initiated in five3 or more years
 Medium-to be initiated in three to five years
 High-to be initiated immediately

- Type of Strategy: Prevention, Property Protection, Natural Resource Protection, Structural Projects, Emergency Services, Public Information and Awareness.
- Hazard Addressed Tornadoes, Severe Thunderstorms, Flooding, Seismic Events, Drought and Extreme Heat, Severe Winter Weather.
- Evaluation: The determining event that provide validation that the objective is met.

Where possible, actions were combined for this more detailed analysis. This was done for the purpose of economy and to increase the efficiency of the presentation.

Mitigation Action Analysis for Stoddard County

Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes and severe thunderstorms/high winds, hail and lightning.

<p>Action 1.1: Encourage construction codes on new buildings to withstand high winds and possible F1 tornado Action 1.2: Seek grant funds for construction of safe rooms Action 1.3: Host workshops annually for business owners and public facilities administrators</p>	
Project Status	Ongoing
Progress	Not yet implemented for all three actions.
Responsible Agency	Stoddard County Commission, School Administrators
Economic Analysis	Cost will save money for insurers/owners-largely administrative cost for these activities
Estimated Cost	Unknown
Source of Funds	Local Match, Private, State and Government Grants
STAPLEE	Actions 1.1 and 1.2 received higher STAPLEE scores and would therefore be slightly higher in priority
Priority Rank	Medium to High
Type of Strategy	Prevent, Life and Property Protection
Hazards Addressed	Tornadoes and Severe Thunderstorms/High Winds, Hail, Lightning
Evaluation	Funding approved and construction completed

Goal 2: Minimize property damage due to flooding, levee failure, and dam failure.

<p>Action 2.1: Develop design criteria for drainage structures on roads within the county’s jurisdiction Action 2.2 Implement erosion control measures on all county highway projects Action 2.4 Coordinate with USACE on impacts of levee failure (new action in 2011 Update)</p>	
Project Status	Ongoing
Progress	Not yet implemented for all three actions listed above.
Responsible Agency	Stoddard County Commission
Economic Analysis	Actions 2.1 and 2.2 would be relatively costly, but will save money for insurers/owners
Estimated Cost	Unknown
Source of Funds	Local

STAPLEE	Actions 2.3 and 2.4 received higher STAPLEE scores and would therefore be a slightly higher priority.
Priority Rank	Medium
Type of Strategy	Prevention, Life and Property
Hazards Addressed	Flooding, levee failure, dam failure
Evaluation	Implementation of new permits

Action 2.3: Continued compliance with, participation in, and implementation of NFIP requirements to reduce flood risks within flood hazard areas by seeking grant funds for flood buyouts, elevation projects, etc.	
Project Status	Action is modified from the 2006 Plan and is ongoing
Progress	The county still participates in the NFIP. No progress on getting grant funding for buyouts, etc.
Responsible Agency	Stoddard County Commission, School Administrators
Economic Analysis	Cost will justify outcome/save lives
Estimated Cost	Unknown, but should be largely administrative costs plus whatever matching amount would be required for a grant.
Source of Funds	Local Match, Private, State and Government Grants
STAPLEE	STAPL-E
Priority Rank	Medium to High
Type of Strategy	Prevent, Life and Property Protection
Hazards Addressed	Flooding, levee failure, dam failure
Evaluation	Funding approved and construction completed

Goal 3: Minimize injuries and property damage due to seismic events.

Action 3.1: Consider BOCA seismic design building codes for future construction	
Action 3.2: Designate an Emergency Operations Center and conduct annual coordination exercises	
Action 3.3: Co-sponsor with appropriate school boards and earthquake public awareness programs for local schools	
Action 3.4: Designate an EOC and conduct quarterly exercises	
Project Status	On-going for Actions 3.1, 3.2, and 3.3. Action 3.4 is new to the 2011 Plan Update.
Progress	New construction in county now adheres to building codes for seismic events, and there has been some progress on the other two projects.
Responsible Agency	Stoddard County Commission, School Boards, College Administrators
Economic Analysis	Cost of construction will save lives

Estimated Cost	\$500.00
Source of Funds	Local
STAPLEE	Actions 3.1 and 3.4 all had higher STAPLEE scores and so would receive higher priority than 3.2 and 3.3
Priority Rank	Medium-High
Type of Strategy	Property Protection, Structural Projects
Hazards Addressed	Earthquakes
Evaluation	Completed policies

Goal 4: Minimize the impact to natural and human resources caused by drought and/or heat wave.

