

Chapter 10: Selected Mitigation Actions and Mitigation Strategy

This chapter provides the list of mitigation actions by jurisdiction and the strategy for its implementation. It also lists the selected mitigation actions by the main goal and objective to which the action pertains.

10.1: Selection of Alternative Measures by Jurisdiction

In this section, the alternative measures selected by jurisdiction are listed for further consideration later in the implementation strategy. The following table shows the mitigation actions selected across the jurisdictions. The following table does not limit the types of actions that can be undertaken but rather lists those that the jurisdictions (local governments, schools, and other key stakeholder organizations in the county) seek to implement in the next five years from among the comprehensive list of alternatives provided. The individual scores for a measure in each jurisdiction is one factor in selecting those for inclusion in the implementation plan. Another is the inclusion of a requirement of the State of Iowa or FEMA, such as NFIP participation.

Table 10.1: Selected Actions By Jurisdiction

Selected Mitigation Action	Marion Co. *	Bussey	Harvey	Knoxville	Melcher-Dallas	Pella	Pleasantville	Swan	Clay Twp Fire	Indiana Twp Fire	Central College	Knoxville CSD	M-D CSD	Pella CSD	Twin Cedars CSD	Knoxville Hospital	Pella Hospital
Acquire modern chemicals and equipment for firefighting		X	X		X	X			X	X							
Adopt a thorough emergency operations plan (EOP) addressing hazards and mass casualties	X			X			X	X		X	X	X	X			X	
Adopt/promote terrorism response plan											X		X				
Adopt building codes to address various natural hazards			X	X	X												
Adopt manufactured home development storm shelter ordinances			X					X									
Adopt tree trimming ordinance			X					X									
Alternate bus routes and plans for road closures												X					
Annual storm spotter training						X											
Ask FEMA to complete digital FIRM maps or to update maps	X				X		X										
Assure jurisdictional plans are in place and current	X				X		X	X							X		
Back-up jurisdictional files, store in alternative locations	X							X						X		X	
Bury utility lines in existing and new development						X										X	
Business and residential preparedness program								X								X	
Clear and deepen ditches on right-of-ways		X						X									
Community drills	X		X				X			X						X	X
Conduct engineering studies on water and sewer plants					X												
Conduct study on possible illegal use of sump pumps					X	X	X										
Construct backup wells for water systems						X											
Construct community safe rooms	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	
Construct or repair dams	X																
Construct storage facilities for pesticides, insecticides, chemicals				X													
Construct storm water drainage (underground, culverts, curb and gutter, basins, buffer strips, etc.)		X			X		X	X									
Continue work on preparations and planning for dam			X														

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failure																		
Create a jurisdictional continuity of operations and succession plan	X	X			X		X	X		X					X	X	X	
Demolish abandoned properties	X	X			X		X											
Designate/enforce area HAZMAT transportation routes									X									
Develop annual leadership awareness campaign about the plan		X		X	X		X		X	X	X	X	X			X	X	
Develop electronic directory of local and other resources	X		X		X			X		X						X		
Develop/enforce snow removal policies									X	X							X	
Develop/implement an extreme heat event medical response plan			X				X	X		X							X	
Develop/implement recovery plan for power failure			X				X	X		X							X	
Develop/implement watershed studies and plans for possible flood prone areas	X																	
Develop local debris disposal sites					X			X										
Develop/maintain hazardous materials inventories / list of critical facilities with hazardous materials										X								
Develop/maintain security at applicable assets (surveillance cameras, lighting)	X		X	X		X	X		X		X		X					
Develop search and rescue team							X			X								
Develop soil erosion stabilization projects	X								X									
Develop/update/publicize community evacuation plan			X				X	X		X	X		X					
Develop volunteer base - trained and standby groups							X	X					X					
Emergency response guidebooks in key vehicles				X							X	X	X	X	X	X		
Encourage citizen purchase/use of smoke detectors									X	X								
Enforce burning restrictions	X				X					X								
Enforce multi-family housing extinguisher laws				X														
Establish alert systems for vulnerable populations	X				X			X	X	X	X					X		X
Establish backup communications systems or center								X		X								
Establish HAZMAT decontamination sites																		X
Establish neighbor watch programs for vulnerable populations during winter storms, extreme heat, etc.																		X
Evaluate Mile-Long Bridge integrity regularly																		X
Formally designate and stock school buildings as community shelters	X								X		X	X	X			X		
Full review of policy, procedure, and codes	X	X	X		X		X			X	X	X	X			X		
Full sprinkler systems											X	X						
GIS mapping system implementation and digital hazard maps		X		X														
Harden public buildings	X	X		X							X		X			X		
Hire or designate public information officer	X					X												
Implement mass casualty incident plan																	X	
Improve public awareness of hazard risks - dispense print materials	X	X		X	X	X	X	X	X	X			X	X	X	X	X	
Improve roads (resurface, pave, widen, etc.)	X	X	X					X	X		X							
Increase bridge capacity	X									X								
Increase public awareness on household hazardous materials		X						X										
Initial community briefings immediately after events					X							X						
Inspect water lines					X													
Install alternative or sustainable storm water control options such as buffer strips, bioswales, and rain gardens				X								X						
Install backflow devises						X												
Install central sewer system								X										
Install computers and/or GPS units in emergency/County vehicles	X			X	X	X			X	X								
Install flood gauges	X																	

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Install and/or update antivirus software					X				X										
Install hazard signs in area campgrounds, parks, and open space	X																		
Install new fire hydrants		X	X	X					X										
Install warning sirens	X	X						X	X	X									X
Install water impervious manhole covers			X			X													
Install wind breaks	X																		X
Integrate safe room retrofits into critical assets/facilities	X	X		X		X		X			X	X	X		X	X			
Investigate alternative water sources for fire suppression								X											
Investigate and implement alternative energy sources								X			X								
Lightning protection of tall buildings and towers											X								
Maintain active participation in the NFIP program	X	X	X	X	X	X	X	X											
Maintain Emergency Operations Center with 24-hr capabilities	X										X								
Make all campus facilities handicap accessible											X								
Map past chemical contamination sites				X						X									
New or upgrade fire stations						X			X										
NOAA weather radio programs, installation in public buildings, incentives		X	X	X	X		X			X									X
Place law enforcement officers in schools																X			
Post an information sign or kiosk																	X		
Promote good landscaping practices among property owners	X		X																
Promote the construction of private in-home tornado safe rooms	X	X						X											
Promote and provide safe room design education for builders and developers											X								
Purchase new fire trucks/ambulances		X	X			X			X	X									
Purchase new, modernize, and/or harden existing mobile and personal communications equip	X				X		X			X	X		X		X		X		
Purchase/install backup fixed power generators	X	X	X	X				X	X	X			X		X	X	X		
Purchase road closure barricades				X				X											
Purchase SCBA—self-contained breathing apparatus				X		X			X	X									
Purchase snow plows, trucks, and sanders	X		X	X				X											
Purchase stand-by portable pumps and generators	X	X		X	X			X	X	X	X		X						X
Purchase thermal imaging system for fire department									X	X									
Purchase vehicle extrication equipment						X			X	X									
Raise grade to eliminate backup flooding																	X		
Redundant systems and looping (water, sewer, electric, gas)			X				X						X						
Remove asbestos from campus											X								
Remove underground fuel storage tanks					X														
Remove unused chemical containers					X														
Replace bridges and culverts		X																	
Replace, expand, or improve water and sewer lines	X	X				X				X	X								
Restricted access procedures				X						X					X	X			
Retrofit/harden existing overhead utility lines	X					X													
Reverse E911 program	X				X				X	X									
Review/update HAZMAT emergency plan											X								
Special needs/oxygen user registration program	X									X									X
Subdivision ordinances to address hazard interface areas	X																		
Train first responders, EMTs, firefighters, and emergency disaster responders	X		X		X	X			X	X									
Tree planting programs on campus	X										X		X	X					
Tree trimming projects for school properties															X				
Undertake stream modifications	X					X													
Update and enforce zoning ordinances	X																		

* Including Army Corps of Engineers – Lake Red Rock

10.2: Implementation Strategy by Jurisdiction

According to FEMA guidance, the final major piece in the mitigation plan is the implementation strategy for the jurisdictions that are included in the mitigation plan. The mitigation strategy is a description of the proposed mitigation actions by jurisdiction that details the timeline, leadership, and funding for the action. The following tables provide the proposed implementation plans for each jurisdiction. The mitigation plan was reviewed and discussed during the seventh mitigation planning meeting.

Please note that when each jurisdiction adopts the plan, this document, the jurisdiction indicates willingness to implement the projects that are discussed in this section, more or less as proposed. Also note that some mitigation actions taken in one jurisdiction may affect hazard mitigation efforts in other jurisdictions even if such actions are not mentioned as part of the approved strategy for those other jurisdictions, as shown on the column to the right.

Table 10.2: Marion County (Including rural & Army Corps of Engineers) Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Develop soil erosion stabilization projects	US Army Corps of Engineers (US ACE), County Conservation	2012	2013	\$25,000	1, 2, 3, 5, 6, 7	Soil erosion prevented by landscaping projects	N
H	Establish alert systems for vulnerable populations	US ACE, Marion Co EMA	2012	2013	\$1,000/yr	1, 2, 6, 7	Hospital working with residential facilities and outpatients	Y
H	Install warning sirens	US ACE, EMA, Sheriff, Board of Supervisors (BOS),	2012	2016	\$10,000 ea.	1, 2, 3, 4, 5, 7	Sirens cover key parts of county	N
H	Maintain active participation in the NFIP program	BOS, EMA, floodplain manager	2012	2016	\$1,000	1, 2, 3, 4	Ordinances enforced, compliance maintained	N
H	Maintain Emergency Operations Center with 24-hr capabilities	EMA commission	2013	2015	\$100,000	1, 2, 3, 4	Countywide facility	Y
H	Install hazard signs in area campgrounds, parks, and open space	Conservation board, State DNR, US ACE	2013	2015	\$1,000	1, 2, 3, 6	Signs installed about myriad of hazards, locations of shelters, etc.	Y
H	Construct or repair dams	US ACE	2014	2016	\$10 M+	1, 6	Updates to Red Rock Dam	Y
H	Construct public safe rooms in parks and campgrounds	US ACE, All county depts, IDNR	2014	2016	\$500,000	1, 2, 3, 4	Students, staff, visitors protected	N
M	Develop electronic directory of local and other resources	Marion Co. EMA, NRCS	2014	2015	\$500	1, 2, 7	In place and updated regularly	Y
H	Install flood gauges	US ACE	2014	2016	\$10,000	1, 4, 6	Flood risks monitored	Y
M	Special needs/oxygen user registration program	EMA commission	2014	2015	\$1,000/yr	1, 2, 6, 7	Database maintained and EOP plans based on needs of such groups	Y
M	Reverse E911 program	EMA commission	2014	2015	\$7,500	1, 2, 7	Implemented an active reverse E911 program	Y
H	Integrate safe room retrofits	BOS, churches,	2014	2016	\$500,000+	1, 2, 3, 4, 7	Safe rooms added to	N

