



4 MITIGATION STRATEGY

4 Mitigation Strategy	4.1
4.1 Goals.....	4.1
4.2 Identification and Analysis of Mitigation Actions.....	4.2
4.3 Implementation of Mitigation Actions	4.4

44 CFR Requirement §201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

This section presents the mitigation strategy updated by the Hazard Mitigation Planning Committee (HMPC) based on the risk assessment. The mitigation strategy was developed through a collaborative group process and consists of updated general goal statements to guide the jurisdictions in efforts to lessen disaster impacts as well as specific mitigation actions that can be put in place to directly reduce vulnerability to hazards and losses. The following definitions are based upon those found in the March 2013 *Local Mitigation Planning Handbook*.

- **Goals** are general guidelines that explain what the community wants to achieve with the plan. They are usually broad policy-type statements that are long-term, and they represent visions for reducing or avoiding losses from the identified hazards.
- **Mitigation Actions** are specific projects and activities that help achieve goals.

4.1 Goals

44 CFR Requirement §201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

This planning effort is an update to an existing hazard mitigation plan. Therefore, the goals from the 2011 *Poweshiek County Hazard Mitigation Plan* were reviewed to determine continued applicability. Amec Foster Wheeler facilitated a discussion session with the HMPC during their kickoff meeting to review and update the plan goals. To ensure that the goals are comprehensive and support State goals, the 2013 State Hazard Mitigation Plan goals were reviewed. Amec Foster Wheeler also presented common categories of mitigation goals from other plans. In the 2011 *Poweshiek County Hazard Mitigation Plan*, each jurisdiction selected separate goal statements. Upon analysis of these goal statements, it was determined that commonality and overlap existed. Therefore, for this plan update, the planning committee selected four comprehensive goal statements that apply to all jurisdictions as follows:

- 1) Protect the health and safety of residents and visitors.
- 2) Educate citizens about the dangers of hazards and how they can be prepared.
- 3) Minimize losses to existing and future structures, with a priority on critical facilities.
- 4) The continuity of operations will not be significantly disrupted by disasters.

4.2 Identification and Analysis of Mitigation Actions

44 CFR Requirement §201.6(c)(3)(ii): The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

The update of the mitigation actions began at the kick-off meeting. During this meeting, each jurisdiction was provided with a handout listing all of the actions they included in the previous hazard mitigation plan. **Table 4.1** provides a summary of the number of actions that each jurisdiction identified in the previous plan.

Table 4.1. Summary of Number of Actions in Previous Plan

Jurisdiction	# of Actions
Poweshiek County	31
City of Brooklyn	9
City of Deep River	5
City of Grinnell	9
City of Hartwick	1
City of Malcom	6
City of Montezuma	11
City of Searsboro	6
Grinnell-Newburg School District	6
Montezuma School District	10
Brooklyn-Guernsey-Malcom School District	8
Total	102

Source: 2011 Poweshiek County Hazard Mitigation Plan

Jurisdictional representatives were instructed to work with others in their jurisdiction to update the status of each of the previous actions. The status updates were provided to Amec Foster Wheeler between the kickoff meeting and meeting #2. Of the previous actions, 17 were completed, 38 are continuing, and 47 were deleted. The list of completed and deleted actions is provided in Appendix C with comments providing additional details, as available.

To lay a framework for the process of developing new actions, during the second meeting of the HMPC, the hazard ranking results were reviewed for the 12 natural hazards that are included in the plan update and sample risk assessment results were provided for the top 5 hazards including: 1) Tornado/Windstorm, 2) Severe Winter Storm, 3) Drought, 4) River Flood, and 5) Thunderstorm/Lightning/Hail. The discussion included results of the analysis and potential mitigation actions to address key issues. The planning committee members were instructed to review the full risk assessment update for the remaining hazards focusing on specific risks to their jurisdiction to formulate new action ideas to address potential future risk to life and property. For a comprehensive range of mitigation actions to consider, the jurisdictions were provided relevant information and sources to be used in development of new mitigation actions including:

- Further Review of Key Issues from Risk Assessment
- State Priorities for Hazard Mitigation Assistance Grants
- Actions Addressing Continued NFIP Compliance
- Public Opinion from Surveys

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- FEMA's Mitigation Ideas Booklet (link provided)

The jurisdictions were encouraged to be comprehensive and include all appropriate actions to work toward becoming more disaster resistant. However, they were encouraged to maintain a realistic approach and were reminded that the hazard mitigation plan is a "living document". As capabilities, vulnerabilities, or the nature of hazards that threaten each jurisdiction change, the mitigation actions can and should be updated to reflect those changes, including addition or deletion of actions, as appropriate.

As part of the meeting discussion, jurisdictions were instructed to consider the potential cost of each project in relation to the anticipated future cost savings. This type of discussion allowed the committee as a whole to understand the broad priorities and discussion of the types of projects most beneficial to all jurisdictions within Poweshiek County.

4.3 Implementation of Mitigation Actions

44 CFR Requirement §201.6(c)(3)(ii): The mitigation strategy shall include an action strategy describing how the actions identified in paragraph (c)(2)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefits review of the proposed projects and their associated costs.