<p>Action 4.1: Adopt “best practices” policy in conjunction with the Soil and Water Conservation Commission</p> <p>Action 4.2: Meet with public electric utility companies to develop “best practices” for power conservation</p> <p>Action 4.3: Sponsor annual safety meeting for county employees</p> <p>Action 4.4: Take actions during extreme heat events to safeguard the health of school children</p>	
Project Status	Ongoing for Actions 4.1 through 4.3, Action 4.4 is new to the 2011 Plan Update.
Progress	Actions 4.1 through 4.3 have not yet been implemented
Responsible Agency	Stoddard County Commissioners
Economic Analysis	Administrative cost will increase effectiveness of practices
Estimated Cost	\$500.00
Source of Funds	Local
STAPLEE	STAPLEE scores indicate the following priority: Action 4.4 is the highest, followed by Action 4.1, then Action 4.3, and last is Action 4.2
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Drought/Heat Wave
Evaluation	Minutes of meeting

Goal 5: Maintain public services to minimize the risk and reduce property damage caused by severe winter weather.

<p>Action 5.1: Create an emergency snow route for county roads</p> <p>Action 5.2: Meet annually with critical facilities administrators to develop severe winter weather strategies</p> <p>Action 5.3: Educate the public utility end user on preventive measures to reduce the risk to property</p>	
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Project Status	On-going for all three actions
Progress	County and local officials participate more readily in mutual agreements, but implementation of the three actions has not commenced.
Responsible Agency	Stoddard County Commission
Economic Analysis	Cost justified because of decrease of economic loss
Estimated Cost	\$200.00
Source of Funds	Local
STAPLEE	Action 5.3 has the highest STAPLEE score, followed by Action 5.2 and then Action 5.1.
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Drought/Heat Wave
Evaluation	Minutes of meetings

Mitigation Action Analysis for Cities of Advance, Bernie, Bell City, Bloomfield, Dexter, Dudley, Essex, Pernernon and Puxico

Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes and severe thunderstorms/high winds, hail, and lightning.

Action 1.1: Encourage construction codes on new buildings to withstand high winds and possible F1 tornado	
Action 1.2: Seek grant funds for construction of safe rooms	
Action 1.3: Host workshops annually for business owners and public facilities administrators	
Project Status	Ongoing
Progress	Not yet implemented for all three actions
Responsible Agency	Stoddard County Commissioners, Mayor, City Council, EMD
Economic Analysis	Cost will save money for insurers/owners-largely administrative costs for these activities
Estimated Cost	Unknown
Source of Funds	Local Match, Government Grants
STAPLEE	Actions 1.1 and 1.2 received higher STAPLEE scores and would therefore be slightly higher in priority
Priority Rank	Medium-High
Type of Strategy	Prevention, Property Protection
Hazards Addressed	Tornadoes, Severe Thunderstorms/High Winds, Hail, Lightning
Evaluation	Funding approved and construction completed

Goal 2: Minimize property damage due to flooding, levee failure, dam failure

Action 2.1: Develop design criteria for drainage structures on roads within the community's jurisdiction	
Action 2.2 Implement erosion control measures on all community road projects	
Action 2.4 Coordinate with USACE on impacts of levee failure	
Project Status	Ongoing
Progress	Not yet implemented for all three actions
Responsible Agency	Mayor, City Council, EMD
Economic Analysis	Actions 2.1 and 2.2 would be relatively costly but will save money for insurers/owners.
Estimated Cost	Unknown
Source of Funds	Local
STAPLEE	Actions 2.3 and 2.4 received higher STAPLEE scores and would therefore be a higher priority
Priority Rank	Medium
Type of Strategy	Prevention, Property Protection
Hazards Addressed	Flooding, levee failure, dam failure
Evaluation	New permits

