
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., windproofing, floodproofing, 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
- e) 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 which 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 and Participating Jurisdiction’s Hazard Mitigation Strategy

Goals are broad general 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 Steering Committee for Dunklin County developed the original goals in 2005 Plan. To re-evaluate the goals and actions for the 2010 Update, the following public participation occurred (See example of public participation).

To re-evaluate the goals and actions, the following public participation occurred (See documents below).

- Bootheel staff met with the Dunklin County Commission in Kennett, Missouri on April 8, 2010 to review draft of Hazard Mitigation Plan.

April 6, 2010

Dunklin County Hazard Mitigation Plan Update

Met with ^{Dunklin} 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 Don Collins Date 4/8/10

Jeanne Moore Herlest Date 4/8/10

Patricia McHenry Date 4/8/10

_____ Date _____

- A questionnaire was mailed to each participating jurisdiction on February 10, 2010 to update goals and actions and to update information on mitigation activities in their communities.

February 10, 2010

City Clerk: Malden

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? _____

Participate in the National Flood Insurance Program Yes No

Water Service(Name) Board of Public Works

Sewer Service(Name) Board of Public Works

Electric Service(Name) Board of Public Works

Fire Service(Name) Malden Fire Department

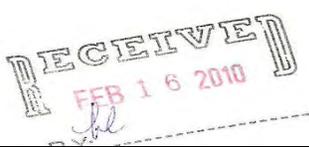
Ambulance Service(Name) Medic One

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.

<u>Better Drainage</u>	<u>Warm Areas</u>
<u>Tree Trimming</u>	<u>Better Emergency Training</u>
<u>Generators</u>	<u>Public Meetings</u>
<u>Safe Areas</u>	<u>School & City Media Information</u>
<u>Supplies</u>	

WJ

Date 2-12-10



- Bootheel Staff met with Dunklin County School Superintendents on November 18, 2009 at Hayti, MO. to discuss involvement and participation

Tri-County Superintendents		
November 18, 2009, Hayti R-II School District		
New Madrid County Schools		
District Name	Representative/Title	Telephone/E-Mail
New Madrid Co R-I		
Gideon C-37	David Hollingshead, Superintendent	573-448-3911 dhollingshead@gideon
Portageville	Toni Hill, Superintendent	573-579-3855 thill@portageville.k12.mo.us
Risco R-II		
* Pemiscot County Schools		
Caruthersville R-18	J.P. Bullington, Superintendent	573-333-6100 ext. 3 jbullington@cps18-c
Hayti R-II	John H. Hurlburt, Superintendent	573-359-6580 fhurlburt@hayti.k12.mo.us
South Pemiscot R-V	Johnny Thurgis, Superintendent	573-655-4426 jthurgis@southpem.k12.mo.us
North Pemiscot R-I	Ferry Thompson, Superintendent	573-628-3471 ferryh@northpem.k12.mo.us
Delta C-7	Bret Williams, Superintendent	573-757-6648 bwilliams@delta7
Cooter R-IV	Will Bell, Superintendent	573-695-3322 bcrowder@cooter.k12.mo.us
Pemiscot R-III	Anthony Hartfield, Superintendent	573-333-1856 anthony@r3.k12.mo.us
Dunklin County Schools		
Campbell R-II	Jay Thornton, Superintendent	573-246-2133 jay@ocampbell.k12.mo.us
Clarkton C-4		
Holcomb R-III	Jessie Burrell, Superintendent	573-792-3113 jburrell@holcomb.k12.mo.us
Kennett 39		
Malden R-I	W. H. Cook, Superintendent	573-276-5794 kcook@malden.k12.mo.us
Senath-Hornersville C-8	Larry Wood, Superintendent	573-738-2669 lwood@shs.k12.mo.us
Southland C-9		
Other Representatives		
Missouri Dept. of Education		
Pemiscot Co. Sp. School Dist.	Sandra Manley, Superintendent	573-859-0021 smanley@pcssd.k12.mo.us
EAST PRAIRIE R-II	Scott Downing, Superintendent	573-649-3562 ext 110 sdowning@epairie.k12.mo.us
Tri-County Supns. of East	Richard Trent	573-651-2863 richard.trent@trisco.m

- Bootheel Regional Planning Commission had published in the Dunklin Democrat an article requesting comments on the Commission’s website.

**Three Rivers Community College-Hazard Mitigation Plans
New Madrid/Dunklin Counties**

Met with Three Rivers Community College Representative

Items of discussion included:

- Overview of Mitigation Plan
- Review of Goals, Objectives, Action Plans
- Recommended review and comments on Plan

Date 4-29-10

TRCC Representative Bud Joerns

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

Bootheel Regional Planning & Economic Development Commission
Meeting Attendance Record

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

Name	Representing	Address	Phone & Email
John Prince	Cardinal	62225	
Frank Sifford	Stoddard County	P.O. Box 257, Bloomfield, Mo.	570-568-3722
AL-BANKEN ✓	DEXTER FIRE DEPT.	301 COOPER DEXTER MO 63841	573-624-3425
Ron Eskew ✓	City of Scott City	215 Chester Ave	264-2157
John Steiner ✓	Stoddard Co (PA)	P.O. Box 624 Bloomfield, Mo 63926	569-4410
JOE WEBER	City of Dexter	708 S. Main St. Dexter, Mo	624-2141
JANET COLEMAN ✓	DEXTER CHAMBER	P.O. Box 21 DEXTER 63841	info@dexterchamber.com
AN COLLINS	DUNKLIN COUNTY	P.O. Box 609 KENNET MO 63857	573-889-7100
Hank Ramsey	City of Parma	P.O. 668 Parma MO 63870	majorofparma@baird.net
Dan Hays	Neville Park	Bluffsfield, Mo	573-568-5205
William A. Smith	City of Caruthersville	200 W. 3rd Caruthersville, Mo	william@caruthersvillecity.com
Tommy Rushing ✓	City of Caruthersville	200 West 3rd Caruthersville, Mo 63830	1774 for Caruthersville, Mo
Charles Jones ✓	City of Caruthersville	104 E. 7th St Caruthersville 63830	charles@caruthersvillecity.com
John Ferguson ✓	Il		627-377-2353
Doriney Barken ✓	City of East Prairie	219 N. Washington	administrator@eastprairiemo.net
Paul Evans ✓	Scott County	PO Box 188 Benton MO	573-649-3057
Alan St. John	Un of Mo-Columbia	304 Cornwell Hall, Columbia	ced@scotcountymo.com
Michael J. Muir	Popl of Egan Dam	201 W High Street Scott City	stjohn@missouri.edu
			m.j.muir@dad.mo.gov