During meeting #2, participants assembled into break-out groups consisting of others from their jurisdiction to discuss the continuing actions as well as identify any new actions. After meeting #2, jurisdictional representatives worked with others from their jurisdiction to continue development of new actions as well as formulate an action plan for each action and document prioritization elements (discussed further below).

Throughout the discussion of the types of projects that the committee would include in the mitigation plan, emphasis was placed on the importance of a benefit-cost analysis in determining project priority. The Disaster Mitigation Act regulations state that benefit-cost review is the primary method by which mitigation projects should be prioritized. Recognizing the federal regulatory requirement to prioritize by benefit-cost, and the need for any publicly funded project to be cost-effective, the HMPC decided to pursue implementation according to when and where damage occurs, available funding, political will, jurisdictional priority, and priorities identified in the Iowa State Hazard Mitigation Plan. Due to many variables that must be examined during project development, the benefit/cost review at the planning stage, will primarily consist of a qualitative analysis. For each action, the jurisdictions included a narrative describing the types of benefits that could be realized with implementation of the action. Where possible, the cost was estimated as closely as possible with further refinement to occur as project development occurs. Cost-effectiveness will be considered in additional detail when seeking FEMA Hazard Mitigation Assistance grant funding for eligible projects identified in this plan. At that time, additional information will be researched to provide for a quantitative benefit-cost analysis.

STAPLEE is a tool used to assess the costs and benefits, and overall feasibility of mitigation actions. STAPLEE stands for the following:

- **Social:** Will the action be acceptable to the community? Could it have an unfair effect on a particular segment of the population?
- **Technical:** Is the action technically feasible? Are there secondary impacts? Does it offer a long-term solution?
- **Aministrative:** Are there adequate staffing, funding, and maintenance capabilities to implement the project?
- **Political:** Will there be adequate political and public support for the project?
- **Legal:** Does your jurisdiction have the legal authority to implement the action?
- **Economic:** Is the action cost-beneficial? Is there funding available? Will the action contribute to the local economy?
- **Environmental:** Will there be negative environmental consequences from the action? Does it comply with environmental regulations? Is it consistent with community environmental goals?

To provide a mechanism for jurisdictions to prioritize actions a modified STAPLEE score was calculated by the jurisdictions for each new and continued action submitted for the updated mitigation strategy. **Figure 4.1** is a sample of the STAPLEE scoring worksheet that was utilized.

Figure 4.1. Modified STAPLEE Scoring Worksheet

- Jurisdiction: _____ Validated/Completed by: _____
1. Fill in the Action ID for each Continuing and New Action.
 2. Scoring: For each consideration, indicate a plus (+) for favorable and a negative (-) for less favorable. For considerations that do not apply, fill in N/A for not applicable.

STAPLEE Criteria	S (Social)	T (Technical)	A (Administrative)	P (Political)	L (Legal)	E (Economic)	E (Environmental)																		
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal laws	Total	
Action ID #																									

The mitigation action summary table presenting the summary of continuing and new mitigation actions for each jurisdiction is provided in **Table 4.2**. In addition to the 38 actions that were continued from the previous plan, 12 new actions were identified, for a combined total of 50 actions in this updated mitigation strategy. The Action ID for each action has been carried over from the 2011 plan for continuing actions. As a result of completed and deleted actions, the Action ID does not follow a sequential order. New actions were assigned a new Action ID. Following the action summary table, additional details are provided for each continuing and new action in **Table 4.3**. The detailed table serves as the action plan describing how each action will be implemented and administered by the local jurisdiction. The section identifying benefits or losses avoided if the action is implemented is primarily a qualitative review at this time. A more detailed and quantitative benefit-cost analysis was discussed and will be performed prior to implementation of actions when additional detailed project cost information has been developed.

Table 4.2. Mitigation Action Summary—Continuing and New Actions

Action ID	Action Title	Action Status	Status Comment	Hazards Addressed	Issue/Background	Goal #	STAPLEE Score
Poweshiek County 1.03	Identify sinkholes and inform and educate land owners	Continue Not Started	None	Sinkholes	Currently landowners don't have information on the location of known or potential sinkhole areas	3	20
Poweshiek County 1.04	Request a bridge and dam study	Continue not started	Dams are inspected every 2 years	Dam Failure, Flash Flood, River Flood	Information about dam and bridge condition is needed to determine if additional maintenance/improvements are needed	1	21
Poweshiek County 2.04	Develop/build shelter at Diamond Lake	Continue In-Progress	Construction is currently underway	Tornado/Windstorm	Shelter is needed to provide an area of refuge for residents, visitors and campers at Diamond Lake	1	18
Poweshiek County 2.05	Develop/build safe rooms in rural parks	Continue Not Started	None	Tornado/Windstorm	Shelter is needed to provide an area of refuge for visitors to County Parks	1	17
Poweshiek County 2.09	Backup Communication Equipment	Continue Not Started	None	All Hazards	Backup communication is needed in the event primary communication methods are disabled	1, 4	