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	into critical assets/facilities	State DNR, US ACE					building remodels	
L	Hire or designate public information officer	EMA/BOS	2014	2015	\$5,000	1, 2	Public information officer is designated and offers good service	Y
H	Purchase snow plows, trucks, and sanders	Secondary Roads	2014	2015	\$100,000	1, 2, 5	Snow removal equipment purchased and used	Y
H	Develop/maintain security at applicable assets (surveillance cameras, lighting)	All county depts, US ACE	2014	2015	\$10,000+	1, 2, 5, 6, 7	Less property damage and loss	Y
H	Retrofit/harden existing overhead utility lines	Pella Electric, other utility providers	2014	2016+	\$1 million	1, 2, 4, 7	Priorities established and lines hardened over time	Y
M	Purchase stand-by portable pumps and generators	US ACE	2015	2016	\$5,000 ea.	1, 2, 5, 7	Purchased and in effective use	N
M	Replace, expand, or improve water and sewer lines	US ACE	2015	2016+	\$250,000	1, 2, 3, 4	Water and sewer lines are adequate where required	Y
M	Adopt a thorough emergency operations plan (EOP) addressing hazards and mass casualties	US ACE assisted by EMA	2016	2016+	\$2,500	1, 2, 3, 4	Plan in place and college is compliant	Y
L	Community drills	All responders	2016	2016+	\$5,000/yr	1, 2, 3, 4, 6, 7	Improved drills and involvement	Y
H	Update and enforce zoning ordinances	Zoning admin	2016	2016+	\$5,000	1, 2	Mitigation is considered in zoning code	Y
H	Improve roads (resurface, pave, widen, etc.)	Secondary Roads	2016	2016+	\$250,000+	1, 2, 3, 6	Better streets and roads	Y
H	Purchase new, modernize, and/or harden existing mobile and personal communications equip	EMA, Sheriff, Engineer, Cons.	2016	2016+	\$50,000	1, 2, 3, 4, 5, 7	All key personnel and organizations have interoperable communications meeting standards	Y
H	Install computers and/or GPS units in emergency/County vehicles	EMA, Sheriff, Engineer, Cons.	2016	2016+	\$500 ea.	1, 2, 5, 7	GPS units and computers are installed in vehicles	Y
H	Purchase/install backup fixed power generators	BOS, Dept heads	2016	2016+	\$25,000 ea.	1, 2, 3, 4, 5, 7	Installed fixed generators at more critical assets	N
H	Backup jurisdictional files and records - store in alternative locations	Dept heads	2016	2016+	\$1,000	1, 2	Files in second location in vaults and electronically	N
H	Purchase standby pumps and generators	EMA, BOS	2016	2016+	\$5,000 ea.	1, 2, 5, 7	Purchased and in effective use	Y
MH	Ask FEMA to complete digital FIRM maps or to update maps	Flood Plain Manager, BOS	2016	2016+	\$10,000	1, 2, 4	Digital FIRM maps are provided countywide; put on local GIS	N
M	Tree planting programs on public property	Conservation Board	2016	2016+	\$5,000/yr	1, 2, 6, 7	Trees are planted at key locations	N
M	Assure jurisdictional plans are in place and current	EMA Commission	2016	2016+	\$1,000/yr	1, 2	Greater support for hazard mitigation and annual reviews of plan	N
M	Create a jurisdictional continuity of operations and succession plan	EMA, BOS, Sheriff	2016	2016+	\$1,000	1, 2	Plan is in place and reviewed regularly; new staff and elected officials are aware	N
M	Harden public buildings	EMA, Sheriff, BOS	2016	2016+	\$100,000+	1, 2, 4, 5, 6	Buildings better able withstand hazards	N
L	Install wind breaks	Conservation Board	2016	2016+	\$10,000	1, 2, 7	Windbreaks installed along west	N

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							of school property	
L	Subdivision ordinances to address hazard interface areas	Engineer, P&Z	2016	2016+	\$5,000	1, 2	Updated to include mitigation measures	Y
L	Enforce burning restrictions	BOS, Attorney	2016	2016+	\$1,000/ur	1, 2	Burning restrictions enforced	Y
L	Improve public awareness of hazard risks - dispense print materials	EMA Commission	2016	2016+	\$1,000	1, 2, 3, 4, 7	Information available at key locations in county	Y
L	Demolish abandoned properties	Zoning Admin.	2016	2016+	\$15,000	1, 2, 6, 7	Demolition effort in place and actively funded	N
L	Train first responders, EMTs, firefighters, and emergency disaster responders	EMA Commission	2016	2016+	\$10,000/yr	1, 2, 3, 4	Training updated and more people trained and certified	Y
L	Full review of policy, procedure, and codes	All County Departments	2016	2016+	\$2,500	1, 2	Mitigation measures and concepts included in local policies, procedures, and codes	N
L	Formally designate and stock buildings as community shelters	EMA Commission	2016	2016+	\$20,000	1, 2, 3, 4, 5, 7	Work with Red Cross and EMA, etc., to have stock shelter and policies	Y
L	Increase bridge capacity	Secondary Roads	2016	2016+	\$500,000	1, 2, 3, 6	Improved bridge capacity	Y
L	Undertake stream modifications	Conservation Board	2016	2016+	\$100,000+	1, 2, 3, 4, 7	Stream modifications planned strategically	Y
L	Promote the construction of private in-home tornado safe rooms	EMA Commission	2016	2016+	\$500	1, 2	In-home safe room options are promoted	N
L	Develop/implement watershed studies and plans for possible flood prone areas	Floodplain Manager	2016	2016+	\$20,000	1, 2, 3, 5	Studies in place in more areas to slow flow of rainwater	Y

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.3: City of Bussey Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Improve public awareness of hazard risks - dispense print materials	City council, EMA, Fire, EMS, Police	2012	2014	\$1,000	1, 2, 3, 4, 7	Information available at key locations in city	Y
H	Purchase standby pumps and generators	City council, Fire, EMS	2012	2014	\$2,500	1, 2, 3, 4	More volunteers available for emergency services	Y
H	Promote NOAA weather radio - citizen purchase (rebate initiative)	City council, EMA	2012	2014	\$10,000 ea.	1, 2, 7	Many people have and use NOAA weather radio	Y
H	Install warning sirens	City council	2012	2014	\$10,000 ea.	1, 2, 3, 4, 5, 7	Sirens cover key parts of city	N
M	Develop annual leadership awareness campaign about the plan	City council, EMA	2012	2014	\$250	1, 2	Local leaders are fully aware of plan and its relevance	N
L	Maintain active participation in the NFIP program	City council, EMA, floodplain manager	2012	2016	\$1,000	1, 2, 3, 4	Ordinances enforced, compliance maintained	N

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H	Construct community safe rooms in various community assets (parks, buildings, mfd home areas, etc.)	City council	2013	2015	\$500,000	1, 2, 3, 4	Students, staff, visitors protected	N
M	Create a jurisdictional continuity of operations and succession plan	City council, EMA	2013	2015	\$1,000	1, 2	Plan is in place and reviewed regularly; new staff and elected officials are aware	N
M	Purchase/install backup fixed power generators	City council, Fire, EMS	2013	2015	\$25,000 ea.	1, 2, 3, 4, 5, 7	Installed fixed generators at more critical assets	N
M	Purchase new fire trucks and ambulances	Fire, EMS	2013	2015	\$300,000	1, 2, 4, 7	Fire truck by 2018, ambulance in 2013	Y
M	Replace, expand, or improve water and sewer lines	City council, Rural Water	2013	2015	\$250,000	1, 2, 3, 4	Water and sewer lines are adequate where required	Y
M	Increase public awareness on household hazardous materials	City council, landfill agency	2013	2015	\$10,000/yr.	1, 2, 7	Household HAZMAT education efforts expanding	Y
M	Acquire modern chemicals and equipment for firefighting	Fire	2013	2015	\$5,000	1, 2	Fire suppression needs are known; addressed	Y
M	Install new fire hydrants	City council, rural water, fire	2013	2015	\$5,000 ea.	1, 2, 3, 5, 6	Fire protection improved	N
M	Promote good landscaping practices among property owners	City council, civic clubs	2014	2016	\$1,000/yr.	1, 2, 7	More property owners implement landscaping efforts	N
M	Replace bridges and culverts	City council, county engineer, IDOT	2014	2016	\$250,000+	1, 2, 3, 6	Bridges and culverts replaced based on engineering study needs	Y
M	Integrate safe room retrofits into critical assets/facilities	City council	2014	2016	\$250,000+	1, 2, 3, 4	Buildings retrofitted to include safe room	N
M	Improve roads (resurface, pave, widen, etc.)	City council, county engineer, IDOT	2014	2016	\$250,000+	1, 2, 3, 6	Better streets and roads	Y
M	Construct storm water drainage (underground, culverts, curb and gutter, basins, buffer strips, etc.)	Public works	2014	2016	\$50,000	1, 2, 3, 4, 5	Adequate systems are built where problems are identified	N
L	Demolish abandoned properties	City council	2014	2016	\$15,000	1, 2, 6, 7	Demolition effort in place and actively funded	N
L	Establish alert systems for vulnerable populations	City council, EMS, Fire, EMA	2014	2016	\$1,000	1, 2, 7	Populations surveyed, needs addressed	Y
L	Harden public buildings	City council	2014	2016	\$100,000+	1, 2, 4, 5, 6	Buildings better able withstand hazards	N
L	GIS mapping system implementation and digital hazard maps	County GIS dept	2014	2016	\$1,000	1, 2	Local maps are on the county's system and are online	Y
L	Clear and deepen ditches on right-of-ways	Public works	2014	2016	\$5,000/yr.	1, 2, 3, 4	Ditches are cleared where problems are worst	Y
L	Promote the construction of private in-home tornado safe rooms	City council, EMA	2015	2016	\$500	1, 2	In-home safe room options are promoted	N