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.

Regional Planning & Economic Development Commission
 Meeting Attendance Record

Recruiting - Respond
 Date: June 17, 2010 Type of Meeting: DED Time: 12:00

*Michelle Miller - DED
 Admin at Yuba - Union of MO - Columbia*

Name	Representing	Address	Phone & Email
Katrina Hodges	Dunklin County Transit	P.O. Box 293 Malden, MO 63863	610 N. Douglas
TED BELLERS	CITY OF MALDEN	201 S. MADISON, MALDEN, MO 63863	ted@newspub.com
AW-BANKEN	DEXTER F.D. E.M.	301 COOPER DEXTER, MO 63841	620-2342 820-1555
Charlie Jones	City of Caruthersville	104 E. 24th St Caruthersville, MO 63628	charlie.jones@caruthersville.com
Blenda Miller	City of Dunderberg	12377 Center St	573-624-3821
Mary Duggan	City of Dunderberg	12377 Center St.	573-624-3821
John Finley	Carthage		
Jessie Newson	City of Howardville	102 Howard, Howardville, MO	573-688-2137
Jessie Newson	City of Paducah	219 N Washington, E Paducah	649-3057
John P Evans	Scott County	PO Box 431 Bristow MO 63736	(573)545 3549
Jessie Newson	←		Howardville jessie@yuba.com
Michael Duggan	BRAC	105 E. North Main St, Dexter	micduggan@newspub.com

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

- Met with representative from Southeast Missouri State University and Mayor of Kennett, Mo. to discuss Dunklin County Natural Hazard Mitigation Plan.

Southeast Missouri State University-Hazard Mitigation Plan
Dunklin County.

Met with Southeast Missouri State University Representative

Items of discussion included:

- Overview of Mitigation Plan
- Relevance to College
- Review of Goals, Objectives, Actions Plans
- Recommended review and comments on Plan
- Discussed adoption measures

Date 7-13-10

SEMO Representative Marsha Blanchard

Met with Mayor of Kennett to discuss Dunklin County Hazard Mitigation Plan. Kennett being the largest city in Dunklin provides leadership to other Dunklin County jurisdictions and surrounding counties. Through the efforts of Kennett Emergency Management Personnel, other county jurisdictions benefit not only from mutual aid in cases of emergency, but also from enhanced mitigation activities.

Date 7-13-2010

Signed Roger Whicker, Sr. Mayor, Kennett, Missouri

- Final draft of goals and actions mailed to Dunklin County mayor for suggestions and comments.



Established 1967

Bootheel Regional Planning and Economic Development Commission

105 E. North Main, • Dexter, MO 63841-1770 • www.bootrpc.com
Phone: (573)614-5178 Fax: (573)614-5182 • E-Mail: bootrpc@newwavecomm.net

July 27, 2010

Randall Baker
City Clerk of Campbell
302 W. Grand Ave.
Campbell, Mo. 63933

Dear Mr. Baker:

I would appreciate it if you could get this information to your mayor. The Bootheel Regional Planning Commission, as you are aware, is finalizing an update of Dunklin County's Natural Hazard Mitigation Plan. After meeting with several public entities, a final draft of goals and objectives are enclosed for review and comments. After approval of the Plan by SEMA, FEMA, and Dunklin County Commission, municipalities and school districts will be given the opportunity to adopt the County Plan.

Any comments or suggestion regarding the plan can be made on line at bootrpc.com. My e-mail address and phone number are also enclosed.

Respectfully,

A handwritten signature in black ink that reads "Michael W. Dumey".

Michael W. Dumey
Regional Planner
BRPC

"Be Regionable"

Evaluation

All mitigation goals, actions, and strategies from the 2005 Plan were re-evaluated at the mitigation workshops. Participants reviewed the approved original 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.

For the 2010 Hazard Mitigation Plan Update, the Planning Committee and workshop participants assessed progress made on the 2005 Dunklin County strategy. The chart below illustrates the findings of the planning committee. Following the chart is a listing of the goals and actions that comprised the 2005 strategy.

2005 Plan Strategy-Hazard Mitigation 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
Dunklin Co.	Green	Red	Red	Red	Green	Red	Red	Red	Green	Red	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Arbyrd	Green	Red	Red	Red	Green	Red	Red	Red	Green	Red	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Campbell	Green	Red	Red	Red	Green	Red	Red	Red	Green	Red	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Cardwell	Green	Red	Red	Red	Green	Red	Red	Red	Green	Red	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Clarkton	Green	Red	Red	Red	Green	Red	Red	Red	Green	Red	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Holcomb	Green	Red	Red	Red	Green	Red	Red	Red	Green	Red	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Hornersville	Green	Red	Red	Red	Green	Red	Red	Red	Green	Red	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Kennett	Green	Red	Red	Red	Green	Red	Red	Red	Green	Red	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Malden	Green	Red	Red	Red	Green	Red	Red	Red	Green	Red	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Rives	Green	Red	Red	Red	Green	Red	Red	Red	Green	Red	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Senath	Green	Red	Red	Red	Green	Red	Red	Red	Green	Red	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow

Green	Goal valid and partially completed
Red	The action was not fully completed before the update, and was included in the update in a revised form
Yellow	Action valid and partially completed, included in the update without revisions

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 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 occupant 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.
- 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, including workshops, for county highway departments to be implemented on July 1, 2006, adopting AASHTO design criteria or cross road drainage structures.