Action 2.3: Continued compliance with, participation in, and implementation of NFIP requirements to reduce flood risks within flood hazard areas by seeking grant funds for flood buyouts, elevation projects, etc.	
Project Status	Modified from the 2006 Plan and is ongoing
Progress	All participating jurisdictions are continuing to participate. No progress made of funding projects like buyouts.
Responsible Agency	Mayor, City Councils, EMDs, School Administrators
Economic Analysis	Cost will justify outcome/save lives
Estimated Cost	Unknown, but should be largely administrative costs, plus whatever matching amount would be required from the grantor.
Source of Funds	Local Match, Private, State and Government Grants
STAPLEE	STAPL-E
Priority Rank	Medium to High
Type of Strategy	Prevent, Life and Property Protection
Hazards Addressed	Flooding, levee failure, dam failure
Evaluation	Funding approved and construction completed

Goal 3: Minimize injuries and property damage due to seismic events.

<p>Action 3.1: Consider BOCA seismic design building codes for future construction Action 3.2: Designate an Emergency Operations Center and conduct annual coordination exercises Action 3.3: Co-sponsor with appropriate school boards and earthquake public awareness programs for local schools Action 3.4: Designate an EOC and conduct quarterly exercises.</p>	
Project Status	On-going for actions 3.1, 3.2, and 3.3. Action 3.4 is new to the 2011 Update.
Progress	New construction in public buildings now BOCA standard
Responsible Agency	Mayor, City Council, EMD
Economic Analysis	Cost of standard equates to loss of lives and property
Estimated Cost	Unknown
Source of Funds	Local
STAPLEE	Actions 3.1 and 3.4 have higher STAPLEE scores and are therefore higher priority than 3.2 and 3.3
Priority Rank	Medium to High
Type of Strategy	Prevention, Property Protection, Public Information/Awareness
Hazards Addressed	Earthquakes
Evaluation	Completion of policies

Goal 4: Minimize the impact to natural and human resources caused by drought and/or heat wave.

<p>Action 4.1: Adopt “best practices” policy in conjunction with the Soil and Water Conservation Commission Action 4.2: Meet with public electric utility companies to develop “best practices” for power conservation Action 4.3: Sponsor annual safety meeting for county employees Action 4.4: Take actions during extreme heat events to safeguard the health of school children.</p>	
Project Status	Ongoing for Actions 4.1 through 4.3, Action 4.4 is new to the 2011 Plan Update
Progress	Actions 4.1 through 4.3 have not yet been implemented
Responsible Agency	Mayor, City Council, EMD
Economic Analysis	Administrative costs will increase effectiveness of practices
Estimated Cost	\$500
Source of Funds	Local
STAPLEE	STAPLEE scores indicate the following priority: Action 4.4 is the highest, followed by Action 4.1, then Action 4.3, and last is Action 4.2
Priority Rank	Medium

Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Drought/Heat Wave
Evaluation	Minutes of meeting

Goal 5: Maintain public services to minimize the risk and reduce property damage caused by severe winter weather.

<p>Action 5.1: Create an emergency snow route for county roads Action 5.2: Meet annually with critical facilities administrators to develop severe winter weather strategies Action 5.3: Educate the public utility end user on preventive measures to reduce the risk to property</p>	
Project Status	On-going for all three actions
Progress	County and local officials participate more readily in mutual agreement, but implementation of the three actions has not commenced.
Responsible Agency	Mayor, City Council, EMD
Economic Analysis	Cost may lead to less personal injury
Estimated Cost	\$200.00
Source of Funds	Local
STAPLEE	Action 5.3 has the highest STAPLEE score, followed by Action 5.2, and then Action 5.1
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Severe Winter Weather
Evaluation	Minutes of meeting

Mitigation Action Process for Advance R-IV, Bell City R-II, Bernie R-XIII, Bloomfield R-XIV, Dexter R-XI, Puxico R-VIII, Richland R-I and Three Rivers College

Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes and severe thunderstorms/high winds, hail, and lightning.