Action ID	Action Title	Action Status	Status Comment	Hazards Addressed	Issue/Background	Goal #	STAPLEE Score
Poweshiek County 3.01	Create a public information session and conservation (water) program for each town in Poweshiek County	Continue Not Started	None	Drought, Flash Floods	Residents need to understand the potential dangers of flooding causing contaminants in water supply as well as conservation measures that can be undertaken during periods of drought	4	21
Poweshiek County 3.02	Education of emergency procedures for earthquakes	Continue Not Started	None	Earthquakes	Although the probability and potential magnitude of earthquake is low in the county, residents should be educated on steps to take in the event a damaging quake occurs. Residents should also participate in and be informed of the county's plans to accommodate earthquake evacuees if a significant earthquake occurs on the New Madrid Fault	22	22
Poweshiek County 3.03	Public service announcements for extreme heat events	Continue In-Progress	The County has previously opened cooling centers in the county for extreme heat events	Extreme Heat	Residents need information on cooling centers that remain open during extreme heat events	1	22

Action ID	Action Title	Action Status	Status Comment	Hazards Addressed	Issue/Background	Goal #	STAPLEE Score
Poweshiek County 4.03	Develop protection measures for communications tower	Continue Not Started	None	All Hazards	Loss of communication capabilities would significantly reduce the effectiveness of responders and government officials in responding to a disaster	4	19
Poweshiek County 4.04	Purchase larger generator system for courthouse	Continue Not Started	None	Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm	Back-up power is needed to ensure continuity of county operations in the event of power failure	4	14
*Poweshiek County New-1	Annual Review of Floodplain Management Ordinance	New	None	River Flood	Periodic review of the floodplain management ordinance is necessary to ensure it meets the development needs of the county to prevent damage to future construction	3	16
Brooklyn 2.2	Construct Saferooms at trailer park and senior citizen housing and NOAA weather radios.	Continue In-Progress	NOAA radios have been distributed to citizens. Saferooms have not been constructed for trailer park or senior citizen housing	Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm	Currently there are no areas of refuge for mobile home park or senior citizen housing residents	1	12
Brooklyn 3.2	Create larger water supply storage in city	Continue Not Started	None	Drought, Thunderstorm/Lightning/Hail, Tornado/Windstorm	Back-up/redundant water supply is needed in case main supply is impacted		13

Action ID	Action Title	Action Status	Status Comment	Hazards Addressed	Issue/Background	Goal #	STAPLEE Score
Brooklyn New-1	Annual Review of Floodplain Management Ordinance	New	None	River Flood	Annual review of the floodplain management ordinance will ensure it is adequately addressing any development occurring in the floodplain	3	16
Deep River 1.1	Construct safe room	Continue Not Started	None	Severe Winter Storm, tornado/Windstorm	Currently there is no saferoom available for the residents of the community to take shelter during extreme weather events	1	18
Deep River 2.1	Purchase/install generator	Continue Not Started	None	Extreme Heat, Severe Winter Storm, Tornado/windstorm	Back-up power will be needed to ensure A/C or heat as well as use of lighting and other electronic devices,		16
Grinnell 1.1	Purchase generators	Continue Not Started	None	Flash Flood, River Flood, Severe Winter Storm, Tornado/Windstorm	Loss of power at lift station during disasters or power outages can cause damage. Also, the ability to power shelter locations or city offices during a disaster is critical.	4	13

Action ID	Action Title	Action Status	Status Comment	Hazards Addressed	Issue/Background	Goal #	STAPLEE Score
Grinnell 1.5	Provide back-up power for emergency warning systems	Continue In-Progress	1 siren installed with back-up 3 left to do	Tornado/Windstorm	Power outage would eliminate the ability to use outdoor warning/tornado sirens that do not have battery back-up. Some storms can knock power out before tornadoes are formed/spotted and before warning can be issued.	1	17
Grinnell 2.1	Public education program	Continue In-Progress	Severe storm and fire protection information is provided to the public. Additional information needs to be developed/disseminated for other hazards	Drought, Extreme Heat, Flash Flood, Grass/Wildland Fire, River Flood, Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm	The public needs to be aware of all local hazards, the ability of the City to protect them, and their responsibilities	1	9
Grinnell 3.1	Construct safe rooms in critical facilities	Continue not started	None	Severe Winter Storm, tornado/Windstorm	Few city buildings have tornado shelters built in. Several area residents in mobile homes and apartments have no identified shelter areas	1	5
Grinnell New-1	Lining sanitary sewer mains	New	Portions of the town have already been done on the southwest side; Completed portion cost \$750,000	Flash Flood, Sinkholes	Heavy rains infiltrate the sanitary sewer system and can cause back-ups. This has occurred several times in the past few years.	3	14

Action ID	Action Title	Action Status	Status Comment	Hazards Addressed	Issue/Background	Goal #	STAPLEE Score
Grinnell New-2	Water Tower	New	Design plans have been started	Drought, Earthquakes, Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm, Grass/Wildland Fire	Growth of the City to the south has generated a need for greater fire protection systems and additional water supply. An additional tower would also aid with keeping pressure during power outages and supply redundancy incase of loss of one tower during a disaster	1	15
Grinnell New-3	Traffic Signal Back-up	New	One completed, five in planning stage	Flash Flood, Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm	During severe storms and power outages, emergency personnel are needed to direct traffic at intersections that have lost power to the traffic signals	1	9
Grinnell New-4	Culvert Install	New	None	Flash Flood, River Flood	Recent rain events have caused flooding in area being developed	3	9
*Grinnell New-5	Annual Review of Floodplain Management Ordinance	New	None	River Flood	Annual review of the floodplain management ordinance will ensure it is adequately addressing any development occurring in the floodplain	3	16
Hartwick New-1	Community Saferoom	New	None	Thunderstorm/Lightning/Hail, Tornado/Windstorm	There is currently no community tornado shelter for residents	1	9