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.
- 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 Dunklin County Courthouse for public education.

Goal 4. Minimize the impact to natural and human resources caused by *drought/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 implemented July 1, 2006.
- Action 4.3: Sponsor annual safety meetings for county employees to address heat stress and conservation strategies 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.
- Action 5.2: Meet annually with critical facilities administrators to develop severe winter weather strategies beginning July 1, 2006.
- Action 5.3: Educate the public and private utility end user on preventive measures to reduce the risk to public and private property by July 1, 2006.

The table below illustrates the results of the 2005 strategy

Goals and Actions in the 2005 Plan 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	Act 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
Dunklin Co.											PC						PC			
Arbyrd						MP											MP			MP
Campbell																				
Cardwell																				
Clarkton																				
Holcomb																				MP
Hornersville											PC									MP
Kennett											PC									
Malden																				MP MP
Rives																				
Senath						MP														MP MP

MP Goal or Policies that lead to Mitigation Plans
PC Goals or Policies that lead to Policy Changes

Further results of the communities’ mitigation activities are shown in the table below. It shows the mitigation activities each jurisdiction has initiated as a result of natural weather occurrences. Although not all activities were specifically enumerated in the previously approved plan, all further the goals of hazard mitigation.

Jurisdictions	Dunklin co.	Arbyrd	Campbell	Cardwell	Clarkton	Holcomb	Hornersville	Kennett	Malden	Rives	Senath
Grants-Fire Stations, Community Centers											
Tree Trimming		X						X	X		X
Drainage		X							X		X
Generators							X		X		X
Warm Spaces				X			X	X	X		
Special Training for Emergencies Workers		X		X					X		X
Public Meetings									X		
Update Emergency Operations Plan	X							X			
Co-ordinate County Resources	X								X		
New Building Codes											
Stormwater Pumps											
Weather Sirens											

Updated February 2010

The planning committee and workshop participants reviewed the goals and actions of the previously approved Hazard Mitigation Plan. They determined not to eliminate any of the goals or actions, but rather to restate some of the goals and actions. In addition, several new actions were proposed, which were related to actions in the previously approved plan. Failure to complete actions from 2005 plan does not mean that those actions were invalid. Due to the cost, time constraints, and varying intensities and severity of natural weather patterns, completed mitigation will continue to be an ongoing process.

The committee endorsed the list below for the 2010 Plan Update. The action items that are new to the Update are indicated in parentheses. This is the complete list of actions considered by the planning committee and workshop participants.

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

- Action 1.1: Schedule meetings with jurisdictions who seek grant funds for construction of safe rooms, flood buyouts, elevation projects, etc.(New to update)
- Action 1.2: Encourage construction codes on new buildings to withstand high winds and a possible F1 tornado(Restated from the 2005 Plan)
- Action 1.3: Encourage construction of tornado safe rooms. (This is essentially Action 1.2 from the 2005 Plan)
- Action 1.4: Host workshops annually for business owners and public facilities administrators to develop plans for the occupants should severe storms threaten. (Unchanged from 2005 Plan)

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

- Action 2.1: Revise building permit application process to include site plan and elevations with submittal approval(New to update)
- Action 2.2: Develop design criteria for drainage structures on roads within the county's jurisdiction projects(Unchanged from 2005 Plan)
- Action 2.3: Implement erosion control measures on all county highway projects(Unchanged in 2005 Plan)
- Action 2.4: Continue compliance and implementation of the requirements for NFIP and reduce the flood risks within hazard area(Restated from Action 2.3 of the 2005 Plan)

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

- Action 3.1: Revise policies to include seismic designs on future construction of critical facilities(New to update)
- Action 3.2: Consider BOCA seismic design building codes for future construction of critical facilities.(Unchanged from 2005 Plan)
- Action 3.3: Designate an Emergency Operations Center and conduct an annual coordination exercise with all county officials.(Unchanged from 2005 Plan)
- Action 3.4: Co-sponsor with appropriate school boards an earthquake public awareness program for local public schools(Unchanged from 2005 Plan)

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

- Action 4.1: Schedule annual meetings with city mayors to discuss power and water conservation practices(New to 2010 Plan)
- Action 4.2: Adopt "best practices" policy in conjunction with the Soil and Water Conservation Commission(Unchanged from 2005 Plan)

- Action 4.3: Meet with public electric utility companies to develop “best practices” for power conservation during periods of drought and heat waves(Restated from 2005 Plan)
- Action 4.4: Sponsor annual safety meetings for county employees to address heat stress(Unchanged from 2005 Plan)

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

- Action 5.1: Schedule meetings with county highway foreman, city street directors, and state highway engineer to discuss snow removal, route closures, and general safety procedures(New to 2010 update)
- Action 5.2: Create an emergency snow route map for the county road system(Unchanged from 2005 Plan)
- Action 5.3: Meet annually with critical facilities administrators to develop severe winter weather strategies(Unchanged from 2005 Plan)
- Action 5.4: Educate the public utility end user on preventive measures to reduce the risk to public and private property(Unchanged from 2005 Plan)

The planning committee/workshop participants then prioritized the updated goals and actions. Each action was reviewed using the STAPLEE criteria. The STAPLEE methodology involves evaluation of each action’s social, technical, administrative, political, legal, economic, and environmental considerations. The STAPLEE analysis uses the following criteria.