<p>Action 1.1: Encourage construction codes on new buildings to withstand high winds and possible F1 tornado Action 1.2: Seek grant funds for construction of safe rooms Action 1.3: Host workshops annually for business owners and public facilities administrators</p>	
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Project Status	Ongoing
Progress	Not yet implemented for all three actions because the school did not participate in the 2006 Plan.
Responsible Agency	Board of Ed., Supt., Building Principals, Local EM
Economic Analysis	Cost will save money for insurers/owners-largely administrative costs for these activities
Estimated Cost	Unknown
Source of Funds	Local match, State and Federal Grants, Levy Increase
STAPLEE	Actions 1.1 and 1.2 received higher STAPLEE scores and would therefore be slightly higher in priority
Priority Rank	Medium to High
Type of Strategy	Prevent, Life and Property Protection
Hazards Addressed	Tornadoes, Severe Thunderstorms/High Winds, Hail, Lightning
Evaluation	Funding approved and construction completed.

Goal 2: Minimize property damage due to flooding, levee failure, dam failure.

Action 2.5 Identify actions to mitigate effects of flooding on school day, such as seeking funds for storm water control, altering bus routes and school schedule to accommodate flooded bus routes, inform parents of effects of school day due to flooding.	
Project Status	New
Progress	N/A
Responsible Agency	Board of Education, School Adm., EMD, Police/Fire
Economic Analysis	Cost has potential to avoid injury and disruption of school day
Estimated Cost	\$200
Source of Funds	Local funds, Levy Increase, State and Federal Grants
STAPLEE	This action received a plus under all of the STAPLEE elements
Priority Rank	High
Type of Strategy	Prevention, Property Protection, Emergency Services
Hazards Addressed	Flooding, levee failure, dam failure
Evaluation	New school policies

Goal 3: Minimize injuries and property damage due to seismic events.

Action 3.1: Consider BOCA seismic design building codes for future construction.
Action 3.4: Designate an Emergency Operations Center and conduct quarterly coordinated exercise with school and local emergency management officials
Action 3.5: Inform parents of crisis plan and how it affects their students in case of a disaster (new action in 2011 Update)

Project Status	Ongoing
Progress	No progress on Actions 3.1 and 3.4 on the part of the school or college, because they did not participate in the 2006 Plan
Responsible Agency	Board of Education, School Adm., Local Emergency Officials
Economic Analysis	Avoidance of potential student/staff injury/death
Estimated Cost	\$500
Source of Funds	Local, Levy Increase, State and Federal Grant Funds, Loans
STAPLEE	High STAPLEE scores for Action 3.1 and 3.5, with a lower score for Action 3.4
Priority Rank	Medium-High
Type of Strategy	Property Protection, Emergency Services, Public Awareness
Hazards Addressed	Earthquakes
Evaluation	Update crisis plan

Goal 4: Minimize the impact due to extreme heat.

Action 4.4: Take actions during periods of extreme heat to safeguard the health of students and staff by altering school activities	
Project Status	New
Progress	N/A
Responsible Agency	School Board, School Adm., Emergency Responders
Economic Analysis	Avoidance of heat related injuries is an achievement that far outweighs the administrative costs of altering school activities.
Estimated Cost	\$500
Source of Funds	Local
STAPLEE	STAPLEE
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Awareness
Hazards Addressed	Drought, Extreme Heat Wave
Evaluation	Change in school activities

Goal 5: Minimize risk to students and staff and reduce property damage caused by severe winter weather.

Action 5.4: Develop school policies to protect students and staff during severe winter weather, such as meeting with officials to set priorities for snow removal, canceling classes and informing parents when road conditions are dangerous	
Project Status	New
Progress	N/A
Responsible Agency	School Administrators, Local road officials

Economic Analysis	Avoidance of injury to students/staff is an achievement that far outweighs the administrative costs of altering school activities.
Estimated Cost	\$200
Source of Funds	Local
STAPLEE	Scored “x’s” on all STAPLEE elements, so that it is a high priority item
Priority Rank	High
Type of Strategy	Emergency Services, Public Awareness
Hazards Addressed	Severe Winter Weather
Evaluation	New or update policies