Action ID	Action Title	Action Status	Status Comment	Hazards Addressed	Issue/Background	Goal #	STAPLEE Score
Malcom 1.2	Public education program	Continue In-Progress	Now have a city wide distributed newsletter, both hard copied and emailed that has information to educate the residents on hazards, upcoming drills and workshops.	All Hazards	This is needed to continue to keep residents informed and educated on hazards, drills they can practice, and upcoming workshops	2	14
Malcom 2.1	Hazard-proof homes and businesses	Continue In-Progress	Fire Department received a grant for new smoke detectors and has begun providing to citizens.	Grass/Wildland Fire	Some structures do not have fire/smoke detectors	3	17
Malcom 3.1	Create an emergency, strategic plan of action for disasters i.e. determine who makes the call to open a shelter, when should the shelter be opened, etc	Continue In-Progress	The Mayor and Fire Chief are specified on our strategic plan to make the calls. This will always be in-progress status since the two can change at election time, and need to be educated in the strategic plan.	All Hazards	The City needs to keep the public informed of the process that has been set on who calls and how decisions are made		14
Malcom 3.2	Create an emergency phone tree	Continue In-Progress	Because of the ever changing residents of Malcom, the City Clerk distributes a form to new residents and current residents requesting: cell phone number & where they may go in the event of an emergency, how many people in their household, etc.	All Hazards	This is needed to be able to contact residents during or after an emergency.	2	14
*Malcom New-1	Annual Review of Floodplain Management Ordinance	New	None	River Flood	Annual review of the floodplain management ordinance will ensure it is adequately addressing any development occurring in the floodplain	3	16

Action ID	Action Title	Action Status	Status Comment	Hazards Addressed	Issue/Background	Goal #	STAPLEE Score
Montezuma 1.1	Construct a safe room for all residents who live in mobile home courts or homes with no basement	Continue Not Started	None	Tornado/Windstorm	Currently there is no designated safe space for residents of mobile homes and homes with no basements	1	9
Montezuma 1.2	Construct a community shelter with basic services	Continue Not Started	None	Severe Winter Storm, Tornado/Windstorm	Currently there is no saferoom available for the residents of the community to take shelter during extreme weather events	1	8
Montezuma 1.3	Purchase generator for community shelter	Continue Not Started	None	Severe Winter Storm, tornado/Windstorm	The saferoom/shelter would be utilized in weather emergencies when power outages may occur	1	9
Montezuma 2.3	Expand warning system programs	Continue Not Started	None	Flash Flood, Severe Winter Storm, Tornado/Windstorm	The City desires to enhance the capabilities . Currently the City is not able to reach the whole community and there is no battery back-up for the existing sirens	1	12
Montezuma 3.1	Expand and maintain fire safety education program in schools	Continue In-Progress	There is a current fire safety program that is 1 week per school year.	Grass/Wildland Fire	Additional information in schools regarding fire safety will contribute to community awareness and preparedness	2	17

Action ID	Action Title	Action Status	Status Comment	Hazards Addressed	Issue/Background	Goal #	STAPLEE Score
Montezuma 4.1	Ensure soundness of buildings in disrepair in Montezuma	Continue In-Progress	None	Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm	Some buildings in town are in disrepair and are more vulnerable to damage in a severe weather event. These structures can also present a safety hazard, especially during/after disaster events		-1
*Montezuma New-1	Annual Review of Floodplain Management Ordinance	New	None	River Flood	Annual review of the floodplain management ordinance will ensure it is adequately addressing any development occurring in the floodplain	3	16
Searsboro 1.1	Sewer (lagoon) improvements	Continue In-Progress	Dredging has occurred to improve inflow and infiltration. This is an ongoing effort as the lagoon will continue to need to be dredged in the future	Flash Flood	Improvements are needed for inflow and infiltration issues. This can be particularly problematic during periods of heavy rain	3	21
Searsboro 4.1	Create access to Highway 146 from town	Continue Not Started	This is still needed for easier and safer access for responders	Extreme Heat, River Flood, Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm	Currently there is no access to or from Highway 146 from the middle of town near the fire department	1	17