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?

A critical component of selecting mitigation goals, actions and strategies to reduce the community’s risk of hazards is ensuring the criteria are consistent with and complementary to other community programs.

The following table provides an analysis of the area’s 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 the action would play a factor in mitigation actions. No “X” in a box indicates this area is not impacted.

Dunklin County 2010 Update Mitigation Action 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: Schedule meetings with jurisdictions who seek grant funds for construction of safe rooms, flood buyouts, elevation projects, etc.	X	X	X	X	X	X	X
Action 1.2: Encourage construction codes on new buildings to withstand high winds and a possible F1 tornado	X	X	X	X	X	X	X
Action 1.3: Encourage construction of tornado safe rooms	X	X	X	X	X	X	X
Action 1.4: Host workshops annually for business owners and public facilities administrators to develop plans for the occupants should severe storms threaten.	X	X		X			
Goal 2. Minimize property damage due to flooding.							
Action 2.1 Revise building permits to include site plan and elevations with submittal approval.	X	X	X	X	X	X	X
Action 2.2: Develop design criteria for drainage structures on roads within the county’s jurisdiction.	X	X	X			X	X
Action 2.3: Implement erosion control measures on all county highway projects.	X	X				X	X
Action 2.4: Continue compliance and implementation of the requirements for NFIP and reduce the flood risks within hazard area.	X	X	X	X	X	X	X
Goal 3. Minimize injuries and property damage due to seismic events.							
Action 3.1: Revise policies to include seismic designs on future construction of critical facilities.	X	X	X	X	X	X	X
Action 3.2: Consider BOCA seismic design building codes for future construction of critical facilities.	X	X	X	X	X	X	X
Action 3.3: Designate an Emergency Operations Center and conduct annual coordination exercises with all county officials.	X		X	X			
Action 3.4: Co-sponsor with appropriate school boards an earthquake public awareness program for local schools.	X		X	X			
Goal 4. Minimize the impact to natural and human resources caused by drought and/or heat wave.							

Action 4.1: Schedule annual meetings with city mayors to discuss power and water conservation practices.	X	X	X	X	X	X	X
Action 4.1: Schedule annual meetings with city mayors to discuss power and water conservation practices.	X	X	X	X	X	X	X
Action 4.2: Adopt “best practices” policy in conjunction with the Soil and Water Conservation Commission.	X	X	X	X			X
Action 4.3: Meet with public electric utility companies to develop “best practices” for power conservation during periods of drought and heat waves	X		X	X			
Action 4.4: Sponsor annual safety meeting for county employees to address heat stress	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: Schedule meetings with county highway foreman, city street directors, and state highway engineer to discuss snow removal, route closures, and general safety procedures.	X	X	X	X	X	X	X
Action 5.2: Create an emergency snow route for county roads	X	X	X	X		X	
Action 5.3: Meet annually with critical facilities administrators to develop severe winter weather strategies.	X	X	X	X	X	X	
Action 5.4: Educate the public utility end user on preventive measures to reduce the risk to property.	X	X	X	X	X	X	X

This plan has identified the natural hazards that pose the greatest risk to the citizens of Dunklin County and the cities, towns and villages, school districts and colleges within its boundaries. The Dunklin 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 measure have been identified that will yield the highest return to the investment of the tax-paying community

Further Analysis of Proposed Mitigation Projects

The planning committee applied the STAPLEE analysis to the list of possible goals and actions beginning on page 186. The process allowed the individual jurisdictions participating in the Plan Update to choose the actions on which to concentrate efforts. Those choices are listed by jurisdiction on the following pages. The listing includes a more in-depth analysis of those actions chosen from the list beginning on page 186. These actions are considered to be 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. The analysis of the actions on the following pages will involve these terms, which are defined as follows:

- Goal: A state of affairs that a plan is intended to achieve.
- Action: The action identified in the preceding pages for the plan update.
- Project Status: Some actions from the 2005 Plan were carried over into the 2011 Update. An action that is designated “new” is one that was not in the previously approved 2005 Plan. A designation of “ongoing” means that the action was in the 2005 Plan and is in the 2011 Update, and activity on the proposed action is ongoing. A designation of “not yet implemented” is an action from the 2005 Plan upon which no activity has been initiated.
- Progress: How much has been achieved towards completion of the action.
- Responsible Agency: The organizations that will gather resources, locate applicable funding, or oversee project activity, implementation, monitoring and evaluations.
- Economic Analysis: The feasibility of a project arrived at by quantifying its cost versus the benefit of achieving the strategy.
- Estimated Cost: Estimated cost of project, if known.
- Source of Funds: Possible funding sources such as local money, grants, or loans.
- Priority Rank: High, Medium, Low, based on the STAPLEE analysis

Low-to be initiated in 5 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 provides validation that the objective is met.

Mitigation Actions for Dunklin County
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Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes and severe thunderstorms.