Plan Maintenance Process

Plan Monitoring, Evaluating and Updating

The Stoddard County Commission has total responsibility for the implementation and monitoring process for the 2011 Plan Update. They have oversight capabilities to provide timeframes and support the work of the professional staff and volunteers in their mitigation efforts. The Stoddard County Emergency Manager shall monitor and document the progress on the recommended mitigation actions throughout the year. Quarterly meetings will be chaired by the emergency manager, and will include county officials, the mayors of participating communities, as well as school district and college representatives. At these meetings, assessment of the validity and progress of the Action Plans for each jurisdiction shall be scheduled. The Planning Committee will be involved in the monitoring process. The plans effectiveness will be evaluated as to whether the identified mitigation strategies do in fact protect lives and property. After the plan is approved, the four basic tasks required are:

1. Prepare to update the plan (every five years or after a disaster) at least 18 months prior to plan approval expiration.
2. Examine and document your community for changes.
3. Examine the current plan.
4. Incorporate the necessary revisions into the plan.

Plan monitoring did not occur after approval of the 2004 Hazard Mitigation Plan. Many situations contributed to the lack of monitoring. A major problem was the process was not well-understood at the time of the development of the 2004 Plan. In addition, the planning area has faced declining populations and resources, making monitoring an added strain on the budget. Finally, the planning area has been part of several disasters declarations since 2004, as was detailed earlier in the Plan Update. For these reasons, the monitoring process for the 2011 Plan Update included a more defined timetable for the monitoring activities.

The following items should be addressed in future updates.

- New U.S. Census Data
- Unemployment rates
- Higher education facilities mapping and enrollment information
- Other county demographic information
- Better mapping for school districts
- Jurisdiction specific information concerning vulnerability and potential loss
- Inundation areas for failure of dams and levees in the county

The hazard mitigation plan needs to be revised and reviewed for its validity, adopted by the governing body, and new initiatives implemented. The hazard mitigation plan should be a living document that is revised and reviewed for validity at regularly scheduled intervals, adopted by the governing body, and involves communities and participating entities in the implementation of new initiatives.

Incorporation of Mitigation Strategy into the Local Planning Mechanisms

The Hazard Mitigation Plan for the county and its jurisdictions is a fluid document and must be re-evaluated periodically. Local governments in Stoddard County will incorporate mitigation strategies into other planning mechanisms. Few land development and community planning activities have been initiated in the county because of low population density and scarcity of government resources. However, as land development processes become more formalized, hazard mitigation practices and policies will be considered. Hazard mitigation will also be a consideration when creating the county and local budgets, as well as those of the school districts and college. The chart below specifies the documents available for incorporation of the mitigation plan into other planning mechanisms.

Opportunities for Incorporating Mitigation Principles																	
	Advance R-IV	Bell City R-II	Bloomfield R-	Bernie R-XIII	Dexter R-XI	Puxico R-VIII	Richland R-I	Stoddard Co.	Advance	Bernie	Bell City	Bloomfield	Dexter	Dudley	Essex	Puxico	Penermon
Comprehensive Plan		X	X	X	X	X	X				X			X			
Capital Improvement Plan																	
Watershed Protection																	
Flood Plain Mitigation Plan								X			X				X		
Emergency Management Plan								X	X			X		X	X	X	
Zoning Ordinance								X			X	X			X	X	
Subdivision Regulations								X			X	X			X		
Building Codes								X	X		X	X			X	X	
Storm Water									X		X	X				X	

Management																
Mutual Aid Agreement	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Community Involvement Plan							X		X		X	X				
Community Disaster	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Evacuation Plans	X	X	X	X	X	X	X									
Severe Weather Route Plans	X	X	X	X	X	X	X									
Earthquake Plans	X	X	X	X	X	X	X									
Safe Room Construction	X	X	X	X	X	X	X									

The Stoddard County Hazard Mitigation Plan will be integrated into the Stoddard County Emergency Operations Plan (“EOP”) when it is updated. The EOP update is the responsibility of the Emergency Management Director and staff. The Emergency Operations Plan covers all jurisdictions within Stoddard County.