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.4: City of Harvey Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Acquire modern chemicals and equipment for firefighting	Fire department	2012	2013	\$25,000	1, 2, 3, 4, 5, 7	Increased safety, reduced fire losses	Y
H	Develop/implement recovery plan for power failure	Fire dept, EMS, utility company	2012	2013	\$2,500	1, 2, 7	Improved relationship with providers	N
H	Full review of policy, procedure, and codes	League of Cities, city council	2012	2014	\$10,000	1, 2, 7	Codes updated, mitigation options considered	N
H	Train first responders, EMTs, firefighters, and emergency disaster responders	Fire and EMS	2012	2106	\$10,000/yr.	1, 2, 3, 4, 6, 7	Continued effort results in excellent training efforts	Y
H	Continue work on preparations and planning for dam failure	City council, EMA, ACoE, regional partners, County	2012	2016+	\$5,000/yr.	1, 2, 3, 4, 7	Started... improved awareness, plan in place for rapid evacuation	Y
L	Maintain active participation in the NFIP program	City council, EMA, floodplain manager	2012	2016	\$1,000	1, 2, 3, 4	Ordinances enforced, compliance maintained	N
M	Develop/update/publicize community evacuation plan	City council, fire dept	2013	2014	\$2,500	1, 2	Coordinated with dam failure issues; plan in place	Y
L	Install new fire hydrants	City council	2013	2014	\$5,000 ea.	1, 2, 3, 5, 6	Fire protection improved	N
M	Community drills	City council, EMA, fire, EMS, sheriff	2013	2016	\$5,000/yr.	1, 2, 3, 4	Drills performed more regularly	Y
M	Promote NOAA weather radio - citizen purchase (rebate initiative)	Fire dept, EMA	2013	2016	\$5,000	1, 2, 4, 5, 7	More people own and use weather radio	Y
M	Develop/implement an extreme heat event medical response plan	Fire, EMS, EMA	2014	2015	\$1,000	1, 2, 4, 5, 7	Equipment acquired, plans in place	Y
M	Purchase snow plows, trucks, and sanders	City council	2014	2016	\$50,000	1, 5, 6, 7	Equipment purchased	Y
M	Construct community safe rooms in various community assets (parks, buildings, mfd home areas, etc.)	City council	2014	2016+	\$250,000+	1, 2, 3, 4	Safe rooms constructed and promoted, used when needed	N
L	Improve roads (resurface, pave, widen, etc.)	City council	2015	2016	\$100,000	1, 2, 3, 5, 6, 7	Roads more reliable and useful	Y
L	Install water impervious manhole covers	City council	2015	2016	\$10,000 ea.	1, 2, 3, 5, 6	Flash flooding is reduced	N
L	Adopt building codes to address various natural hazards	City council	2015	2016	\$5,000	1, 2	Building codes are modern and in force	N
L	Adopt manufactured home development storm shelter ordinances	City council	2015	2016	\$5,000	1, 2	Protections for people in mfd homes are used	N
L	Adopt tree trimming ordinance	City council	2015	2016	\$2,500	1, 2	Trees and brush maintained in traffic and access areas	N
L	Develop electronic directory of local and other resources	City council	2015	2016	\$1,000	1, 2	Actively maintained directory is well promoted	Y
L	Develop/maintain security at	City council	2015	2016	\$10,000+	1, 2, 5, 6, 7	Less property	Y

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	applicable assets (surveillance cameras, lighting)						damage and loss	
L	Purchase/install backup fixed power generators	City council	2015	2016	\$25,000	1, 2, 3, 4, 5	Power generators in use during/after disasters	Y
L	Redundant systems and looping (water, sewer, electric, gas)	City council	2015	2016+	\$100,000+	1, 2, 3, 4, 5, 6, 7	Secondary feeds protect from hazard-related outages	Y

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.5: City of Knoxville Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Full review of policy, procedure, and codes	City council, admin staff, dept heads	2012	2014	\$10,000	1, 2, 7	Codes updated, mitigation options considered	N
H	Install GPS units in emergency/City vehicles	City hall, fire, police, EMS, public works	2012	2014	\$500 ea.	1, 2, 5, 7	GPS units and computers are installed in vehicles	Y
H	Purchase SCBAs	Fire and EMS	2012	2014	\$5,000 ea.	1, 2, 3, 4	SCBA in place for all personnel, trained in use	Y
H	Emergency response guidebooks in key emergency and City vehicles	City hall, fire, police, EMS, public works	2012	2014	\$1,000	1, 3, 4	All buildings and buses contain	N
H	Adopt building codes to address various natural hazards	City council, admin, P&Z commission	2012	2014	\$5,000	1, 2	Building codes are modern and in force	N
M	Improve public awareness of hazard risks - dispense print materials	City council, admin, fire, EMS, police, EMA	2012	2016+	\$1,000	1, 2, 3, 4, 7	Information available at key locations in city	Y
L	Community drills	Fire, EMS, police, EMA, Knoxville Hosp.	2012	2016+	\$5,000+	1, 2, 3, 4	New drills implemented; more people involved	Y
L	Develop annual leadership awareness campaign about the plan	City council, admin, EMA	2012	2016+	\$1,000	1, 2	Prepare plan evaluations; update project list; prepare plan 5-yr update	N
L	Remain active in the NFIP program, continue to enforce flood ordinances	City council, public works, admin, EMA	2012	2016+	\$1,000	1, 2, 3, 4	Ordinances enforced, compliance maintained	N
H	Install new fire hydrants	City Water Works, Fire	2013	2015	\$5,000 ea.	1, 2, 3, 5, 6	Fire protection improved	N
H	Purchase road closure barricades	City council, public works	2013	2015	\$2,000	1, 2, 3	City has enough road closure barricades for likely incidents	N
M	GIS mapping system implementation and digital hazard maps	City council, admin, County GIS	2013	2015	\$1,000	1, 2	Local maps are on the county's system and are online	Y
M	Purchase new fire trucks and ambulances	City council, Fire, EMS	2013	2015	\$300,000	1, 2, 4, 7	Upgrades as needed	Y
M	Purchase snow trucks, plows, and sanders	City council, public works	2013	2015	\$100,000	1, 2, 5	Snow removal equipment	Y

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							purchased and used	
M	Purchase standby pumps and generators	City council, dept heads, emergency svcs	2013	2015	\$5,000 ea.	1, 2, 5, 7	Purchased and in effective use	Y
M	Purchase/install backup fixed power generators	City council, Red Cross, shelter owners	2013	2015	\$50,000	1, 2, 3, 4, 5	Fixed generator at hospital for extended power outages	Y
M	Adopt a thorough emergency operations plan (EOP) addressing hazards and mass casualties	City council, admin, EMA	2013	2015	\$2,500	1, 2, 3, 4	Plan in place and district is compliant	Y
M	Promote NOAA weather radio - citizen purchase (rebate initiative)	City council, admin, EMA	2013	2015	\$10,000 ea.	1, 2, 7	Many people have and use NOAA weather radio	Y
L	Construct community safe rooms in various community assets (parks, buildings, mfd home areas, etc.)	City council, admin, dept heads	2014	2016+	\$500,000	1, 2, 3, 4	Students, staff, visitors protected	N
M	Harden public buildings	City council, admin	2015	2016+	\$100,000+	1, 2, 4, 5, 6	Buildings better able withstand hazards	N
L	Promote good landscaping practices among property owners	City council, news media	2015	2016	\$1,000/yr.	1, 2, 7	More property owners implement landscaping efforts	N
L	Map past chemical contamination sites	City council, admin, IDNR, EMA	2015	2016	\$5,000	1, 2, 3	Sites mapped, data shared with IDNR	N
L	Restricted access procedures	City council, admin	2015	2016	\$2,500	1, 2	Restricted access procedures are in effect	Y
L	Construct storage facilities for pesticides, insecticides, chemicals	City council regulate private sector, fire	2015	2016	\$100,000	1, 2, 6, 7	HAZMAT chemicals are protected from weather, hazards	N
L	Develop/maintain security at applicable assets (surveillance cameras, lighting)	City council, admin, police	2015	2016	\$10,000+	1, 2, 5, 6, 7	Less property damage and loss	Y
L	Install alternative or sustainable storm water control options such as buffer strips, bioswales, and rain gardens	City council, conservation groups, public works	2015	2016	\$100,000+	1, 2, 3, 5, 6, 7	Sustainable infrastructure helps control storm water	N
L	Integrate safe room retrofits into critical assets/facilities	City council, admin, dept heads	2015	2016+	\$500,000+	1, 2, 3, 4, 7	Safe rooms added to building remodels	N

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.6: City of Melcher-Dallas Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Assure jurisdictional plans are in place and current	City council, clerk	2012	2014+	\$10,000	1, 2	Other plans, such as comprehensive plan, are in place and consider mitigation	Y
H	Develop electronic directory of local and other resources	City council, EMA	2012	2014	\$1,000	1, 2	Actively maintained directory is well promoted	Y
H	Train first responders, EMTs,	Fire, EMS,	2012	2014	\$10,000/	1, 2, 3, 4	Training updated	Y

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	firefighters, and emergency disaster responders	public health, police			yr		and more people trained and certified	
H	Enforce burning restrictions	City council, fire	2012	2014	\$1,000/yr	1, 2	Burning restrictions enforced	Y
H	Initial community briefings immediately after events	City council, EMA	2012	2014	\$250	1, 2	Person designated and trained	Y
H	Purchase new, modernize, and/or harden existing mobile and personal communications equip	City council, fire, police, public works	2012	2014	\$50,000	1, 2, 3, 4, 5, 7	All key personnel and organizations have interoperable communications meeting standards	Y
M	Improve public awareness of hazard risks - dispense print materials	City council, EMA	2012	2014	\$1,000	1, 2, 3, 4, 7	Information available at key locations in city	Y
L	Develop annual leadership awareness campaign about the plan	City council, EMA	2012	2014	\$1,000/yr	1, 2	Greater support for hazard mitigation and annual reviews of plan	N
L	Inspect water lines	City council, public works, area water	2012	2016+	\$2,500/yr	1, 2, 5, 7	Inspections regular and comprehensive	Y
L	Install and/or update antivirus software	City council, clerk	2012	2014+	\$500	1, 2, 7	Software in place, regularly updated	
H	Adopt building codes to address various natural hazards	City council, clerk	2013	2015	\$5,000	1, 2	Building codes are modern and in force	N
H	Conduct study on possible illegal use of sump pumps	City council, public works	2013	2015	\$10,000	1, 2, 7	Study completed, recommendations acted upon	N
H	Remove unused chemical containers	City council, public works	2013	2015	\$10,000+	1, 2, 3, 6, 7	Toxic hazards removed or exposure reduced	N
H	Demolish abandoned properties	City council, clerk	2013	2015	\$15,000	1, 2, 6, 7	Demolition effort in place and actively funded	N
M	Adopt tree trimming ordinance	City council	2013	2015	\$2,500	1, 2	Trees and brush maintained in traffic and access areas	N
M	Ask FEMA to complete digital FIRM maps or to update maps	City council, EMA	2013	2015	\$10,000	1, 2, 4	Digital FIRM maps are provided specific to city; put on local GIS	N
M	Acquire modern chemicals and equipment for firefighting	City council, fire	2013	2015	\$5,000	1, 2	Fire suppression needs are known; addressed	Y
M	Construct storm water drainage (underground, culverts, curb and gutter, basins, buffer strips, etc.)	City council, public works	2013	2015	\$50,000	1, 2, 3, 4, 5	Adequate systems are built where problems are identified	N
M	Purchase standby pumps and generators	City council, fire, public works	2013	2015	\$2,500	1, 2, 3, 4	More volunteers available for emergency services	Y
M	Full review of policy, procedure, and codes	City council, clerk	2013	2015	\$2,500	1, 2	Full review of local codes and polices complete	N
M	Promote NOAA weather radio - citizen purchase (rebate initiative)	City council, EMA	2014	2016	\$10,000 ea.	1, 2, 7	Many people have and use NOAA weather radio	Y
M	Develop local debris disposal sites	City council, public works	2014	2016	\$50,000+	1, 2, 3	Debris site designated and opened	Y
M	Conduct engineering studies on water and sewer plants	City council, public works	2014	2016	\$10,000	1, 2, 6	Engineering studies identify weak parts of systems and possible mitigation measures	Y
L	Install computers and/or GPS	City council,	2015	2016	\$500 ea.	1, 2, 5, 7	GPS units and	Y