Action ID	Action Title	Action Status	Status Comment	Hazards Addressed	Issue/Background	Goal #	STAPLEE Score
Brooklyn-Guernsey-Malcom School District New-1	Construct tornado saferoom	new	None	Tornado/Windstorm	Currently students and visitors at the outdoor complex do not have a safe place to take refuge. Restrooms are the only place semi-protected and they are not large enough for all on site. This saferoom would also be used to shelter students and staff of the school complex during school hours.	1	19
Brooklyn-Guernsey-Malcom School District 1.3	Purchase generators for the school buildings	Continue Not Started	None	Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm	No back-up power for school building	4	15
Grinnell-Newburg School District 1.1	Purchase generators	Continue Not Started	None	Thunderstorm/Lightning/Hail, Tornado/Windstorm/Severe Winter Storm	Generators are needed to power the school buildings in the event of power failure	4	13
Grinnell-Newburg School District 1.4	Develop/build safe room for communication equipment	Continue Not Started	None	Thunderstorm/Lightning/Hail, Tornado/Windstorm	A safe area is needed to house communications equipment so that communications with responders is possible if other areas of the buildings are damaged	4	13

Action ID	Action Title	Action Status	Status Comment	Hazards Addressed	Issue/Background	Goal #	STAPLEE Score
Grinnell-Newburg School District 2.1	Develop/build safe rooms in school buildings	Continue Not Started	None	Thunderstorm/Lightning/Hail, Tornado/Windstorm	Safe areas are needed in district school buildings to shelter students and faculty in the event of tornadoes or other severe weather	1	13
Montezuma School District New-1	Hand held radios for staff	New	None	Severe Winter Storm, tornado/Windstorm	There is a need to improve communications during hazard events, especially when there is loss of power and other communication systems such as PA Intercom are not operational	1, 2	14
Montezuma School District 1.1	Construct a safe room for the high school	Continue Not Started	None	Tornado/Windstorm	Currently there is no saferoom available	1	12
Montezuma School District 4.1	Add culverts to school property to drain storm water and tile low areas	Continue Not Started	None	Flash Flood	The ground is so flat that the water has no natural path to drain away from the building and low-lying areas	3	10
Montezuma School District 4.2	Raise and pave parking lots to prevent flooding	Continue Not Started	None	Flash Flood	The parking lot is so flat that water has no natural drainage. Currently the parking lot is gravel	3, 4	10
Montezuma School District 4.3	Acquire adjacent property to eliminate disasters that would interrupt the operation of school	Continue Not Started	None	Earthquakes, Sinkholes, Tornado/Windstorm	Acquisition of adjacent property would mitigate potential loss of access to school building and disruption of school	3	10

*Denotes Actions related to continued compliance with the NFIP

Table 4.3. Mitigation Action Implementation Strategy—Continuing and New Actions

Action ID	Action Title	Ideas for Implementation	Obstacles to Implementing	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits	Timeline
Poweshiek County 1.03	Identify sinkholes and inform and educate land owners	Locate sinkholes in Poweshiek County and hold information session for landowners to educate on dangers and actions to prevent possible incidents	funding	Poweshiek County Emergency Management	Farm Service Agency, NRCS	local funds, other funds to be identified	Little or no cost	Land owners will be aware of risks and possible incidents. This will also help avoid locating buildings on potential sinkhole areas	More than 5 years
Poweshiek County 1.04	Request a bridge and dam study	Hire a consultant to complete a bridge and dam study to survey the state of the structures in Poweshiek County	Funding	Poweshiek County Road Department	Poweshiek County Board of Supervisors	State and federal funds to be identified	Over \$1,000,000	Problems with the critical structures in the county can be identified and mitigated	3-5 years
Poweshiek County 2.04	Develop/build shelter at Diamond Lake	Continue construction of a shelter for visitors, residents and community members at Diamond Lake	None Identified	Poweshiek County Conservation Board	Poweshiek County Board of Supervisors	Local Funds	\$10,000 to \$50,000	Life safety of community residents and visitors	1 year
Poweshiek County 2.05	Develop/build safe rooms in rural parks	Build safe rooms for visitors, residents and community members at rural parks for use during hazard events	Funding	Poweshiek County Conservation Board	Poweshiek County Board of Supervisors	Local Funds, FEMA Hazard Mitigation Assistance Grants	\$10,000 to \$50,000 each	Life safety of community residents and visitors	More than 5 years
Poweshiek County 2.09	Backup Communication Equipment	Identify backup communication to be purchased for widespread breakdown or disruption of normal communication system capabilities including loss of or long-term interruption of local government radio facilities and major telephone outages due to mechanical failures, traffic accidents, power failure, line severance, and weather	Funding	E-911 Board	To be identified	State and federal funds to be identified	To be determined	Ensure a redundant system so no communication is lost during a failure	3-5 years