Local officials have met and will continue to meet with county emergency management personnel, local mayor’s associations, county commissioners, and other county officials to update or apply to their local plans those mitigation strategies defined in the 2011 Plan Update. New capital improvement plans and other new land development regulations will incorporate mitigation principles. Recent natural occurrences, culminating in natural disaster declarations, have allowed local officials to realize the importance of defined mitigation strategies, and have prompted them to incorporate those strategies into their local plans.

Specific information on integration of the plan into other planning mechanisms in the participating jurisdictions is shown in the chart below. The same incorporation activities have occurred during the five years since the previously approved plan was developed.

Integration of Mitigation Actions into Other Planning Mechanisms	
Participating Jurisdiction	Plan for Integration
Stoddard County	Prior to issuing any permits to determine proximity to designated floods areas, the Flood Plane Manager will determine the suitability of the proposed site. Codes and regulations will be review and updated. Staff training will be a priority. Enhanced mutual aid agreements with county jurisdictions will be reviewed.
Advance	The City of Advance will review its ordinances and policies to evaluate their impact on the risks or consequences of the occurrences of natural disasters. The City will review and strengthen its mutual aid agreement with Stoddard Co.
Bernie	The Mitigation Plan will be reviewed and incorporated in the city’s codes and ordinances. Specific emphasis will be placed on zoning and building codes.
Bell City	Bell City will strengthen its Emergency Management Plan with specific emphasis on Flood Plain management and watershed protection and implementation of activities for continued compliance with NFIP. Other emphasis will be on staff training to counter the effects of natural hazards.
Bloomfield	Bloomfield will provide staff review of planned actions, ordinances, and formally review the consequences with the occurrence of natural disasters.
Dudley	Being a very small jurisdiction with few local resources, Dudley will strengthen its mutual aid agreement with the Stoddard County. A review of its emergency management plan specific to natural hazards will occur.
Puxico	Puxico will review its storm water management plan and flood plain management plan. Emphasis will be on mitigation actions such as tree trimming, storm and warming shelters, and continued staff training.
Dexter	Dexter will strengthen its EOP; continue with staff training and mutual aid commitments with other jurisdictions. Particular emphasis will be shown toward mitigation activities identified in the Plan as it relates to flooding, levee protection, and storm water control
Essex	Essex will provide continued staff training, enhance its fire protection and other emergency services to combat natural hazards as identified in the County Plan.
Penermon	Penermon will review and strengthen its storm water management plan, building codes, and mutual aid agreement with Stoddard County.
Richland R-I	Due to its location in an earthquake and flood prone area, the district will continue to strengthen its emergency preparedness plans and exercises. A review of bus routes to avoid effects of natural hazards will be addressed. Building codes to address seismic events will be reviewed Tornado safe rooms will be considered and prioritized in the general planning process.
Bernie R-XIII	Plans to address the natural hazards listed in the Mitigation Plan are ongoing. Emphasis will be placed on earthquakes, flooding, power outages, heat and severe winter weather. Tornado safe room construction should be discussed.
Bloomfield R-XIV	Tornado safe room construction should be prioritized as well as continued and expansion of preparedness plans and exercises.
Dexter R-XI	Tornado safe room construction should be prioritized. A review of all natural hazards as listed in the Mitigation Plan should be initiated and appropriate plan put in place to mitigation those hazards. Examples should include new building codes, emergency drills, bus routes changes, emergency parent notification procedures, and plans for periods of extended power outages.
Bell City R-II	Tornado safe room construction should be addressed as well as continued emphasis on preparedness plans and exercises.
Puxico R-VIII	Plans to address the natural hazards listed in the Mitigation Plan are ongoing. Emphasis will be placed on earthquakes, flooding, power outages, heat and severe

	winter weather. Tornado safe room construction should be discussed.
Advance R-IV	Plans to address the natural hazards listed in the Mitigation Plan are ongoing. Emphasis will be placed on earthquakes, flooding, power outages, heat and severe winter weather. Tornado safe room construction should be discussed.
Three Rivers College	Three Rivers College has a satellite campus located in Dexter which is covered by the Stoddard County Mitigation Plan Update. The location of the college makes it susceptible to the natural hazards as outlined in the Plan. The College has in place an emergency management plan and should continue with and expand its exercises with the city of Dexter. Staff should receive training to response to natural emergencies. The College will consider tornado safe areas as well as a response to seismic events.