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	units in emergency/City vehicles	fire/EMS, public works, police					computers are installed in vehicles	
L	Reverse E911 program	City council, EMA	2015	2016+	\$7,500	1, 2, 7	Implemented an active reverse E911 program	Y
L	Establish alert systems for vulnerable populations	City council, fire, utility providers, hospital, police	2015	2016	\$5,000+	1, 2, 7	Populations surveyed, needs addressed	Y
L	Construct community safe rooms in various community assets (parks, buildings, mfd home areas, etc.)	2015-16	2015	2016+	\$250,000	1, 2, 3, 4	Community tornado safe rooms are constructed in or near critical assets	N
L	Create a jurisdictional continuity of operations and succession plan	2015-16	2015	2016	\$1,000	1, 2	Plan in place	N

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.7: City of Pella Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Annual storm spotter training	Police, Fire	2013	2014	\$250/yr	1, 2, 3, 4	More certified spotters	Y
H	Install computers and GPS units in emergency vehicles	Police, Fire	2013	2014	\$5,000	1, 2, 4, 5	Equipment in place and used	N
H	Conduct study on possible illegal use of sump pumps	Public works	2013	2014	\$10,000	1, 2, 7	Study completed, recommendations acted upon	N
H	Purchase vehicle extrication equipment	Pella community ambulance	2013	2014	\$15,000	1, 2, 4, 5, 7	Equipment in place and training updated	Y
H	Train first responders, EMTs, firefighters, and emergency disaster responders	Fire, ambulance	2013	2014	\$10,000/yr	1, 2, 3, 4	Training updated and more people trained and certified	Y
H	Install water impervious manhole covers	Public works	2013	2014	\$25,000	1, 2, 3, 6	Water and sewer main protected	N
H	Purchase SCBA—self-contained breathing apparatus	Fire dept.	2013	2014	\$5,000 ea.	1, 2, 3, 4	SCBA in place for all personnel, trained in use	Y
H	Acquire modern chemicals and equipment for firefighting	Fire dept.	2013	2014	\$5,000	1, 2, 4	Equipment in place and training updated	Y
H	Bury utility lines in existing and new development	Electric dept.	2013	2015	\$1 million	1, 2, 4, 7	Priorities established and lines buried over time	Y
H	Retrofit/harden existing overhead utility lines	Electric dept.	2013	2015	\$1 million	1, 2, 4, 7	Priorities established and lines hardened over time	Y
H	Replace, expand, or improve water and sewer lines	Public works	2013	2016+	\$1 million	1, 2, 3, 6	System improved and less vulnerable	Y
MH	Purchase new fire trucks/ambulances	Fire/Pella ambulance	2013	2018	\$300,000	1, 2, 4, 7	Fire truck by 2018, ambulance in 2013	Y
H	Enforce multi-family housing extinguisher laws	Planning and zoning	2014	2014	\$10,000	1, 2	Code and education in place, enforced	Y
H	Remove underground fuel storage tanks	Public works	2014	2015	\$10,000 ea.	1, 2, 3, 7	Leaking and abandoned tanks removed or capped	N
H	Construct backup wells for	Public works	2014	2015	\$1 million	1, 2, 3, 6, 7	Water sources are	Y

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	water systems						more reliable	
MH	Develop/maintain security at applicable assets (surveillance cameras, lighting)	Police	2014	2015	\$50,000	1, 2, 4, 6, 7	Key public assets are risk areas are monitored	N
M	Purchase new, modernize, and/or harden existing mobile and personal first response communications equip and systems	Police	2014	2015	\$50,000	1, 2, 3, 4, 5, 7	All key personnel and organizations have interoperable communications meeting standards	Y
M	Hire or designate public information officer	City admin	2015	2015	\$5,000	1, 2	Public information officer is designated, offers good service	Y
H	Install backflow devises	Public works	2015	2016	\$5,000 ea.	1, 2, 5, 6	Priority problem areas protected to prevent sewer backup issues	N
H	Undertake stream modifications	Public works	2016	2016+	\$100,000+	1, 2, 3, 4, 7	Stream modifications planned strategically	Y
M	Integrate safe room retrofits into critical assets/facilities	Police	2016	2016+	\$500,000+	1, 2, 3, 4, 7	Safe rooms added to building remodels	N
M	Construct community safe rooms in various community assets (parks, buildings, mfd home areas, etc.)	Public works, parks dept.	2016	2016+			New tornado safe rooms built in key locations	N
M	New or upgrade fire stations	Fire dept	2016	2020	\$1 million	1, 2, 5, 6, 7	Fire station is modern and sturdy	Y

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Pella also listed two other projects that would be priorities for after the five-year period of this plan and that should be considered in the next plan update:

- Construct storm water drainage systems (underground, culverts, curb/gutter, basins, buffer strips) – high priority for 2017
- Road bypass construction projects – high priority for 2020

Table 10.8: City of Pleasantville Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
L	Promote NOAA weather radio - citizen purchase (rebate initiative)	City council, EMA	2013	2014	\$50,000	1, 2, 3, 4, 5, 7	More households have weather radios in active use; incentives offered	N
H	New or update ambulance department building	Pella Comm. Ambulance	2013	2014	\$2 M	1, 2, 7	Ambulance building is modern/sturdy	Y
L	Ask FEMA to complete digital FIRM maps or to update maps	City council, EMA, FEMA	2013	2014	\$10,000	1, 2, 4	Digital FIRM maps are provided specific to city; put on local GIS	N
H	Full review of policy, procedure, and codes	City council, EMA	2014	2015	\$2.500	1, 2	Mitigation measures & concepts included in local policies, procedures, & codes	N
H	Construct community safe rooms in various community assets (parks, buildings, manufactured home areas, etc.)	City council	2014	2017	\$250,000	1, 2, 3, 4, 7	Citizens and visitors are protected from tornadoes; use is strong	N
H	Construct storm water drainage (underground, culverts, curb and	Public works	2014	2017	\$100,000	1, 2, 3, 4, 7	Infrastructure improved	N

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	gutter, basins, buffer strips, etc.)							
H	Conduct study on possible illegal use of sump pumps	Public works	2014	2016	\$10,000	1, 2	Issue investigated, public educated, enforcement efforts implemented	N
M	Develop/update/publicize community evacuation plan	Public works, police	2014	2015	\$5,000	1, 2	Evacuation plan implemented; all parties aware	Y
M	Improve public awareness of hazard risks - dispense print materials	City council	2014	2015	\$1,000	1, 2, 3, 4, 7	Information available at key locations in city	Y
M	Develop/maintain security at applicable assets (surveillance cameras, lighting)	Police	2014	2015	\$20,000	1, 2, 3, 4	Cameras/surveillance items in place strategically and monitored	N
M	Adopt a thorough emergency operations plan addressing multiple hazards, mass casualties	Police/Fire, EMA	2014	2015	\$2,500	1, 2, 3, 4	EOP plan in place, considers mitigation actions from this plan	N
M	Develop volunteer base - trained and standby groups	City council, EMA	2015	2016	\$2,500	1, 2, 3, 4	More volunteers available for emergency services	Y
L	Purchase new, modernize, and/or harden existing mobile and personal communications equip	Fire, EMS, Police, EMA	2015	2016	\$10,000	1, 2, 3, 4, 5, 6	Equipment modernized and being updated	N
L	Community drills	Police, Fire, EMS, City, EMA	2015	2016	\$5,000+	1, 2, 3, 4	New drills implemented; more people involved	Y
L	Develop/implement an extreme heat event medical response plan	Police, Fire, EMS	2015	2016	\$2,500	1, 2, 3, 4, 5	Plan adopted; medical supplies procured	Y
L	Demolish abandoned properties	City council, public works	2016	2016+	\$15,000	1, 2, 6, 7	Demolition effort in place, actively funded	N
L	Develop annual leadership awareness campaign about the plan	City council, EMA	2016	2016+	\$1,000	1, 2	Prepare plan evaluations; update project list; prepare plan 5-yr update	N
L	Create a jurisdictional continuity of operations and succession plan	City council	2016	2016+	\$1,000	1, 2	Plan is in place and reviewed regularly; new staff and elected officials are aware	N
L	Assure jurisdictional plans are in place and current	City council	2016	2016+	\$10,000	1, 2	Other plans, such as comprehensive plan, are in place and consider mitigation	Y
L	Develop/implement recovery plan for power failure	City council, utility providers	2016	2016+	\$5,000	1, 2	Plans and improved contacts are in place	Y
L	Develop search and rescue team	Police and fire	2016	2016+	\$10,000	1, 2	Team in place, equipped, trained	Y
L	Redundant systems and looping (water, sewer, electric, gas)	Public works, utility providers	2017	2017+	\$1 M+	1, 2, 5, 6, 7	Redundant systems are studied and constructed	Y

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.9: City of Swan Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Establish alert programs for vulnerable populations	city council	2012	2013	\$1,000	1, 2, 7	Populations surveyed, needs addressed	Y
H	Assure jurisdictional plans are in place and current	county departments, city council	2012	2013	\$5,000	1, 2, 3, 4, 7	Local plans are reviewed and mitigation measures added as appropriate	N
H	Install warning sirens	city council	2012	2013	\$10,000 ea.	1, 2, 3, 4, 5, 7	Sirens cover key parts of city	N
H	Promote the construction of private in-home tornado safe rooms	city council	2012	2015	\$500	1, 2	In-home safe room options are promoted	N
H	Adopt manufactured home development storm shelter ordinances	city council	2012	2014	\$3,000	1, 2	Manufactured home shelter ordinances in place/enforced	N
H	Clear and deepen ditches on right-of-ways	city council	2012	2014	\$5,000/yr	1, 2, 3, 4	Ditches are cleared where problems are worst	Y
H	Construct community safe rooms in various community assets (parks, buildings, mfd home areas, etc.)	city council	2012	2015	\$250,000	1, 2, 3, 4	Residents and visitors protected	N
H	Develop/implement recovery plan for power failure	city council	2012	2014	\$2,000	1, 2, 7	Power failure plan adopted	N
H	Construct storm water drainage (underground, culverts, curb and gutter, etc.)	city council	2012	2015	\$50,000	1, 2, 3, 4, 5	Adequate systems are built where problems are identified	N
L	Maintain active participation in the NFIP program	City council, EMA, floodplain manager	2012	2016	\$1,000	1, 2, 3, 4	Ordinances enforced, compliance maintained	N
H	Purchase standby/portable pumps and generators	county departments, city council	2013	2014	\$5,000 ea.	1, 2, 5, 7	Purchased and in effective use	Y
H	Purchase/install backup fixed power generators	city council	2013	2014	\$25,000 ea.	1, 2, 3, 4, 5, 7	Installed fixed generators at more critical assets	N
H	Improve roads (resurface, pave, widen, etc.)	city council	2014	2016	\$250,000+	1, 2, 3, 6	Better streets and roads	Y
H	Purchase road closure barricades	city council	2014	2015	\$2,000	1, 2, 3	City has enough road closure barricades for likely incidents	N
M	Business and residential preparedness program	city council	2012	2015	\$1,000	1, 2, 3, 4	Active program in place, citizens support	N
M	Develop/update/publicize community evacuation plan	city council	2013	2013	\$1,000	1, 2	Evacuation plan is complete; adopted	Y
M	Develop/implement an extreme heat event medical response plan	Pleasantville Fire & EMS, public health	2013	2013	\$1,000	1, 2, 3, 4, 5	Plan adopted; medical supplies procured	Y
M	Adopt a thorough EOP addressing multiple hazards and mass casualties	city council	2013	2013	\$2,500	1, 2, 3, 4	Local EOP adopted	Y
M	Develop electronic directory of local and other resources	city council	2014	2015	\$500	1, 2, 7	In place and updated regularly	Y
M	Purchase snow plows, trucks, and sanders	city council	2015	2016	\$100,000	1, 2, 5	Snow removal equipment purchased	Y