Action ID	Action Title	Ideas for Implementation	Obstacles to Implementing	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits	Timeline
Poweshiek County 3.01	Create a public information session and conservation (water) program for each town in Poweshiek County	Create a public information and conservation (water) program for each town in Poweshiek County	Cost	Poweshiek County Emergency Management	City governments and rural water departments	Local Funds and other funds to be identified	To be Determined	Giving information about drought and flood hazards and being prepared with the necessary supplies in case of an event	3-5 years
Poweshiek County 3.02	Education of emergency procedures for earthquakes	Create information to be distributed via the county emergency management website	logistics, staff time	Poweshiek County Emergency Management	Poweshiek County Supervisors, cities in Poweshiek County	Local Funds and other funds to be identified	Little or no cost	public safety	More than 5 years
Poweshiek County 3.03	Public service announcements for extreme heat events	Broadcast public service announcements as a notification of extreme heat events and information on livestock and crop mortality	lack of major broadcast capabilities	Poweshiek County Emergency Management	Poweshiek County Supervisors, cities in Poweshiek County	Local funding	Little or no cost	Giving information about extreme heat hazards and being prepared for its effects	Ongoing seasonally after a funding source is identified
Poweshiek County 4.03	Develop protection measures for communications tower	Research protection devices for communications towers during a lightning event	funding	E-911 Board	Poweshiek County Emergency Management	Local funds	\$100,000 to \$500,000	Ensures the continuity of the communications tower, one of the most important structures before and during hazard events.	2-3 years
Poweshiek County 4.04	Purchase larger generator system for courthouse	Purchase larger generator system to be used in courthouse during an extended power outage	funding, technical feasibility	Poweshiek County Emergency Management	Poweshiek County Board of Supervisors	FEMA Hazard Mitigation Assistance grants, local funds, and other funds to be identified	\$50,000 to \$100,000	Avoid loss of critical facilities; function and prevent damages to critical facilities and other structures associated with and extended power outage	3-5 years
Poweshiek County New-1	Annual Review of Floodplain Management Ordinance	Place annual review of the floodplain management ordinance on the Board of Supervisors agenda	None Identified	Poweshiek County Board of Supervisors	None Identified	Local funding	Little or no cost	Ensure floodplain management ordinance is adequate to minimize losses to development	1 year

Action ID	Action Title	Ideas for Implementation	Obstacles to Implementing	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits	Timeline
Brooklyn 2.2	Construct Saferooms at trailer park and senior citizen housing and NOAA weather radios.	NOAA radios for all businesses and homes in city limits. Install saferoom/storm shelters for trailer park senior citizen housing	Funding	City Council	Property Owners	FEMA HMA grant	\$100,000 to \$500,000	Life safety to mobile home park and senior housing residents	3-5 years
Brooklyn 3.2	Create larger water supply storage in city	Install larger water tower and backup power for the master meter pit at the tower	Funding	City Water Department	To be identified	Local Funds and State and Federal funds to be identified	\$500,000 to \$1,000,000	Larger water supply available for city residents during/after an event	More than 5 years
Brooklyn New-1	Annual Review of Floodplain Management Ordinance	Annually review Floodplain Management Ordinance during City Council Meeting	None Identified	City Council	Iowa Department of Natural Resources	No or Local Funding	Little or No Cost	Ensure adequacy of Floodplain Management Ordinance	Ongoing annually
Deep River 1.1	Construct safe room	Construct a new fire department with an integrated tornado safe room that could also be used by citizens as a shelter during severe winter storms	Funding	Deep River Fire Department	City Council	FEMA Hazard Mitigation Assistance grant and other funds to be identified	\$100,000 to \$500,000	Life safety for residents and visitors	More than 5 years
Deep River 2.1	Purchase/install generator	Purchase a generator for the saferoom/shelter planned for construction in new Fire Department	Funding	Deep River Fire Department	City Council;	FEMA Hazard Mitigation Assistance grant and other funds to be identified	Less than \$10,000	Power generation for saferoom/shelter to ensure A/C or heat and lighting during hazard events	More than 5 years
Grinnell 1.1	Purchase generators	Purchase a generator for City use and adapt critical facilities to hook to portable generator in emergencies	Funding	Grinnell Wastewater Department	Local Fire, Police, and sanitary sewer departments	FEMA Hazard Mitigation Assistance grant and local funds	\$50,000 to \$100,000	Power generation to maintain the function of critical facilities	1 year
Grinnell 1.5	Provide back-up power for emergency warning systems	Purchase and install battery or generator back-up for existing warning systems	Age of current warning system	Grinnell Fire Department	Building and Planning Departments	FEMA Hazard Mitigation Assistance grant and local funds	\$10,000 to \$50,000	Life safety of Grinnell residents and visitors	1 year

Action ID	Action Title	Ideas for Implementation	Obstacles to Implementing	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits	Timeline
Grinnell 2.1	Public education program	Create a program to educate Grinnell residents about the dangers of hazards and how to prepare through informational flyers, meetings, or other interactive media like drills and workshops	Staffing/time	Grinnell Fire Department	Local Police Department and County EMA	FEMA Hazard Mitigation Assistance grant and local funds	Less than \$10,000	Life safety of Grinnell residents and visitors	Start within 1 year and continuing indefinitely
Grinnell 3.1	Construct safe rooms in critical facilities	Construct safe rooms	Funding	Building and Planning Department	Local Fire, Police, Schools, and County EMA	FEMA Hazard Mitigation Assistance grant and local funds	\$500,000 to \$1,000,000	Life safety of residents and visitors	2-3 years
Grinnell New-1	Lining sanitary sewer mains	Continue project of lining areas of town to reduce risk of sewer back up into basements	Funding	Grinnell Wastewater Department	None Identified	FEMA Hazard Mitigation Assistance grant and local funds	Over \$1,000,000	Reduces basement flooding during high rain events	1 year
Grinnell New-2	Water Tower	Install water tower on south side of town	None Identified	Grinnell Water Department	Grinnell Building and Planning Department	Grants and local funds	Over \$1,000,000	Ensure adequate water supply during fire events, aid with keeping pressure during power outages and supply redundancy incase of loss of one tower during a disaster	1 year
Grinnell New-3	Traffic Signal Back-up	Install battery back up on 5 of 6 traffic signals in town	cost and age of current lights	Grinnell Wastewater Department	Grinnell Public Services	Grants and local funds	\$10,000 to \$50,000	Provide safety of motorist and free up needed emergency personnel from having to control intersections during outages	1 year
Grinnell New-4	Culvert Install	Install larger rain culvert under UP Rail Line at Lang Creek Crossing	Funding	Grinnell Wastewater Department	Grinnell Public Services	Grants and local funds	\$100,000 to \$500,000	Reduce risk of flooding	1 year
Grinnell New-5	Annual Review of Floodplain Management Ordinance	Annually review Floodplain Management Ordinance during City Council Meeting	None Identified	City Council	Iowa Department of Natural Resources	No or Local Funding	Little or No Cost	Ensure adequacy of Floodplain Management Ordinance	Ongoing annually