Natural hazards as identified in the Mitigation Plan have and will continue to cause damage to life and property in Stoddard County. Historical and recent natural events have occurred in the county, have caused damage, and in all probability will continue. Local government officials recognize the dangers and have in the past participated in and will continue to participate in developing mitigation strategies to lessen the dangers.

Public Participation

Public participation has occurred during the previous five years, and will continue into the next five years by using the following strategy. The Stoddard County Emergency Management Director will coordinate mitigation strategies within the respective county and local jurisdictions. The Stoddard County Planning Commission, which meets weekly, will remain the main focus of local jurisdictional involvement. Emergency preparedness meetings will be held as required to discuss potential damages from natural hazards such as storms, tornadoes, winter storms, and earthquakes. Local officials and agencies, neighboring jurisdictions, and citizens will be notified using the press and local radio stations. The Stoddard County Emergency Management Director will facilitate presentation of the entire plan to interested groups within the county an in neighboring jurisdictions such as:

- Health Department Personnel
- City Fire and Rural Fire Protection Districts
- City Elected Officials/Administrators
- Educational Personnel
- Local Emergency Planning Committees
- Local Police/Sheriff Department Personnel
- Stoddard County Commissioners/Directors

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- Public Safety Committee Meetings
 - School districts and local institutions of higher learning

Defined mitigation strategies and new features will be emphasized to the public in order to provide them with information necessary to protect them from loss of property and injury.

Plan Maintenance

The 2011 Stoddard County Hazard Mitigation Plan Update will be monitored and evaluated on a yearly basis during the months of July and August. Monitoring activities will begin in the year following approval and adoption. This would mean there would be four monitoring/evaluation periods (July/August 2013, July/August 2014, July/August 2015, and July/August 2016). The last monitoring and evaluation in 2016 will lead into the 5-year update process.

The monitoring and evaluation will be facilitated through the Bootheel Regional Planning Commission. It will consist of the following:

- Surveys will be sent to all participating jurisdictions for information that might suggest changes in priorities and mitigation actions due to recent natural hazard events, changes in key personnel, and progress made toward implementing major elements of the Plan.
- Planners at the Bootheel Regional Planning Commission will collect survey information.
- Meetings of the Hazard Mitigation Planning Committee will be convened by the Bootheel Regional Planning Commission to discuss any changes as they related the Plan.
- A yearly report will be written and included as an addition to the update process.

Assuming approval and adoption of the 2011 Plan, it will need to be updated and re-approved by FEMA in the spring of 2016. A proposed schedule for the update is shown below:

Proposed Schedule for 5-year Update of Hazard Mitigation Plan		
Activity	Timeline to Begin(# of months before” Plan Expiration Date”)	Responsible Party
Preliminary update of data	Yearly during maintenance and review of plan	BRPC
Prepare cost estimates for update of plan and submit to SEMA	PED-13	BRPC
Receive Memorandum of Agreement for SEMA for update	PED-11	SEMA
Review data for any additional updates	PED-11	BRPC
Steering Committee presents updates from jurisdictions	PED-10	BRPC
Jurisdictions surveyed for changes	PED-10	BRPC
Meetings to conduct preliminary review and update plan	PED-9	Steering Committee
Public meeting for comment and input on draft update	PED-9	BRPC/Steering Committee
Draft of update due at SEMA	PED-6	BRPC
Participating jurisdictions hold meetings to discuss plan and mitigation actions	PED-6	Jurisdictions
Public meeting #2 for comment and input of final update	PED-4	BRPC/Steering Committee
Final plan due at SEMA for review before submission to FEMA	PED-3	BRPC
Plan reviewed by SEMA	PED-3	SEMA
Required changes and additions	PED-2	BRPC
Plan submitted to FEMA	PED-2	SEMA
Jurisdictions adopt approved plan	PED-1	Jurisdictions
PED = Plan Expiration Date		