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							and used	
M	Increase public awareness on household hazardous materials	city council, landfill	2016	2016+	\$10,000/yr	1, 2, 7	Household HAZMAT education efforts expanding	Y
M	Integrate safe room retrofits into critical assets/facilities	city council	2016	2016+	\$250,000+	1, 2, 3, 4	Buildings retrofitted to include safe room	N
M	Investigate and implement alternative energy sources	city council	2016	2016+	\$50,000+	1, 2, 3, 6, 7	Plan in place for "green" energy	N
M	Investigate alternative water sources for fire suppression	city council, Pleasantville Fire & EMS	2016	2016+	\$5,000	1, 2	Fire suppression needs are known; addressed	Y
M	Create a jurisdictional continuity of operations and succession plan	city council, county EMA assistance	2016	2016+	\$5,000	1, 2, 4	Continuity plan in place	N
M	Install central sewer system	city council, rural water, county environmental health	2016	2016+	\$1 M	1, 2, 3, 5, 6	Sewer system in place to prevent pollution discharges in town	Y
L	Develop volunteer base	city council, EMA, Fire/EMS	2013	2014	\$1,000	1, 2, 3, 4, 5, 7	More volunteers in place; trained to standards	Y
L	Improve public awareness of hazard risks - dispense print materials	city council	2015	2016	\$1,000	1, 2, 7	Pamphlets and unique education materials available/accessible	N
L	Establish backup communications systems or center	city council, EMA, E911 commission	2015	2016	\$250,000	1, 2, 4, 6	City needs are addressed with other agencies	Y
L	Develop local debris disposal sites	city council	2016	2016+	\$50,000+	1, 2, 3	Debris site designated and opened	Y
L	Backup jurisdictional files and records - store in alternative locations	city council	2016	2016+	\$1,000	1, 2	Files in second location in vaults and electronically	N

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.10: Clay Township Fire District Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administering party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Improve public awareness of hazard risks – dispense written and presentation instruments	Township Trustees, Fire, EMA	2012	2014	\$1,000	1, 2, 3, 4, 7	Information available at key locations in city	Y
H	Purchase stand-by portable pumps and generators	Township Trustees, Fire	2012	2014	\$5,000 ea.	1, 2, 5, 7	Purchased and in effective use	Y
H	Develop/enforce snow removal policies	Fire Dept., County Assoc	2012	2014	\$1,000	1, 2	Snow removal policies and plans in effect	N
H	Train first responders, EMTs, firefighters, and emergency disaster responders	Township fire	2012	2016	\$10,000/yr.	1, 2, 3, 4, 6, 7	Continued effort results in excellent training efforts	Y
H	Develop annual local leadership awareness campaign about the mitigation plan	Township Trustees, Fire, EMA	2012	2016	\$1,000	1, 2	Prepare plan evaluations; update project list; prepare plan 5-yr update	N
H	Formally designate and stock community post-disaster shelters (food and lodging – support of Red Cross or others)	Township Trustees, EMA, Red Cross	2013	2014	\$20,000	1, 2, 3, 4, 5, 7	Work with Red Cross and EMA, etc., to have stock shelter and policies	Y
H	Purchase new fire	Township	2013	2015	\$300,000	1, 2, 4, 7	Fire truck by 2018,	Y

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	trucks/ambulances	Trustees, Fire					ambulance in 2013	
H	Purchase SCBA—self-contained breathing apparatus	Township Trustees, Fire	2013	2015	\$5,000 ea.	1, 2, 3, 4	SCBA in place for all personnel, trained in use	Y
M	Improve roads (resurface, pave, widen, etc.)	County engineer, township	2013	2016	\$250,000 +	1, 2, 3, 6	Better streets and roads	Y
M	Install computers and GPS units in emergency vehicles	Township Trustees, Fire	2014	2016	\$500 ea.	1, 2, 5, 7	GPS units and computers are installed in vehicles	Y
M	Purchase thermal imaging system for fire department	Township Trustees, Fire	2014	2016	\$10,000	1, 2, 4	Fire equipment improved	Y
M	Purchase vehicle extrication equipment	Township Trustees, Fire	2014	2016	\$10,000+	1, 2, 4, 5	Purchased and trained to use	Y
M	Establish alert systems for vulnerable populations	EMA, EMS, Fire, medical services	2014	2016	\$1,000/yr	1, 2, 6, 7	Hospital working with residential facilities and outpatients	Y
M	Purchase/install backup fixed power generators and pumps	Township Trustees, Fire	2014	2016	\$50,000	1, 2, 3, 4, 5	Fixed generator at hospital for extended power outages	Y
M	Install/update antivirus software	Township Trustees, Fire	2014	2016	\$500	1, 2, 7	Software in place, regularly updated	
M	New or upgrade fire stations	Township Trustees, Fire	2014	2016	\$1 million	1, 2, 5, 6, 7	Fire station is modern and sturdy	Y
M	Develop/maintain hazardous materials inventories / list of critical facilities with hazardous materials	Township Fire, EMA	2014	2016	\$5,000	1, 2, 7	HAZMAT inventories are current and active	N
M	Install new fire hydrants	Township Trustees, Fire	2014	2016	\$5,000 ea.	1, 2, 3, 5, 6	Fire protection improved	N
M	Reverse E911 program	County, EMA, Trustees	2014	2016	\$7,500	1, 2, 7	Implemented an active reverse E911 program	Y
M	Acquire modern chemicals and equipment for firefighting	Township Fire, EMA	2014	2016	\$5,000	1, 2	Fire suppression needs are known; addressed	Y
M	Enforce burning restrictions	County, Trustees	2014	2016	\$1,000/ur	1, 2	Burning restrictions enforced	Y
M	Encourage citizen purchase/use of smoke detectors	Township fire	2014	2016	\$1,000/yr	1, 2, 5, 7	Effective education program has ongoing smoke detector incentive	Y
L	Create continuity of operations & succession plan for jurisdiction	Township Trustees	2015	2016	\$1,000	1, 2	Plan in place	N
L	Install warning sirens	Township Trustees, Fire	2015	2016	\$10,000 ea.	1, 2, 3, 4, 5, 7	Sirens cover key parts of rural county	N
L	Designate/enforce area HAZMAT transportation routes	County, Trustees	2015	2016	\$1,000	1, 2	Policy, signage, and enforcement in place	Y

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.11: Indiana Township Fire District Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Adopt a thorough emergency operations plan (EOP) including mass casualties plan	Fire Dept., County Assoc	2012	2014	\$2,500	1, 2, 3, 4	Plan in place and district is compliant	Y
H	Develop electronic directory of	Fire Dept.,	2014	2016	\$500/yr.	1, 2	District has good	Y

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	local and other resources	County Assoc					resource database, is available for public viewing	
H	Community drills	Fire Dept.	2014	2016	\$5,000/yr.	1, 2, 3, 4, 6	Community drills undertaken with greater involvement	Y
H	Full review of policy, procedure, and codes to include mitigation	Fire Dept., County Assoc	2014	2016	\$2,500	1, 2	Full review of local codes and polices complete	N
H	Develop/maintain hazardous materials inventories / list of critical facilities with hazardous materials	Fire Dept.	2014	2016	\$5,000	1, 2, 7	HAZMAT inventories are current and active	N
H	Create continuity of operations & succession plan for jurisdiction	Fire Dept.	2014	2016	\$5,000	1, 2, 4	Continuity plan in place	N
H	Establish alert systems for vulnerable populations	Fire Dept., County Assoc	2014	2016	\$5,000+	1, 2, 7	Populations surveyed, needs addressed	Y
H	Develop search and rescue teams	Fire Dept., County Assoc	2014	2016	\$10,000	1, 2, 5, 7	Team created, people trained, equipped	Y
H	Improve public awareness of hazard risks – dispense written and presentation instruments	Fire Dept., County Assoc	2014	2016	\$1,000	1, 2, 7	Pamphlets and unique education materials available/accessible	N
H	Train first responders, EMTs, firefighters, and emergency disaster responders	Fire Dept., County Assoc	2014	2016	\$5,000	1, 2, 3, 4, 6, 7	More training for responders	Y
H	Restricted access procedures	Fire Dept., County Assoc	2014	2016	\$2,500	1, 2	Restricted access procedures are in effect	Y
H	Develop/update/publicize jurisdictional evacuation plans	Fire Dept., County Assoc	2014	2016	\$2,000	1, 2	Evacuation plan is complete; adopted	Y
H	Reverse E911 program	Fire Dept., County Assoc	2014	2016	\$7,500	1, 2, 7	Implemented an active reverse E911 program	Y
H	Purchase new, modernize, and/or harden existing mobile and personal first response communications	Fire Dept.	2014	2016	\$25,000+	1, 2, 3, 4, 5, 6, 7	Upgraded interoperable communications	Y
H	Purchase new fire trucks/ambulances	Fire Dept.	2014	2016	\$250,000	1, 2, 4, 5	Fire trucks and ambulances purchased	Y
H	Develop/implement a thorough recovery plan for power failure	Fire Dept., County Assoc	2014	2016	\$5,000	1, 2, 7	Power failure plan adopted	N
H	Develop/implement an extreme heat event medical response plan	Fire Dept., County Assoc	2014	2016	\$5,000	1, 2, 7	Heat recovery plan adopted; medical supplies procured	N
H	Purchase stand-by portable pumps and generators	Fire Dept.	2016	2016+	\$5,000 ea.	1, 2, 5, 7	Portable pumps and generators purchased	Y
H	Install warning sirens	FD/EMA	2016	2016+	\$10,000 ea.	1, 2, 3, 4, 5, 7	Sirens cover key parts of rural county	N
H	Acquire modern chemicals and equipment for firefighting	Fire Dept.	2016	2016+	\$5,000	1, 2	Fire suppression needs are known; addressed	Y
H	Purchase/install backup fixed power generators and pumps	Fire Dept.	2016	2016+	\$50,000 ea.	1, 2, 3, 4, 5, 7	Installed fixed generators at more critical assets	N
H	Construct community safe rooms in parks, campgrounds, mobile home parks, other assets	FD/EMA	2016	2016+	\$250,000	1, 2, 3, 4	Community tornado safe rooms are constructed in or near critical assets	N
H	Purchase thermal imaging system for fire department	Fire Dept.	2016	2016+	\$10,000	1, 2, 4	Fire equipment improved	Y
H	Purchase SCBA—self-contained breathing apparatus	Fire Dept.	2016	2016+	\$2,500 ea.	1, 2, 4, 5	SCBAs purchased	Y
H	Purchase vehicle extrication equipment	Fire Dept.	2016	2016+	\$10,000+	1, 2, 4, 5	Purchased and trained to use	Y
H	Establish backup communications center or	Fire Dept., County Assoc	2016	2016+	\$250,000	1, 2, 4, 6	Modern communications	Y