Action 1.1: Schedule meetings with jurisdictions who seek grant funds for construction of safe rooms, flood buyouts, elevation projects, etc.	
Project Status	New
Progress	N/A
Responsible Agency	Dunklin County Commission, School Administrators
Economic Analysis	Schedule meetings will involve only administrative costs. Low cost is balanced against the desired goal of mitigation against flood damage.
Estimated Cost	Unknown
Source of Funds	Local
Priority Rank	Medium to High
Type of Strategy	Prevent, Life and Property Protection
Hazards Addressed	Tornadoes and Severe Thunderstorms
Evaluation	Funding approved and construction completed

Action 1.2: Encourage construction codes on new buildings to withstand high winds and possible F1 tornado	
Project Status	Restated from the 2005 Plan
Progress	Ongoing
Responsible Agency	Dunklin County Commission, School Administrators
Economic Analysis	Although some cost will be incurred by builders, it would not cost the government to change codes
Estimated Cost	Unknown
Source of Funds	Local
Priority Rank	High
Type of Strategy	Prevention, Life and Property
Hazards Addressed	Tornadoes and Severe Thunderstorms
Evaluation	Implementation of new permits

Action 1.3: Encourage construction of tornado safe rooms	
Project Status	Restated from the 2005 Plan
Progress	Ongoing
Responsible Agency	Dunklin County Commission, School Administrators
Economic Analysis	Encouraging construction costs nothing
Estimated Cost	Unknown
Source of Funds	Local

Priority Rank	Medium-High
Type of Strategy	Prevent, Life and Property Protection
Hazards Addressed	Tornadoes and Severe Thunderstorms
Evaluation	Funding approved and some construction completed

Action 1.4: Host workshops annually for business owners and public facilities administrators	
Project Status	Restated from the 2005 Plan
Progress	Not yet implemented
Responsible Agency	Dunklin County Commissioners, School Administrators
Economic Analysis	Low cost, administrative costs only
Estimated Cost	Unknown
Source of Funds	Local
Priority Rank	Medium to High
Type of Strategy	Prevent, Life and Property Protection
Hazards Addressed	Tornadoes and Severe Thunderstorms
Evaluation	Funding approved and some construction completed

Goal 2: Minimize property damage due to flooding

Action 2.1: Revise building permit system to require submittal of site plans and elevations	
Project Status	New
Progress	N/A
Responsible Agency	Dunklin County Commission
Economic Analysis	Low cost, high benefits to the general public
Estimated Cost	Unknown
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Prevention, Life and Property
Hazards Addressed	Flooding
Evaluation	Implementation of new requirements for building permit approval

Action 2.2: Develop design criteria for drainage structures on roads within the county's jurisdiction	
Project Status	Not yet implemented
Progress	N/A
Responsible Agency	Dunklin County Commission
Economic Analysis	Cost will save money for insurers/owners
Estimated Cost	Unknown
Source of Funds	Local
Priority Rank	Medium

Type of Strategy	Prevention, Life and Property
Hazards Addressed	Flooding
Evaluation	Implementation of new permits

Action 2.3: Implement erosion control measures on all county highway projects	
Project Status	Not yet implemented
Progress	N/A
Responsible Agency	Dunklin County Commission
Economic Analysis	Cost will save money for insurers/owners
Estimated Cost	Unknown
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Prevention, Life and Property
Hazards Addressed	Flooding
Evaluation	Implementation of new erosion requirements

Action 2.4: Continue compliance and implementation of the requirements of NFIP and reduce the flood risk within hazard area	
Project Status	Restated from Action 2.3 in the 2005 Plan
Progress	Participating jurisdictions continue to participate, awareness of the benefits of NFIP participating has increased
Responsible Agency	Dunklin County Commission
Economic Analysis	Low cost to the government, will save money for insurers/owners
Estimated Cost	Unknown
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Prevention, Life and Property
Hazards Addressed	Flooding
Evaluation	Implementation of new permits

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

Action 3.1: Revise policies to include seismic designs on future construction of critical facilities	
Project Status	New to update
Progress	N/A
Responsible Agency	Dunklin County Commission
Economic Analysis	Development of new policies will involve only administrative cost to the governments and benefit many
Estimated Cost	0 upfront costs
Source of Funds	Local
Priority Rank	Medium-high

Type of Strategy	Property Protection, Structural Projects
Hazards Addressed	Earthquakes
Evaluation	Completed policies

Action 3.2: Consider BOCA seismic design building codes for future construction	
Project Status	On-going
Progress	New construction in county now adheres to building codes for seismic events
Responsible Agency	Dunklin County Commission
Economic Analysis	Development of new policies will involve only administrative costs to the governments and benefit many
Estimated Cost	0 upfront costs
Source of Funds	Local
Priority Rank	Medium-High
Type of Strategy	Property Protection, Structural Projects
Hazards Addressed	Earthquakes
Evaluation	Completed policies

Action 3.3: Designate an Emergency Operations Center and conduct annual coordination exercises	
Project Status	On-going
Progress	On-going
Responsible Agency	Dunklin County Commission
Economic Analysis	Cost of construction will save lives
Estimated Cost	\$500
Source of Funds	Local
Priority Rank	Medium-High
Type of Strategy	Property Protection, Structural Projects
Hazards Addressed	Earthquakes
Evaluation	Completed EOC and annual exercises

Action 3.4: Co-sponsor with appropriate school boards an earthquake public awareness program for local schools	
Project Status	On-going
Progress	Public awareness program in place
Responsible Agency	Dunklin County Commission
Economic Analysis	Cost of construction will save lives
Estimated Cost	\$500
Source of Funds	Local
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.

Action 4.1: Schedule annual meeting with city mayors to discuss power and water conservation practices	
Project Status	New
Progress	N/A
Responsible Agency	Dunklin County Commission
Economic Analysis	No cost other than administrative cost vs. hazard mitigation
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Drought/Heat Wave
Evaluation	Minutes of meeting

Action 4.2 Adopt “best practices” policy in conjunction with the Soil and Water Conservation Commission	
Project Status	Same as in the 2005 Plan
Progress	Not yet implemented
Responsible Agency	Dunklin County Commission
Economic Analysis	Not cost other than administrative costs, while assisting in the goal of hazard mitigation
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Drought/Heat Wave
Evaluation	Minutes of meeting, new policies adopted

Action 4.3 Meet with public electric utility companies to develop “best practices” for power conservation	
Project Status	Same as in the 2005 Plan
Progress	Not yet implemented
Responsible Agency	Dunklin County Commission
Economic Analysis	Not cost other than administrative costs for government and agencies involved, while assisting in the goal of hazard mitigation
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Drought/Heat Wave
Evaluation	Minutes of meeting

Action 4.4 Sponsor annual safety meeting for county employees	
Project Status	New
Progress	Not yet implemented
Responsible Agency	Dunklin County Commission
Economic Analysis	Cost increases effectiveness of practices
Estimated Cost	No cost other than administrative costs for government and agencies involved, while assisting in the goal of hazard mitigation
Source of Funds	\$0
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.