Action ID	Action Title	Ideas for Implementation	Obstacles to Implementing	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits	Timeline
Hartwick New-1	Community Saferoom	construct a community saferoom as an addition to the existing fire station	Funding	Hartwick Fire Department	City Council, County EMA	FEMA Hazard Mitigation Assistance Grants and local funds	\$500,000 to \$1,000,000	Life safety of residents	1 year
Malcom 1.2	Public education program	Create a program to educate Malcom residents about the dangers of hazards and how to prepare through informational flyers, meetings, or other interactive media like drills and workshops	Staffing/time	City Clerk and City Council	Fire Department , youth and after school program, residents	Local Funds	Less than \$10,000	Educate and inform citizens so that they know what to do to mitigate, prepare, and respond to disasters	ongoing
Malcom 2.1	Hazard-proof homes and businesses	Continue to distribute fire/smoke detectors	Communication with citizens to determine need	Malcom Fire Department	City Council	Grant to Fire Department	Less than \$10,000	Life-safety for residents that have up-to-date smoke/fire detectors	1 year
Malcom 3.1	Create an emergency, strategic plan of action for disasters i.e. determine who makes the call to open a shelter, when should the shelter be opened, etc	Create a plan of action for disasters determining who makes the call to open a shelter, when should the shelter be opened, etc.	Update changes after elections	City Council	All City Departments, Poweshiek County Emergency Management, and others to be identified	City of Malcom, others to be identified	Little or no cost	Public would be aware of procedures before a disaster such as who opens shelters, etc.	Ongoing
Malcom 3.2	Create an emergency phone tree	Hold a meeting for all those who wish to be included on the phone tree, especially the elderly and those with small children.	Staffing/time	City Council	Fire Department	Local Funds	Little or no cost	Ensuring all vulnerable populations and citizens will be notified and taken care of in an event. Regular updates will be needed.	Ongoing
Malcom New-1	Annual Review of Floodplain Management Ordinance	Annually review Floodplain Management Ordinance during City Council Meeting	None Identified	City Council	Iowa Department of Natural Resources	No or Local Funding	Little or No Cost	Ensure adequacy of Floodplain Management Ordinance	Ongoing annually

Action ID	Action Title	Ideas for Implementation	Obstacles to Implementing	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits	Timeline
Montezuma 1.1	Construct a safe room for all residents who live in mobile home courts or homes with no basement	Construct a safe room for Montezuma residents and visitors to use during severe weather	Funding	Montezuma City Council	Others to be identified	FEMA Hazard Mitigation Assistance Grants and local funds	100,000 to \$500,000	Life safety of Montezuma residents and visitors	3-5 years
Montezuma 1.2	Construct a community shelter with basic services	Assess where needed most, construct a shelter to serve the community and those in recreational areas (between town and the Lakes)	Funding	Montezuma City Council	County EMA	FEMA Hazard Mitigation Assistance grant, local funds, and other funds to be determined	\$100,000 to \$500,000	Life safety of Montezuma residents and visitors	3-5 years
Montezuma 1.3	Purchase generator for community shelter	Purchase a generator to use in the community shelter during power outages, generator hook up capabilities need to be installed	Funding	Montezuma City Council	County EMA, local contractors	FEMA Hazard Mitigation Assistance grants and local funds	\$10,000 to \$50,000	Continuation of shelter functions during a power outage	3-5 years
Montezuma 2.3	Expand warning system programs	Purchase additional warning siren with backup power capability	Cost and potential technical issues	Montezuma City Council	Poweshiek County Emergency Management, others to be identified	Hazard Mitigation Assistance grants and local funds	\$10,000 to \$50,000	Life safety of Montezuma residents and visitors, use of siren even if there is a power outage	2-3 years
Montezuma 3.1	Expand and maintain fire safety education program in schools	Maintain the current fire safety information program at Montezuma schools and expand to be more frequent than 1 week per school year	Logistics, scheduling	Montezuma Fire Department	Montezuma Schools	Local Funds	Little or no cost	Montezuma youth will be educated about the dangers of fires	1 year and then ongoing
Montezuma 4.1	Ensure soundness of buildings in disrepair in Montezuma	Structural evaluations and improvements on buildings in need	Cost and buy-in from property owners	Montezuma City Council	Local Contractors	Local Funds and other funds to be identified	\$500,000 to \$1,000,000	Avoid damage to property as a result of severe weather events	More than 5 years
Montezuma New-1	Annual Review of Floodplain Management Ordinance	Annually review Floodplain Management Ordinance during City Council Meeting	Lack of expertise/time	Montezuma City Council	Iowa Department of Natural Resources	No or Local Funding	Little or No Cost	Ensure adequacy of Floodplain Management Ordinance	Ongoing annually