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	facilities						center in use	
H	Replace, expand, or improve water and sewer lines	County	2016	2016+	\$250,000	1, 2, 3, 4	Water and sewer lines are adequate where required	Y
M	Encourage citizen purchase/use of smoke detectors	Emergency Management/ Radio	2014	2016	\$1,000/yr.	1, 2, 5, 7	Effective education program has ongoing smoke detector incentive	Y
M	Increase bridge capacity	County	2016	2016+	\$500,000	1, 2, 3, 6	Improved bridge capacity	Y
L	Promote NOAA weather radio - citizen purchase (rebate incentive)	EMA, Radio	2014	2016	\$10,000 ea.	1, 2, 7	Many people have and use NOAA weather radio	Y
L	Map past chemical contamination sites	Fire Dept., County Assoc	2014	2016	\$5,000	1, 2, 3	Sites mapped, data shared with IDNR	N
L	Enforce burning restrictions	Marion Co. Sherriff's Office	2014	2016	\$1,000/ur	1, 2	Burning restrictions enforced	Y
L	Develop annual local leadership awareness campaign about the mitigation plan	Fire Dept., County Assoc	2014	2016	\$250	1, 2	Local leaders are fully aware of plan and its relevance	N
L	Establish HAZMAT decontamination sites	FD, EMA	2016	2016+	\$25,000	1, 2, 6	Decon sites installed at fire station or response trailer	Y
L	Install computers and GPS units in emergency vehicles	Fire Dept.	2016	2016+	\$500 ea.	1, 2, 5, 7	GPS units and computers are installed in vehicles	Y
L	Special needs/oxygen user registration program	FD, EMA, utility providers	2016	2016+	\$500	1, 2, 7	Special needs program in place and used effectively by responders	Y
L	Develop/enforce snow removal policies	Fire Dept., County Assoc	2016	2016+	\$1,000	1, 2	Snow removal policies and plans in effect	N

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.12: Central College Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	College adopt a thorough emergency operations plan (EOP) addressing hazards and mass casualties	Campus-wide Emergency Mgt. Team	2012	2013	\$2,500	1, 2, 3, 4	Plan in place and college is compliant	Y
H	Tree planting programs on campus	Facilities Planning & Management	2012	2016+	\$5,000/yr	1, 2, 6, 7	Trees are planted at key locations	N
H	Develop annual leadership awareness campaign about the plan	Various	2013	2014	\$1,000	1, 2	Prepare plan evaluations; update project list; prepare plan 5-yr update	N
H	Develop/update/publicize campus evacuation plan	Security	2013	2014	\$2,000	1, 2	Evacuation plan is complete; adopted	Y
H	Review/update HAZMAT emergency plan	Security	2013	2014	\$2,000	1, 2, 6	Mitigation plan for specific facilities in place	N
H	Adopt/promote terrorism response plan	Security	2013	2014	\$5,000	1, 2, 3, 4	Terrorism plan is adopted, practiced	Y
H	Emergency response guidebooks	Security	2013	2014	\$1,000	1, 3, 4	All buildings and	N

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	in key campus assets and vehicles						buses contain	
H	Make all campus facilities handicap accessible	As needed	2013	2014	\$100,000+	1, 2, 5, 6, 7	Facilities are more accessible	N
M	Purchase new, modernize, and/or harden existing mobile and personal responder communications	Various	2014	2015	\$50,000	1, 2, 3, 4, 5, 7	All key personnel and organizations have interoperable communications meeting standards	Y
M	Develop soil erosion stabilization projects	Facilities Planning & Management	2014	2016+	\$25,000	1, 2, 3, 5, 6, 7	Soil erosion prevented by landscaping projects	N
M	Full review of policy, procedure, and codes	Various	2014	2015	\$10,000	1, 2, 7	Codes updated, mitigation options considered	N
M	Full sprinkler system	Facilities Planning & Management	2015	2016+	\$1,000	1, 2, 5, 6	Meets and exceeds fire code	N
M	Harden campus buildings	Facilities Planning & Management	2015	2016+	\$100,000+	1, 2, 4, 5, 6	Buildings better able withstand hazards	N
M	Formally designate and stock college facilities as community shelters	Various	2015	2016+	\$20,000	1, 2, 3, 4, 5, 7	Work with Red Cross and EMA, etc., to have stock shelter and policies	Y
M	Develop/maintain security on campus (surveillance cameras, lighting, etc.)	Various	2015	2016+	\$10,000+	1, 2, 5, 6, 7	Less property damage and loss	Y
M	Maintain emergency operation center with 24-hour capacity	Various; Pella, EMA	2015	2016+	\$100,000	1, 2, 3, 4	Integrated plan with the EMA, Pella	Y
L	Construct public safe rooms on campus	Facilities Planning & Management	2016	2016+	\$500,000	1, 2, 3, 4	Students, staff, visitors protected	N
L	Purchase stand-by portable pumps and generators	Facilities Planning & Management	2016	2016+	\$10,000	1, 3, 4, 5, 6, 7	Pumps and generators purchased and used	Y
L	Pave existing streets	Facilities Planning & Management	2016	2016+	\$250,000+	1, 2, 3, 6	Better streets and roads	Y
L	Install backflow devices	Facilities Planning & Management	2016	2016+	\$5,000 ea.	1, 2, 5, 6	Priority problem areas protected to prevent sewer backup issues	N
L	Integrate safe room retrofits into critical assets/facilities	Facilities Planning & Management	2016	2016+	\$250,000	1, 2, 3, 4	Strengthened building; tornado protection of life	N
L	Lightning protection of tall buildings and towers	Facilities Planning & Management	2016	2016+	\$100,000	1, 2, 3, 4, 5	Installation of improvements to protect from damage	N
L	Promote and provide safe room design education for builders and developers	Facilities Planning & Management	2016	2016+	\$2,500	1, 2, 3, 4	FEMA 361 standards are promoted	Y
L	Investigate and implement alternative energy sources	Will add as financing allows	2016	2016+	\$50,000+	1, 2, 3, 6, 7	Plan in place for "green" energy	N
L	Replace, expand, or improve water and sewer lines	Facilities Planning & Man	2016	2016+	\$250,000	1, 2, 3, 4	Water and sewer lines are adequate where required	Y
L	Install alternative or sustainable storm water control options such as buffer strips, bioswales, rain gardens	Will add as financing allows	2016	2016+	\$100,000+	1, 2, 3, 5, 6, 7	Sustainable infrastructure helps control storm water	N
L	Remove asbestos from campus	Facilities Planning & Management	2016	2016+	\$100,000	1, 2, 6, 7	Asbestos removed on the campus as funds allow/need	N

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.13: Knoxville Community School District Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Emergency response guidebooks in school buildings	School board, admin staff	2012	2013	\$1,000	1, 3, 4	All buildings and buses contain	N
H	Construct public safe room in school and on school property	School board, EMA, staff	2012	2014	\$500,000	1, 2, 3, 4	Students, staff, visitors protected	N
M	Develop annual leadership awareness campaign about the plan	School board, admin staff	2013	2014	\$2,500	1, 2, 3, 4	School leaders are fully of aware of the plan and its benefits	N
M	School participate in an emergency operations plan	School board, EMA, staff	2013	2016	\$2,500	1, 2, 3, 4	School has active role in countywide EOP	Y
M	Full review of policy, procedure, and codes	School board, admin staff	2013	2014	\$25,000	1, 2, 3, 4	School has included mitigation actions and ideas into codes	N
M	Formally designate and stock school buildings as community shelters	School board, EMA, staff	2015	2015	\$20,000	1, 2, 3, 4, 5, 7	Work with Red Cross and EMA, etc., to have stock shelter and policies	Y
M	Full sprinkler system	School board, EMA, staff	2015	2016	\$1,000	1, 2, 5, 6	Meets and exceeds fire code	N
M	Integrate safe room retrofits into critical assets/facilities	School board, EMA, staff	2015	2016	\$500,000	1, 2, 3, 4	Students, staff, visitors protected	N
L	Alternate bus routes and plans for road closures	School board, admin staff	2015	2016	\$2,500	1, 2	Plan and policy in place	Y

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.14: Melcher-Dallas Community School District Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Develop annual leadership awareness campaign about the plan	School Board, EMA	2012	2013	\$1,000/yr	1, 2	Greater support for hazard mitigation and annual reviews of plan	N
H	Develop/maintain security at applicable assets (surveillance cameras, lighting)	School Board	2012	2013	\$10,000+	1, 2, 5, 6, 7	Less property damage and loss	Y
H	Tree planting programs on school property	School Board	2012	2013	\$5,000/yr	1, 2, 6, 7	Trees are planted at key locations	N
H	School participate in an emergency operations plan	School Bd., EMA	2012	2013	\$2,500	1, 2, 3, 4	Plan in place and district is compliant	Y
H	Develop/update/publicize school evacuation plan	School Bd., Trans. Dept.	2012	2013	\$2,000	1, 2	Evacuation plan is complete; adopted	Y
M	Improve public awareness of hazard risks - dispense print materials	School Board, EMA	2012	2013	\$1,000	1, 2, 3, 4, 7	Information available at key locations in city	Y
H	Purchase new, modernize, and/or	School Bd.,	2013	2014	\$50,000	1, 2, 3, 4, 5, 7	All key personnel and	Y