Action 5.1: Schedule meetings with county highway foreman, city street directors, and state highway engineer to discuss snow removal, route closures, and general safety procedures.	
Project Status	New
Progress	County and local officials participate more readily in mutual agreements
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost other than administrative costs for government and agencies involved, while assisting in the goal of hazard mitigation
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Severe Winter Weather
Evaluation	Minutes of meetings

Action 5.2: Create an emergency snow route for county roads	
Project Status	Restated from 2005 Plan, eliminated the 2006 date
Progress	County and local officials participate more readily in mutual agreements
Responsible Agency	Dunklin County Commission
Economic Analysis	Only administrative costs for government and agencies involved, while assisting in the goal of hazard mitigation
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Severe Winter Weather

Evaluation	Minutes of meetings, snow routes created
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Action 5.3: Meet annually with critical facilities administrators to develop severe winter weather strategies	
Project Status	Restated from 2005 Plan, eliminated the 2006 date
Progress	Officials participate more readily in strategy sessions
Responsible Agency	Dunklin County Commission
Economic Analysis	Only administrative costs for government and agencies involved, while assisting in the goal of hazard mitigation
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Severe Winter Weather
Evaluation	Minutes of meetings

Action 5.4: Educate the public utility end user on preventive measures to reduce the risk to property	
Project Status	Restated from 2005 Plan, eliminated the 2006 date
Progress	County and local officials participate more readily in mutual agreements
Responsible Agency	Dunklin County Commission
Economic Analysis	Only administrative costs for government and agencies involved, while assisting in the goal of hazard mitigation
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Severe Winter Weather
Evaluation	Minutes of meetings

Mitigation Actions for the Cities of: Arbyrd, Campbell, Cardwell, Clarkton, Holcomb, Hornersville, Kennett, Malden, Rives and Senath

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

Action 1.1: Seek grant funds for construction of safe rooms, flood buyouts, elevation projects, etc.	
Project Status	New
Progress	N/A

Responsible Agency	Mayor, City Council, EMD, School Administrators
Economic Analysis	Construction of safe rooms is likely to be costly, and cannot be accomplished without grant money, but the cost will be justified outcome and save lives
Estimated Cost	Unknown but over \$100,000
Source of Funds	Local Match, Private, State and Government Grants
Priority Rank	Medium to High
Type of Strategy	Prevent, Life and Property Protection
Hazards Addressed	Tornadoes and Severe Thunderstorms
Evaluation	Funding approved and construction completed

Action 1.2: Encourage construction codes on new buildings to withstand high winds and possible F1 tornado	
Project Status	Same as in the previously approved 2005 Plan
Progress	Changing construction codes in an ongoing project
Responsible Agency	Mayor, City Council, EMD, School Administrators
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium to High
Type of Strategy	Prevent, Life and Property Protection
Hazards Addressed	Tornadoes and Severe Thunderstorms
Evaluation	Funding approved and construction completed

Action 1.3: Encourage construction of tornado safe rooms	
Project Status	New
Progress	This is an ongoing project
Responsible Agency	Mayor, City Administrators, EMP, School Administrators
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local Match, Private, State and Government Grants
Priority Rank	Medium-High
Type of Strategy	Prevention, Life and Property
Hazards Addressed	Tornadoes and Severe Thunderstorms
Evaluation	Funding approved and construction completed

Action 1.4: Host workshops annually for business owners and public facilities administrators	
Project Status	New
Progress	This project has not been initiated
Responsible Agency	Mayor, City Administrators, EMP, School Administrators
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local Match, Private, State and Government Grants
Priority Rank	Medium-High
Timeline	1-2 years
Type of Strategy	Prevention, Life and Property
Hazards Addressed	Tornadoes and Severe Thunderstorms
Evaluation	Funding approved and construction completed

Goal 2: Minimize property damage due to flooding

Action 2.1: Revise building permits to include site plans and elevations with submittal approval	
Project Status	New
Progress	N/A
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local Match, Private, State and Government Grants
Priority Rank	Medium
Type of Strategy	Prevention, Life and Property
Hazards Addressed	Flooding
Evaluation	Implementation of new permits

Action 2.2: Develop design criteria for drainage structures on roads within the county's jurisdiction	
Project Status	Same as 2005 Plan- no change
Progress	Implementation has not yet begun
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	Developing design criteria is no cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local Match, Private, State and Government Grants
Priority Rank	Medium
Type of Strategy	Prevention, Life and Property

Hazards Addressed	Flooding
Evaluation	Implementation of new design criteria for road drainage structures

Action 2.3: Implement erosion control measures on all county highway projects	
Project Status	Same as 2005 plan – no change
Progress	Implementation has not yet begun
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local Match, Private, State and Government Grants
Priority Rank	Medium
Type of Strategy	Prevention, Life and Property
Hazards Addressed	Flooding
Evaluation	Implementation of new permits