Action ID	Action Title	Ideas for Implementation	Obstacles to Implementing	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits	Timeline
Searsboro 1.1	Sewer (lagoon) improvements	Dredge lagoon on regular basis	funding, time	Searsboro City Council	None Identified	To be determined	\$50,000 to \$100,000	Prevent damages due to lagoon problems	3-5 years
Searsboro 4.1	Create access to Highway 146 from town	Construct access ramp at intersection of 1st, 2nd, and Main street including necessary culverts	Funding right-of-way	Searsboro City Council	Iowa Department of Transportation, engineer firm, county engineer, and others to be identified	Local funds, IDOT	\$100,000 to \$500,000	Quicker access for first responders	2-3 years
Brooklyn-Guernsey-Malcom School District New-1	Construct tornado saferoom	Secure funding and construct saferoom at outdoor athletic complex in accordance with FEMA guidelines	Funding	Superintendent's Office	City of Brooklyn, Poweshiek County EMA	FEMA Hazard Mitigation Assistance grants, and other funds to be identified	Over \$1,000,000	life safety of students, staff, and visitors	3-5 years
Brooklyn-Guernsey-Malcom School District 1.3	Purchase generators for the school buildings	Purchase and install a generator for school use	Funding and time	Superintendent's Office	City of Brooklyn, others to be identified	FEMA Hazard Mitigation Assistance Grants, other funds to be identified	\$50,000 to \$100,000	Power generation to maintain the function of school facilities and to avoid food spoilage and loss of sewer pump operation	3-5 years
Grinnell-Newburg School District 1.1	Purchase generators	Purchase generators and install hookups for school district buildings	funding	Grinnell-Newburg School Board	Poweshiek County Emergency Management	FEMA HMGP, Grinnell-Newburg Community School District, others to be identified	\$10,000 to \$50,000	Prevent major disruptions	1 year

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Grinnell-Newburg School District 1.4	Develop/build safe room for communication equipment	Build a safe room for emergency communication equipment and personnel	funding	Grinnell-Newburg School Board	City of Grinnell, City of Newburg, Poweshiek County	FEMA HMGP and PDM, Grinnell-Newburg community School District, city, county, CDBG, and others to be identified	\$10,000 to \$50,000	Safety of communications for hazard events	1 year
Grinnell-Newburg School District 2.1	Develop/build safe rooms in school buildings	Build a safe room for students, staff, and community members in each of the 5 school buildings	funding	Grinnell-Newburg School Board	City of Grinnell, City of Newburg, Poweshiek County	FEMA HMGP and PDM, Grinnell-Newburg community School District, city, county, CDBG, and others to be identified	\$500,000 to \$1,000,000	Life safety of students, staff and community	1 year
Montezuma School District New-1	Hand held radios for staff	This could be accomplished by providing more hand held radios to school staff	funding	Maintenance Department	To be identified	FEMA Hazard Mitigation Assistance grants, local funds, and other funds to be identified	\$10,000 to \$50,000	safety of staff and students	1 year

Action ID	Action Title	Ideas for Implementation	Obstacles to Implementing	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits	Timeline
Montezuma School District 1.1	Construct a safe room for the high school	Retrofit and remodel high school gym and locker rooms and safe room	funding	Maintenance Department	City of Montezuma , Others to be identified	FEMA Hazard Mitigation Assistance grants, local funds, and other funds to be identified	\$100,000 to \$500,000	Life safety for students, staff, and visitors	1 year
Montezuma School District 4.1	Add culverts to school property to drain storm water and tile low areas	Add new culverts where they are needed around the school properties	Funding	Maintenance Department	City of Montezuma	FEMA Hazard Mitigation Assistance grants, local funds, and other funds to be identified	\$10,000 to \$50,000	Minimize damage to school building and property	1 year
Montezuma School District 4.2	Raise and pave parking lots to prevent flooding	Raise and pave parking lots to prevent loss of school staff parking and dangers that come with flooding on school properties	funding	Maintenance Department	City of Montezuma	FEMA Hazard Mitigation Assistance grants, local funds, and other funds to be identified	\$100,000 to \$500,000	Reduces potential damages due to flash or river flooding	1 year
Montezuma School District 4.3	Acquire adjacent property to eliminate disasters that would interrupt the operation of school	Acquire adjacent property to eliminate disasters that would interrupt the operation of school	funding, availability of property	Maintenance Department and Business Office	To be identified	FEMA Hazard Mitigation Assistance grants, local funds, and other funds to be identified	\$100,000 to \$500,000	Create a safe zone around the school building	More than 5 years