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	harden existing mobile and personal communications equip	Trans. Dept.						organizations have interoperable communications meeting standards	
M	Harden school buildings	School Board	2013	2014	\$100,000+	1, 2, 4, 5, 6		Buildings better able withstand hazards	N
M	Full review of policy, procedure, and codes	School Board	2013	2014	\$10,000	1, 2, 7		Codes updated, mitigation options considered	N
M	Develop volunteer base - trained and standby groups	School Bd., PTO groups	2013	2014	\$2,500	1, 2, 3, 4		More volunteers available for emergency services	Y
M	Purchase/install backup fixed power generators	School Board	2013	2014	\$25,000 ea.	1, 2, 3, 4, 5, 7		Installed fixed generators at more critical assets	N
M	Adopt/promote terrorism response plan	School Board	2013	2014	\$5,000	1, 2, 3, 4		Terrorism plan is adopted, practiced	Y
M	Purchase standby pumps and generators	School Board	2013	2014	\$10,000	1, 3, 4, 5, 6, 7		Pumps and generators purchased and used	Y
M	Integrate safe room retrofits into critical assets/facilities	School Board	2014	2016	\$250,000	1, 2, 3, 4		Strengthened building; tornado protection of life	N
L	Redundant systems and looping (water, sewer, electric, gas)	City, School, utility providers	2015	2016	\$100,000+	1, 2, 3, 4, 5, 6, 7		Secondary feeds protect from hazard-related outages	Y
L	Formally designate and stock school buildings as community shelters	School Board	2015	2016	\$20,000	1, 2, 3, 4, 5, 7		Work with Red Cross and EMA, etc., to have stock shelter and policies	Y
L	Construct public safe rooms in school and school property	School Board	2015	2016	\$250,000	1, 2, 3, 4		Community tornado safe rooms are constructed in or near critical assets	N
L	Emergency response guidebooks in key school buildings/vehicles	Trans. Dept.	2015	2016	\$1,000	1, 3, 4		All buildings and buses contain	N

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.15: Pella Community School District Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Improve public awareness of hazard risks - dispense print materials	School board, admin, EMA	2012	2014	\$1,000	1, 2, 3, 4, 7	Information available at key locations in city	Y
H	Emergency response guidebooks in key school buildings/vehicles	School board, admin, EMA	2012	2014	\$1,000	1, 3, 4	All buildings and buses contain	N
M	Place law enforcement officers in schools	School board, admin	2013	2016	\$50,000/yr	1, 6, 7	Security is maintained, response is improved	Y
M	Raise grade to eliminate backup flooding	School board, admin	2013	2016	\$100,000	1, 2, 3, 4	Flash flooding is prevented	Y
M	Back-up jurisdictional files, store in alternative locations	School board, admin	2013	2016	\$1,000	1, 2	Files in second location in vaults and electronically	N
L	Construct public safe rooms in school and school property	School board, admin	2014	2016 +	\$250,000	1, 2, 3, 4	School tornado safe rooms are constructed	N

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L	Restricted access procedures	School board, admin	2015	2016	\$2,500	1, 2	Restricted access procedures are in effect	Y
L	Create a school continuity of operations and succession plan	School board, admin, EMA	2015	2016	\$1,000	1, 2	Plan in place	N
L	Tree trimming projects for school properties	School board, admin	2015	2016	\$2,500	1, 2	Trees and brush maintained in traffic and access areas	N
L	Tree planting programs on school property	School board, admin	2015	2016	\$5,000/yr	1, 2, 6, 7	Trees are planted at key locations	N

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.16: Twin Cedars Community School District Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administering party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Assure jurisdictional plans are in place and current	School board, EMA	2012	2014	\$1,000/yr	1, 2	Greater support for hazard mitigation and annual reviews of plan	N
H	Create a school continuity of operations and succession plan	School board, EMA	2012	2014	\$1,000	1, 2	Plan is in place and reviewed regularly; new staff and elected officials are aware	N
H	Develop annual leadership awareness campaign about the plan	School board, EMA	2012	2014	\$1,000	1, 2	Prepare plan evaluations; update project list; prepare plan 5-yr update	N
H	Develop electronic directory of local and other resources	School board, EMA	2012	2014	\$500	1, 2, 7	In place and updated regularly	Y
M	Emergency response guidebooks in key school buildings and vehicles	School board, EMA	2012	2014	\$1,000	1, 3, 4	All buildings and buses contain	N
H	Implement mass casualty incident plan	School board, EMA	2012	2014	\$2,500	1, 2, 7	EOP in place and authorities know how to respond to disasters	Y
H	Improve public awareness of hazard risks - dispense print materials	School board, EMA	2012	2014	\$1,000	1, 2, 3, 4, 7	Information available at key locations in city	Y
H	NOAA weather radios in schools and on school property	School board, EMA	2012	2014	\$10,000 ea.	1, 2, 7	Many people have and use NOAA weather radio	Y
H	Purchase new, modernize, and/or harden existing mobile and personal communications equip	School board, local response agencies	2012	2014	\$50,000	1, 2, 3, 4, 5, 7	All key personnel and organizations have interoperable communications meeting standards	Y
M	Rail and highway safety education programs for students	School board, IDOT	2012	2016	\$1,000	1, 2, 6, 7	Comprehensive student education	N
M	Install warning sirens	School board, township, county	2013	2014	\$10,000 ea.	1, 2, 3, 4, 5, 7	Sirens cover key parts of city	N
M	Full review of policy, procedure, and codes	School board	2014	2015	\$10,000	1, 2, 7	Codes updated, mitigation options considered	N
M	Purchase/install backup fixed power generators	School board	2014	2015	\$25,000 ea.	1, 2, 3, 4, 5, 7	Installed fixed generators at more critical assets	N
M	Restricted access procedures	School board	2014	2015	\$2,500	1, 2	Restricted access procedures are in	Y

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							effect	
M	Construct public safe rooms in school and school property	School board	2015	2016	\$250,000	1, 2, 3, 4	Community tornado safe rooms are constructed in or near critical assets	N
L	Formally designate and stock school buildings as community shelters	School board	2015	2016	\$20,000	1, 2, 3, 4, 5, 7	Work with Red Cross and EMA, etc., to have stock shelter and policies	Y
L	Harden school buildings	School board	2015	2016	\$100,000+	1, 2, 4, 5, 6	Buildings better able withstand hazards	N
L	Install wind breaks	School board, FFA	2015	2016	\$10,000	1, 2, 7	Windbreaks installed along west of school property	N
L	Integrate safe room retrofits into critical assets/facilities	School board	2015	2016	\$250,000	1, 2, 3, 4	Strengthened building; tornado protection of life	N
L	Post an information sign or kiosk	School board	2015	2016				

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.17: Knoxville Hospital and Clinics Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administrating party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Community drills	Hospital CEO and board	2012	2016	\$5,000/yr	1, 2, 3, 4, 6, 7	Improved drills and involvement	Y
H	Bury existing utility lines in existing development - near helipad	Hospital CEO and board, utility company	2012	2014	\$50,000	1, 2, 4, 7	Safer access for air transportation near hospital	N
L	Develop annual leadership awareness campaign about the HMP	Hospital CEO and board, EMA	2012	2016	\$1,000/yr	1, 2	Greater support for hazard mitigation and annual reviews of plan	N
H	Establish HAZMAT decontamination sites	Hospital CEO and board, fire/EMS	2013	2016	\$250,000	1, 2, 3, 4, 6, 7	Ways to clean those who respond to incidents and not infect patients	Y
M	Adopt a thorough emergency operations plan (EOP) addressing hazards and mass casualties	Hospital CEO and board, EMA	2013	2014	\$2,500	1, 2, 7	EOP in place and authorities know how to respond to disasters	Y
M	Purchase standby pumps and generators	Hospital CEO and board	2013	2014	\$10,000	1, 3, 4, 5, 6, 7	Pumps and generators purchased and used	Y
M	Improve public awareness of hazard risks – dispense written and presentation instruments	Hospital CEO and board, EMA	2013	2014	\$250/yr	1, 2, 7	Information distributed to the public who uses the hospital in any way	N
M	Establish alert systems for vulnerable populations	Hospital CEO and board, fire/EMS	2013	2014	\$1,000/yr	1, 2, 6, 7	Hospital working with residential facilities and outpatients	Y
M	Special needs/oxygen user registration program	Hospital CEO and board, fire/EMS	2013	2014	\$1,000/yr	1, 2, 6, 7	Database maintained and EOP plans based on needs of such groups	Y
M	Integrate safe room retrofits	Hospital CEO	2013	2016	\$250,000	1, 2, 3, 4	Strengthened	N

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	into critical assets/facilities	and board						building; tornado protection of life	
M	Develop/enforce snow removal policies	Hospital CEO and board, cities, county	2013	2016	\$1,000	1, 2		Greater policies and efforts in place that consider responder access during emergencies	Y
M	Develop/implement an extreme heat event medical response plan	Hospital CEO and board, fire/EMS	2014	2015	\$1,000	1, 2, 6, 7		Plan in place, practiced, medical equipment on hand	Y
M	Business and residential preparedness programs	Hospital CEO and board, EMA	2014	2015	\$1,000/yr	1, 2, 3, 4		Program started with public education effort and volunteers	N
M	Establish neighbor watch programs for vulnerable populations during winter storms, extreme heat, etc.	Hospital CEO and board	2014	2015	\$5,000	1, 2, 3, 4		Volunteers in place	Y
L	Develop/implement recovery plan for power failure	Hospital CEO and board, utility company	2014	2015	\$2,500	1, 2,		Collaboration in place to ensure power is always where most needed in building/campus	N
M	Evaluate Mile-Long Bridge integrity regularly	County, EMA, Hospital, DOT, ACoE	2014	2016	\$10,000	1, 2, 3, 6		Effort is made to inform all parties of integrity of bridge; regular inspections	Y
M	Construct public safe rooms in hospital and on hospital property	Hospital CEO and board	2014	2016	\$250,000	1, 2, 3, 4		New safe room; tornado human protection	N
L	Backup jurisdictional files and records - store in alternative locations	Hospital CEO and board	2014	2016	\$1,000/yr	1, 2		Secondary locations for all files safe from hazards and attack/compromise	N
M	Create a jurisdictional continuity of operations and succession plan	Hospital CEO and board	2015	2016	\$1,000	1, 2		Plan in place	N
M	Purchase/install backup fixed power generators and pumps	Hospital CEO and board	2015	2016	\$50,000	1, 2, 3, 4, 5		Fixed generator at hospital for extended power outages	Y

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

Table 10.18: Pella Regional Health Center Mitigation Strategy for 2012-2016

Priority (High, Medium, Low)	Action	Leadership, implementing, administering party(s)	Initiating Timeframe	Completion timeframe	Estimated Cost (overall program, individual project)	Possible Funding Sources *	Evaluation Result	Will Affect Other Jurisdictions?
H	Establish alert systems for vulnerable populations	PRHC board, admin	2012	2013	\$50,000	1, 2, 6, 7	Improved alert systems between hospital and partner entities, patients	Y
H	Community drills	PRHC board, admin	2012	2016	\$5,000/yr.	1, 2, 3, 4	Hospital participates with other entities	Y

* Funding sources: 1- local, 2- in-kind, 3-State of Iowa, 4- FEMA, 5- USDA, 6- Other federal, 7- Private/Non-profit sources. See the State of Iowa Hazard Mitigation Plan for full example list of funding sources.