Action 2.4: Continue compliance and implementation of the requirements of NFIP and reduce the flood risk within hazard area	
Project Status	Same as 2005 plan – no change
Progress	Participating jurisdictions are still participating and awareness of the benefits of participation has increased
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local Match, Private, State and Government Grants
Priority Rank	Medium
Type of Strategy	Prevention, Life and Property
Hazards Addressed	Flooding
Evaluation	Implementation of new permits

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

Action 3.1: Revise policies to include seismic designs on future construction of critical facilities.	
Project Status	Unchanged from 2005 Plan
Progress	New construction in county now adheres to building codes for seismic events
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0

Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Property Protection, Structural Projects
Hazards Addressed	Earthquakes
Evaluation	Completed policies

Action 3.2: Consider BOCA seismic design building codes for future construction	
Project Status	Unchanged from 2005 Plan
Progress	New construction in county now adheres to building codes for seismic events
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium-High
Type of Strategy	Property Protection, Structural Projects
Hazards Addressed	Earthquakes
Evaluation	Completed building codes adopted

Action 3.3: Designate an Emergency Operations Center and conduct annual coordination exercises.	
Project Status	Unchanged from 2005 Plan
Progress	This project is ongoing but not completed
Discussion	Co-sponsor with appropriate school boards and earthquake public awareness program for local schools
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	Low cost to local governments, but still contributing to communities response capabilities
Estimated Cost	\$500
Source of Funds	Local
Priority Rank	Medium-High
Type of Strategy	Property Protection, Structural Projects
Hazards Addressed	Earthquakes
Evaluation	Completed EOC

Action 3.4: Co-sponsor with appropriate school boards and earthquake public awareness program for local schools.	
Project Status	Unchanged from 2005 Plan
Progress	This project is ongoing but not completed
Responsible Agency	Mayor, City Council, EMP

Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium-High
Type of Strategy	Property Protection, Structural Projects
Hazards Addressed	Earthquakes
Evaluation	Completed programs

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

Action 4.1: Schedule annual meeting with city mayors to discuss power and water conservation practices	
Project Status	New
Progress	N/A
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Drought/Heat Wave
Evaluation	Minutes of meetings

Action 4.2: Adopt “best practices” policy in conjunction with the Soil and Water Conservation Commission	
Project Status	Unchanged from previously approved 2005 Plan
Progress	This project is ongoing but has not been completed
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Drought/Heat Wave
Evaluation	Minutes of meeting and policy adoption

Action 4.3: Meet with public electric utility companies to develop “best practices” for power conservation	
Project Status	Unchanged from previously approved 2005 Plan
Progress	This project is ongoing but has not been completed
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Drought/Heat Wave
Evaluation	Minutes of meetings

Action 4.5: Sponsor annual safety meeting for county employees	
Project Status	Unchanged from previously approved 2005 Plan
Progress	This project has not been initiated
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Drought/Heat Wave
Evaluation	Minutes of meetings

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

Action 5.1: Schedule meetings with county highway foreman, city street directors, and state highway engineer to discuss snow removal, route closures, and general safety procedures.	
Project Status	New
Progress	N/A
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost to local governments other than administrative costs, but still contributing to hazard mitigation efforts
Estimated Cost	\$0
Source of Funds	Local

Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Severe Winter Weather
Evaluation	Minutes of meetings

Action 5.2: Create an emergency snow route for county roads.	
Project Status	New
Progress	County and local officials participate more readily in mutual agreements
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	Low cost and decrease of economic loss
Estimated Cost	\$200.00
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Severe Winter Weather
Evaluation	Minutes of meetings

Action 5.3: Meet annually with critical facilities administrators to develop severe winter weather strategies	
Project Status	Same as the approved 2005 Plan
Progress	County and local officials participate more readily in mutual agreements
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost except administrative costs
Estimated Cost	\$0
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Drought/Heat Wave
Evaluation	Minutes of meetings

Action 5.4: Educate the public utility end user on preventive measures to reduce the risk to property.	
Project Status	Same as the approved 2005 Plan
Progress	This project has not been implemented yet
Responsible Agency	Mayor, City Council, EMP
Economic Analysis	No cost except administrative costs
Estimated Cost	\$0

Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Severe Winter Weather
Evaluation	Minutes of meetings

Mitigation Actions for Campbell R-II, Clarkton C-4, Holcomb R-III, Kennett 39, Malden R-I, Senath-Hornersville C-8, Southland C-9, Southeast Missouri State University (Kennett, Malden), Three Rivers College (Campbell, Kennett, Malden)

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

Action 1.1: Seek grant funds for construction of safe rooms, flood buyouts, elevation projects, etc. and encourage construction codes on new buildings to withstand high winds and possible F1 tornado.	
Project Status	New
Progress	N/A
Responsible Agency	Board of Education and Regents, School Administrators
Economic Analysis	High cost of safe room construction will be justified by the outcome/save lives
Estimated Cost	Unknown but over \$100,000
Source of Funds	Local Match, Private, State and Government Grants
Priority Rank	Medium to High
Type of Strategy	Prevent, Life and Property Protection
Hazards Addressed	Tornadoes and Severe Thunderstorms
Evaluation	Funding approved and construction completed

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

Action 3.4: Co-sponsor with appropriate school boards an earthquake public awareness program for local schools	
Project Status	Ongoing, restated from 2005 Plan to suit newly participating school districts
Progress	This project is ongoing but has not been completed
Responsible Agency	Board of Education, School Administrators
Economic Analysis	Cost of construction will save lives
Estimated Cost	\$500
Source of Funds	Local
Priority Rank	Medium-High
Type of Strategy	Property Protection, Structural Projects
Hazards Addressed	Earthquakes
Evaluation	Completed policies