The above mitigation strategy is prioritized for each jurisdiction based on the following: a) a cost-benefit review, b) the STAPLE-E criteria, c) committee and citizen comments, d) comments from public officials in each jurisdiction, e) FEMA and state requirements (such as NFIP participation), and f) logistical feasibility. The final one, logistical

feasibility, needs more comment. Some projects are not feasible until other actions take place. For example, educating the public on safe room locations and how to access them is impossible until the safe rooms are built. Other projects are impossible until the political and staffing needs are in place. Finally, some projects are delayed because they simply take too long to move to fruition, such as bridge replacement. The benefit-cost review considers the feasibility of the project and whether the benefits are great for the costs. As much as possible, such considerations help form the timeline for the mitigation actions in the above tables. However, because some actions are nearly underway or are eminent, no matter the benefits versus the cost, this criterion is only one of many that helped prioritize the actions.

The above mitigation strategy is today’s best estimate of when projects should be initiated and completed, the cost for each activity, who or which organization(s) should lead the effort, and possible funding sources. Because funding is so complex and varies so much from year to year and changes after a major Presidential declaration, *Chapter 11* contains only a generic list of sources. Local organizations, such as SICO, can be consulted to assist with the funding process for a specific project. The planning team and each jurisdiction should keep in mind, however, that outside funding is limited and almost all projects and programs require some local funding and/or in-kind involvement (often called a “match”) to make the state, federal, private, or foundation support possible.

Note: for local governments, the listing “City” or “County” means the governing body and staff directly under the command of the governing body in most cases. As an example, most of the implementing activity will be done during council meetings and by the city clerk at the council’s direction. The “EMA” is the Emergency Management Agency. If any town decides to dis-incorporate in the next five years, the rural or county’s mitigation strategy, as much as is relevant to the effected jurisdiction, should prevail.

This mitigation plan is too broad and has too many projects to simply use as an annual plan. A more detailed annual mitigation strategy (akin to a capital improvement program) should be developed under local leadership for each jurisdiction at the time or just before local budgets and site development plans are considered. Further, the plan’s description of who should lead the project is a best estimate only. Local leaders must determine specifically who will lead each project and if a private consultant or nonprofit agency serving the area is necessary or if AmeriCorps or Citizen Corps volunteers are needed. The annual review and update should include notes about what was completed in the previous year and what is planned for the following year.

10.3: Limited Data

Throughout the mitigation plan, there were extensive gaps in data, such as the lack of publicly available dam failure inundation maps. In addition to specific mitigation actions in this chapter, it is important that the Marion County jurisdictions review this plan periodically as the County prepares for the next five-year update of this Plan. This process would help satisfy FEMA Region VII requirements. Missing data should be found and included by the next major update.

10.4: Goals, Objectives, and Approved Actions

This section details the mitigation measures listed under each applicable goal and objective. As shown in *Appendix G*, the mitigation actions can and do fall under several goals and objectives. The purpose is not to narrowly define each measure but it is to give the planning team a reference point as to how the mitigation actions help improve the local quality of life and to help convey the measure as accomplishing a goal in a mitigation funding application.

Table 10.19: Goals, Objectives, and Actions Matrix

Goal 1: Reduce the extent of fatalities and injuries due to hazards.
Objective 1: Improve public warning capabilities against hazards.
Action 1: Encourage citizen purchase/use of smoke detectors
Action 2: Establish alert systems for vulnerable populations
Action 3: Establish neighbor watch programs for vulnerable populations during winter storms, extreme heat, etc.
Action 4: Install warning sirens
Action 5: NOAA weather radio programs, installation in public buildings, incentives
Action 6: Reverse E911 program
Objective 2: Improve awareness of hazard risks and methods to address risks.

Action 1: Annual storm spotter training
Action 2: Develop/update/publicize community evacuation plan
Action 3: Emergency response guidebooks in key vehicles
Action 4: Improve public awareness of hazard risks - dispense print materials
Action 5: Increase public awareness on household hazardous materials
Action 6: Hire or designate public information officer
Action 7: Install hazard signs in area campgrounds, parks, and open space
Action 8: Post an information sign or kiosk
Action 9: Promote and provide safe room design education for builders and developers
Objective 3: Enhance responder communications and equipment.
Action 1: Acquire modern chemicals and equipment for firefighting
Action 2: Develop/implement an extreme heat event medical response plan
Action 3: Install computers and/or GPS units in emergency/County vehicles
Action 4: Purchase new fire trucks/ambulances
Action 5: Purchase new, modernize, and/or harden existing mobile and personal communications equip
Action 6: Purchase SCBA—self-contained breathing apparatus
Action 7: Purchase stand-by portable pumps and generators
Action 8: Purchase thermal imaging system for fire department
Action 9: Purchase vehicle extrication equipment
Objective 4: Improve structural projects that will results in protection of life and safety.
Action 1: Construct community safe rooms
Action 2: Integrate safe room retrofits into critical assets/facilities
Action 3: Make all campus facilities handicap accessible
Goal 2: Protect existing and future properties.
Objective 1: Implement construction measures to protect properties.
Action 1: Construct storm water drainage (underground, culverts, curb and gutter, basins, buffer strips, etc.)
Action 2: Develop soil erosion stabilization projects
Action 3: Full sprinkler systems
Action 4: Install backflow devises
Action 5: Install new fire hydrants
Action 6: Lightning protection of tall buildings and towers
Objective 2: Increase stringency of codes and ordinances.
Action 1: Adopt building codes to address various natural hazards
Action 2: Adopt manufactured home development storm shelter ordinances
Action 3: Adopt tree trimming ordinance
Action 4: Develop/enforce snow removal policies
Action 5: Restricted access procedure
Action 6: Subdivision ordinances to address hazard interface areas
Action 7: Update and enforce zoning ordinances
Action 8: Enforce burning restrictions
Action 9: Enforce multi-family housing extinguisher laws
Objective 3: Maximize citizen involvement in mitigation.
Action 1: Business and residential preparedness program
Action 2: Demolish abandoned properties
Action 3: Develop local debris disposal sites
Action 4: Develop search and rescue team
Action 5: Develop volunteer base - trained and standby groups
Action 6: Promote good landscaping practices among property owners
Action 7: Promote the construction of private in-home tornado safe rooms
Goal 3: Ensure the continuity of local government and other critical services during and after disasters.
Objective 1: Ensure short-term answers do not create long-term problems.
Action 1: Conduct engineering studies on water and sewer plants
Action 2: Inspect water lines
Action 3: Tree trimming projects for school properties
Objective 2: Improve public infrastructure and critical assets in hazard impact areas.
Action 1: Bury utility lines in existing and new development
Action 2: Clear and deepen ditches on right-of-ways
Action 3: Conduct study on possible illegal use of sump pumps
Action 4: Construct or repair dams
Action 5: Harden public buildings
Action 6: Improve roads (resurface, pave, widen, etc.)
Action 7: Increase bridge capacity
Action 8: Install central sewer system

Action 9: New or upgrade fire stations
Action 10: Raise grade to eliminate backup flooding
Action 11: Remove asbestos from campus
Action 12: Replace bridges and culverts
Action 13: Replace, expand, or improve water and sewer lines
Action 14: Retrofit/harden existing overhead utility lines
Objective 3: Provide back-up systems and facilities.
Action 1: Back-up jurisdictional files, store in alternative locations
Action 2: Construct backup wells for water systems
Action 3: Purchase/install backup fixed power generators
Action 4: Redundant systems and looping (water, sewer, electric, gas)
Action 5: Establish backup communications systems or center
Action 6: Investigate alternative water sources for fire suppression
Objective 4: Address mass casualty incidents better.
Action 1: Designate/enforce area HAZMAT transportation routes
Action 2: Develop/implement recovery plan for power failure
Action 3: Develop/maintain hazardous materials inventories / list of critical facilities with hazardous materials
Action 4: Evaluate Mile-Long Bridge integrity regularly
Action 5: Formally designate and stock school buildings as community shelters
Action 6: Initial community briefings immediately after events
Action 7: Implement mass casualty incident plan
Action 8: Place law enforcement officers in schools
Action 9 : Purchase road closure barricades
Action 10: Purchase snow plows, trucks, and sanders
Action 11: Special needs/oxygen user registration program
Action 12: Train first responders, EMTs, firefighters, and emergency disaster responders
Goal 4: Build & support local capacity & commitment to become continuously less vulnerable to hazards in the future.
Objective 1: Maximize utilization of the best technology.
Action 1: Construct storage facilities for pesticides, insecticides, chemicals
Action 2: Develop/maintain security at applicable assets (surveillance cameras, lighting)
Action 3: Establish HAZMAT decontamination sites
Action 4: GIS mapping system implementation and digital hazard maps
Action 5: Install alternative or sustainable storm water control options such as buffer strips, bioswales, and rain gardens
Action 6: Install flood gauges
Action 7: Install and/or update antivirus software
Action 8: Install water impervious manhole covers
Action 9: Investigate and implement alternative energy sources
Objective 2: Improve organizational efficiency and planning capabilities.
Action 1: Adopt a thorough emergency operations plan (EOP) addressing hazards and mass casualties
Action 2: Alternate bus routes and plans for road closures
Action 3: Assure jurisdictional plans are in place and current
Action 4: Community drills
Action 5: Develop annual leadership awareness campaign about the plan
Action 6: Continue work on preparations and planning for dam failure
Action 7: Create a jurisdictional continuity of operations and succession plan
Action 8: Full review of policy, procedure, and codes
Action 9: Maintain Emergency Operations Center with 24-hr capabilities
Action 10: Map past chemical contamination sites
Action 11: Review/update HAZMAT emergency plan
Objective 3: Enact & enforce regulatory measures that ensure new development does not increase threats to existing development.
Action 1: Maintain active participation in the NFIP program
Action 2: Ask FEMA to complete digital FIRM maps or to update maps
Objective 4: Maximize the use of outside sources of funding.
Action 1: Adopt/promote terrorism response plan
Action 2: Develop electronic directory of local and other resources
Action 3: Develop/implement watershed studies and plans for possible flood prone areas
Action 4: Install wind breaks
Action 5: Remove underground fuel storage tanks
Action 6: Remove unused chemical containers
Action 7: Tree planting programs on campus
Action 8: Undertake stream modifications

10.5: Mitigation Plan Summary

This Hazard Mitigation Plan is a guide for future policy planning for participating jurisdictions in the county. The Plan considers demographics trends and projections, community background information, current and future political decisions, and overall important goals and objectives for the county's jurisdictions. The goals and objectives have been developed to reflect the general consensus of the county's Hazard Mitigation Planning team, the broad range of elected officials, and the citizenry of the county. These recommendations have been developed to look five-plus years into the future with the expectation that periodic updates will occur in order to reflect changes within the county.

The success of this Plan will require the support of the emergency management commission/agency, elected officials, department heads, and volunteers (including civic groups, academia, and general citizens). Cooperation from the public and private sectors will allow implementation of the recommendations that will provide long-term benefits for the entire county and each jurisdiction. By implementing these recommendations, the jurisdictions will be furthering other civic goals also.