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

Action 5.2 and 5.3: Create emergency snow routes for school buses, and develop severe winter weather strategies	
Project Status	Restated and combined two actions from the previously approved 2005 plan to suit school district participation
Progress	Not completed but is ongoing
Responsible Agency	Board of Education and Regents, School Administrators
Economic Analysis	Low cost, and decrease of economic loss
Estimated Cost	\$200.00
Source of Funds	Local
Priority Rank	Medium
Type of Strategy	Emergency Services, Public Information and Awareness
Hazards Addressed	Severe Winter Weather
Evaluation	Minutes of meetings

Plan Maintenance Process

Plan Monitoring, Evaluating and Updating

The Dunklin County Commission has total responsibility for the implementation and monitoring process. The Commission has oversight capabilities to provide timeframes and support the work of the professional staff and volunteers in their mitigation efforts. The Dunklin County Emergency Manager shall monitor and document the progress of the recommended mitigation action throughout the year. Quarterly meetings, chaired by the emergency manager, with the assistance of the mayors, should assess the validity and progress of the Action Plans for each city. The Planning Team 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).
2. Examine your community for changes.
3. Examine the current plan.
4. Incorporate the necessary revisions into the plan.

The following items should be addressed in future updates.

- New U.S. Census data
- Unemployment rates
- Higher education facilities mapping an enrollment information
- Other county demographic information
- Better mapping for school districts
- Jurisdiction specific information concerning vulnerability and potential loss
- Vulnerability to land by breach of levees in the county

The hazard mitigation plan is a dynamic document that needs to be revised and

reviewed for its validity, adopted by the governing body, and new initiatives implemented.

Local Incorporation of Mitigation Strategy into Other Planning Mechanisms

The Hazard Mitigation Plan for the county and its jurisdictions is a fluid document and must be re-evaluated periodically. The process by which local governments in Dunklin County will incorporate mitigation strategies into other planning mechanisms can be described as follows: Natural hazards as identified in the Mitigation Plan have and will continue to cause damage to life and property in Dunklin 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.

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 Plan. 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.

Mitigation planning is an on-going process designed to safeguard counties and local jurisdictions from damages caused by natural hazards. The chart below specifies the documents available for incorporation of the mitigation plan into other planning mechanisms.

Mitigation Plan to Other Planning Mechanism-Dunklin County																				
	Dunklin Co.	Arbyrd	Campbell	Cardwell	Clarkton	Hlocomb	Hornersville	Kennett	Mlden	Rives	Senath	Campbell R-II	Clarkton C-4	Holcomb R-III	Kennett 39	Malden R-I	Senath-Hornersville	Southland C-9	TRCC	SEMO
Local Comprehensive Plan				X			X			X										
Capital Improvement Plan								X	X		X									
Watershed Protection								X												
Flood Plain Mitigation Plan		X	X	X			X				X									
Emergency Management Plan	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X
Zoning Ordinance			X				X	X			X									
Subdivision Regulations			X	X			X	X			X									
Building Codes			X			X		X	X											
Storm water Management				X	X		X	X												
Mutual Aid Agreement	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Community Involvement Plan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Community Disaster Preparation Plan	X							X	X											
Evacuation Plan												X	X	X	X	X	X	X	X	X
Severe Weather Route Plans												X	X	X	X	X	X	X	X	X
Earthquake Plans												X	X	X	X	X	X	X	X	X
Safe Room Construction												X	X	X	X	X	X	X	X	X

The Dunklin County Hazard Mitigation Plan will be integrated into the Dunklin County Emergency Operations Plan 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 Dunklin County.

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
Dunklin 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.
Arbyrd	The City of Arbyrd 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 Dunklin Co.
Campbell	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.
Cardwell	Cardwell 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.
Clarkton	Lilbourn will provide staff review of planned actions, ordinances, and formally review the consequences with the occurrence of natural disasters.
Rives	Being a very small jurisdiction with few local resources, Rives will strengthen its mutual aid agreement with the Dunklin County. A review of its emergency management plan specific to natural hazards will occur.
Holcomb	Holcomb 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.
Hornersville	Hornersville 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
Kennett	Kennett will provide continued staff training, enhance its fire protection and other emergency services to combat natural hazards as identified in the County Plan.
Malden	Malden will review and strengthen its storm water management plan, building codes, and mutual aid agreement with Dunklin County.
Senath	Senath will strengthen its mitigation activities such as tree trimming, warm and cooling shelters, watershed protection plan, and mutual aid agreement plan.

SEMO-Malden-Kennett	Tornado safe room construction should be prioritized. A review of all natural hazards as listed in the Mitigation Plan should be reviewed 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 periods of extended power outages.
Three Rivers Community College-Malden-Campbell-Kennett	Three Rivers Community College has a satellite campus located in Portageville which is covered by the Dunklin County Mitigation Plan. The location of the college makes in 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 Kennett. Staff should receive training in response to natural emergencies. The College should consider tornado safe areas as well as a response to seismic events.

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 Dunklin County Emergency Management Director will coordinate mitigation strategies within the respective county and local jurisdictions. The Dunklin 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 citizens will be notified using the press and local radio stations. The Dunklin County Emergency Management Director will facilitate presenting the entire plan to interested groups within the county 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
- Dunklin County Commissioners/Directors
- Public Safety Committee Meetings

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 Dunklin County Hazard Mitigation Plan will be monitored and evaluated on a yearly basis during the months of July and August, beginning in the year following approval and adoption. This would mean there would be four monitoring/evaluation periods (July/August 2011, July/August 2012, July/August 2013, and July/August 2014). The last monitoring and evaluation in 2014 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 Steering 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 current plan, the Dunklin County Hazard Mitigation Plan will need to be updated and re-approved by FEMA in the summer of 2015. A proposed schedule for the update is shown below:

Proposed Schedule for 5-year Update of Hazard Mitigation Plan		
Activity	Timeline to Begin	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		